

# POPULATION MCH AND FAMILY PLANNING RESEARCH IN BANGLADESH

An Annotated Bibliography

Volume-Eight



Government of the People's Republic of Bangladesh  
Ministry of Health and Family Welfare  
National Institute of Population Research and Training (NIPORT)  
Azimpur, Dhaka-1205, Bangladesh.

**POPULATION MCH AND FAMILY  
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## **FOREWORD**

Population, MCH and Family Planning Research in Bangladesh: An Annotated Bibliography-Volume Eighth is of paramount importance for proper planning of manpower at national and organizational level. It is equally useful to the policy makers, program managers, researchers and other communities in respect to information on the population and development, reproductive health as well as family planning performances, quality of care, MIS, child health, utilization of MCH-FP programs, cost effectiveness of services, women in development, nutrition, HIV/AIDS, sustainability, etc. The main aim of this publication is to disseminate the findings of the research studies conducted during the period of 1999 to 2006 in abstract form.

In Bangladesh, an increasing number of studies are undertaken every year and it is often not accessible, either for in terms of availability or technical language to the users. Additionally, the sharing of information in a cohesive manner will also facilitate researchers to avoid the duplication of ideas and refine research questions in a focused manner. It is hoped that this research compendium will serve the purpose of disseminating the research findings of the studies to all concerned. However, most of the researches conducted within the stated period have been included and we convey our regrets if there have been any others that were missed in the reporting. In this context, I would encourage the active participation of professionals to contribute and use information that would be beneficial towards further development of population, and reproductive health programs.

Last but not the least, I express my gratefulness to those who have generously helped us by providing research reports. I also thank the authors of this compilation who were responsible for the tedious job of compiling, abstracting and producing the volume. Finally, the efforts will be worthwhile if it supports the policymaker, program managers, and researchers in carrying out their respective fields of actions.

(Nasimul Ghani)

## ACKNOWLEDGEMENT

Many professionals and organizations helped us in collecting studies, reports, articles, and seminar papers for the preparation of Population, MCH and Family Planning Research in Bangladesh: An Annotated Bibliography - Eighth Volume. Although it is not possible to individually acknowledge everyone, they all deserve special appreciation for their valuable contribution and keen interest in our work.

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We welcome any suggestions for further improvement of the publication in the future.

(Dr. Ahmed Al-Sabir)  
Director (Research)

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## ABBREVIATIONS

AFLP	-	Assess the Effects of Family Life Education
AIDS	-	Acquired Immune Deficiency Syndrome
ALRI	-	Acute Lower Respiratory Infection
ANC	-	Antenatal Care
ARI	-	Acute Respiratory Infection
BARD	-	Bangladesh Academy for Rural Development
BCC	-	Behavioral Change Communication
BCCP	-	Bangladesh Centre for Communication Programs
BDHS	-	Bangladesh Demographic and Health Survey
BINP	-	Bangladesh Integrated Nutrition Project
BIRDEM	-	Bangladesh Institute of Research and Rehabilitation, Diabetes, Endocrine and Metabolic Disorders
BIRPERHT	-	Bangladesh Institute of Research for Promotion of Essential Reproductive Health and Technologies
BMD	-	Bone Mineral Density
BMI	-	Body Mass Index
BMMS	-	Bangladesh Maternal Mortality Survey
BPHC	-	Bangladesh Population and Health Consortium
BRAC	-	Bangladesh Rural Advancement Committee
BSMMU	-	Bangabandhu Sheikh Mujib Medical University
BWHC	-	Bangladesh Women's Health Coalition
CAR	-	Contraceptive Acceptance Rate
CBR	-	Crude Birth Rate
CC	-	Community Clinic
CCHP	-	Chakaria Community Health Project
CEDAR	-	Concerned for Environment Development and Research
CG	-	Community Group
CMWRA	-	Currently Married Women of Reproductive Age
CNC	-	Community Nutrition Center
CNO	-	Community Nutrition Organizer
CNP	-	Community Nutrition Promoter
CPR	-	Contraceptive Prevalence Rate
CS	-	Civil Surgeon
CSW	-	Commercial Sex Workers
DBRHCP	-	Demand Based Reproductive Health Commodity Project
DCC	-	Dhaka City Corporation
DPT	-	Diphtheria Pertassis Tetanus
DSS	-	Demographic Surveillance System
DUSQ	-	Dhaka University Staff Quarter

EOC	-	Emergency Obstetric Care
EPI	-	Expanded Program on Immunization
ESP	-	Essential Services Package
FDC	-	Family Development Centre
FFYP	-	Fifth Five Year Plan
FGD	-	Focus Group Discussion
FIAP	-	Functional Improvement Action Plan
FIMR	-	Fertility-adjusted Infant Mortality Ratio
FP	-	Family Planning
FPAB	-	Family Planning Association of Bangladesh
FWA	-	Family Welfare Assistant
FWC	-	Family Welfare Centre
FWV	-	Family Welfare Visitors
GDH	-	Gestational Diabetes Mellitus
GOB	-	Government of Bangladesh
GOPD	-	Gynecological Outpatient Department
GPAQ	-	Global Physical Activity Questionnaire
GR	-	Geographical Reconnaissance
HA	-	Health Assistant
HAPP	-	HIV/AIDS Prevention Project
HBV	-	Hepatitis B Virus
HCV	-	Hepatitis C Virus
HDN	-	Hemolytic Disease of Newborn
HDSS	-	Health and Demographic Surveillance System
HFWC	-	Health and Family Welfare Centers
HIES	-	Household Income Expenditure Survey
HIFS	-	Household Income Expenditure Survey
HNPSP	-	Health, Nutrition & Population Sector Program
HPSP	-	Health and Population Sector Program
HRT	-	Hormone Replacement Therapy
ICDDR,B	-	International Centre for Diarrhoeal Disease Research, Bangladesh
ICPD	-	International Conference on Population and Development
ICMH	-	Institute of Child and Mother Health
IDA	-	Iron Deficiency of Anemia
IDU	-	Injecting Drug Users
IEM	-	Information Education and Motivation
IMCI	-	Integrated Management of Childhood Illness
IMPS	-	Integrated Multi-Purpose Master Sample
IMR	-	Infant Mortality Rate
IPC	-	Inter-personal Communication
IPD	-	In-patient Department



IPH	-	Institute of Public Health
IUD	-	Intra-uterine Device
IUGR	-	Intra-uterine Growth Retarded
KAP	-	Knowledge, Attitude and Practice
LBW	-	Low-Birth Weight
LMP	-	Last Menstrual Period
LPC	-	Lathyrus Protein Concentrate
MAC	-	Mid-Arm Circumference
MCA	-	Multiple Classification Analysis
MCH	-	Maternal and Child Health
MCU	-	Management Change Unit
MCWC	-	Maternal and Child Welfare Centre
MDU	-	Management Development Unit
MIS	-	Management Information System
MMR	-	Maternal Mortality Rate
MOHFW	-	Ministry of Health and Family Welfare
MUAC	-	Mid-upper Arm Circumference
MWRA	-	Married Women of Reproductive Age
NBH	-	Normal Birth Weight
NCHS	-	National Centre for Health Statistics
NEP	-	Needle/Syringe Exchange Program
NGO	-	Non-Government Organization
NID	-	National Immunization Day
NIPORT	-	National Institute of Population Research and Training
NIPSOM	-	National Institute of Preventive and Social Medicine
NNP	-	National Nutrition Program
NTBA	-	Non-trained Traditional Birth Attendants
OC	-	Oral Contraceptives
OCP	-	Oral Contraceptive Prevalence
OPD	-	Out-Patient Department
ORP	-	Operations Research Project
ORS	-	Oral Re-hydration Solution
ORT	-	Oral Re-hydration Therapy
PBMI	-	Percent Body Mass Index
PCC	-	Program Coordination Cell
PIH	-	Pregnancy Induced Hypertension
PLA	-	Participatory Learning and Action
PPH	-	Postpartum Hemorrhage
PRA	-	Participatory Rapid Assessment
PRSP	-	Poverty Reduction Strategy Paper

PSU	-	Primary Sampling Unit
RH	-	Reproductive Health
RTI	-	Reproductive Tract Infection
RTM	-	Research Training and Management
SACMO	-	Sub-Assistant Community Medical Officer
SC	-	Satellite Clinic
SMC	-	Social Marketing Company
SPA	-	Service Provision Assessment
SRS	-	Sample Registration System
STD	-	Sexually Transmitted Diseases
STI	-	Sexually Transmitted Infections
TBA	-	Traditional Birth Attendant
TC	-	Total Cholesterol
TFIPP	-	Thana Functional Improvement Pilot Project
TFR	-	Total Fertility Rate
TG	-	Triglyceride
THC	-	Thana Health Complex
TIMR	-	Total Infant Mortality Rate
TOR	-	Terms of Reference
TT	-	Tetanus Toxoid
UMIS	-	Unified Management Information System
UNFPA	-	United Nations Fund for Population Activities
URC	-	University Research Corporation
USA	-	United States of America
VAC	-	Vitamin - A Capsule
VDRL	-	Venereal Disease Research Laboratory
VGD	-	Vulnerable Group Development
VHSS	-	Voluntary Health Services Society

## CHAPTER – 1

### INTRODUCTION TO THE BIBNLIOGRAPHY

The present volume of the annotated bibliography has been prepared with the same objective of previous bibliographies to document population and family planning studies for disseminating the findings to the decision makers and programme managers, researchers etc. It will highlight the findings of research works conducted during 1999-2006. Including this, NIPORT is being published eighth volumes of annotated bibliography which in together provide information of 449 studies on population, maternal and child health and family planning conducted by different national and international organizations and individuals.

While preparing this volume, it was an aim that all the organizations and individuals involved in population and family planning research will be look into about their research activities. Accordingly, 102 individual organizations and including university departments/institutions were conducted for collecting report of the studies. Altogether 449 reports were collected from that organizations and individuals.

During selected of the studies emphasis was given on those studies that are prepared from the primary sources of data. Some studies/articles/seminar papers were prepared from the secondary of data sources also are included in this volume of bibliography considering their importance and necessity for the programme.

In the annotated bibliography, the findings of the studies are appeared in abstract form by a cohesive manner. For this, twelve broad areas identified through analyzing the findings and overall situation of population and family planning studies conducted during 1999-2006. The broad subjects are as followed:

- Population dynamics (fertility, mortality, morbidity etc.)
- Family planning (contraception, methods, side effects, follow-up, etc.)
- Reproductive health (maternal health, adolescent health, antenatal, post natal, and delivery care, etc.)
- Child health (nutrition, growth monitoring, breast feeding, immunization, diarrhoea, etc.)
- Utilization of health service facilities (satellite clinincs, FWC, THC, EPI, etc.)
- Behavioral Change Communication
- Management Information System (participatory management, registration, record keeping, monitoring, supervision, etc.)
- MCH-FP Personnel Evaluation (training, human resources development, performance of the workers, etc.)

- Women in development (gender issues, domestic violence, women role in decision making, mobility, etc.)
- Cost-benefit analysis - MCH & FP Services (contraceptive prices, cost-effectiveness, sustainability, etc.)
- Nutrition
- HIV/AIDS/STDs

Out of the 449 studies, 74 cover the issue of population dynamics, 49 on family planning, 89 on reproductive health, 30 on child health, 44 on utilization of health service facilities, 21 on behavioral change communication, 9 on management information systems (MIS), 10 on MCH-FP Personnel evaluation, 12 on the related issue of women in development, 7 on cost-benefit analysis-MCH-FP services, 66 on nutrition, and 38 on HIV/AIDS/STDs.

Among these studies, there are national level surveys, intervention/operation research, innovative studies, evaluative studies, journal articles, secondary data analysis and surveys.

The bibliography is constituted by the abstracts of research findings and bibliographical citations of the reports. It is arranged in an author-alphabetic order under each broad heading, i. e. citations are arranged alphabetically by the name of the first author and then by the title of the report. All the reports cited in the bibliography include abstracts. Authors' abstract where available, where taken without any change. Whenever an abstract was prepared, every effort was made to include information on the objective, methodology, findings/results and recommendations of the study. An author and subject indexes are appended at the end of the main text for easy search by co-authors' name and specific subject. The numbers cited in the co-author and the subject indexes refer to the sequential numbers of the citations.

## CHAPTER - 2

### 2.1 POPULATION DYNAMICS (Fertility, Mortality, Morbidity etc.)

**001. Afser R. Dynamics of poverty, development and population mobility: the Bangladesh case. *Asia-Pacific Population Journal*. 2004; 19(2): 69-91.**

The paper examines the impact of population mobility on poverty alleviation and how this impact has changed the development parameters of the country, using both primary and secondary data sets from Dhaka city and rural areas. It was highlighted not only that rural households were adopted emigration as a livelihood strategy, but also that rural-urban migration was an increasingly important means of diversifying household and rural economies. The paper also showed that over time, poverty in Dhaka had declined substantially but there was staggering income inequality and remarkable gaps in the quality of life indicators between the rich and the poor. Moreover, the urban poor in general and migrants in particular were likely to find it difficult to sustain economic gains in the long run, owing to intra-urban inequality in income lack of incentive to spent on human capital development and showed delivery of social services. The paper therefore called for labour migrants and the urban poor to be brought under the existing safety-net programs of the interim Poverty Reduction Strategy Paper (PRSP). Urbanization was an area deserving the serious attention of planners and policy makers under a balanced regional development framework.

**002. Ahmed FU; Karim E; Bhuiyan SN. Mid-arm circumference at birth as predictor of low-birth weight and neonatal mortality. *Journal of Bio-Social Science*. 2000; 32: 487-493.**

This study was performed to see whether other simpler measurements could be substituted for weight to identify needs of low birth weight. A total of 1676 live-birth babies in Chittagong Medical College Hospital constituted the study sample and this showed a high co-relation between mid-arm circumference and birth weight ( $r=0.792$ ,  $p<0.000$ ). A mid-arm circumference of  $<9.0$  cm had the best sensitivity and specificity for identifying newborns with a birth-weight of less than 2500g. These neonates were followed up to record neonatal death. Neonatal mortality showed an inverse relation with mid-arm circumference. A mid-arm circumference of  $<9.0$  cm and a birth weight of  $<2500$  gm were equally useful in predicting neonatal outcome. Mid-arm circumference is a simple, quick and reliable indicator for predicting low birth weight and neonatal outcome, and can be easily measured by medical practitioners and traditional birth attendants (TBAs) in the community of developing countries like Bangladesh.

**003. Ahmed KS; Mozumder ABMKA; Barkat-e-Khuda. Redesigning the operations research project surveillance system. Dhaka: ICDDR,B, 1999. (ICDDR, B special publication; 107).**

The Operation Research Project (ORP) of ICDDR,B intended to evaluate the existing design: (i) to examine its effectiveness and efficacy in meeting the needs; (ii) to examine the coverage, comparability and applicability of this design; (iii) to examine the valid data for measuring the impact of interventions and monitoring the changes of indicators; (iv) to highlight the merits and demerits of the design, with a particular emphasis on how the design lacks uniformity between areas of design, sample size, and implementation procedures. The report also

highlighted various sampling designs that are generally used in operations research. A theoretical framework has also been presented other report compared the merits, demerits and suitability of the panel sample, sampling on two occasions (mixed and new sample) with efficacy of each design. The findings of the study showed that the total number of households covered in the comparison areas was higher (about 13 %) than that in the intervention areas. The variation was to be difference in the size of Thanas and unions. Due to inclusion one or more union and also due to substitute for the dropout houses, the total number of sample households increased by 25% in 1998 over 1999. It is a substantial change in the sampling fraction too. A marked variation has been observed in respect to eligible women per households, contraceptive acceptance rate (CAR), infant mortality rate (IMR) between the intervention and comparison areas, and between unions within a Thana. The sample size itself might be responsible for some of these variations. Another remarkable observation was the variation of sampling fraction among the Unions within each Thana and also the change over times. The study area has 22,143 households, and the number of sample households stands at 2,981, giving a sampling fraction of 13.4%. It was observed that not all the Unions in a Thana were intervention area at the same time. Moreover, the interventions were not exactly same in unions with different starting dates. The general trend is the change in the comparison group = Oc2-Oc1 where C= comparison group, Oc1 measures the variable level in comparison group before the intervention, Oc2 measures the variable level in comparison group before the intervention, Oc2 measure the variable level in comparison group after the interventions. It is clear that for a given sample size different indicators will have different margins of error for a 95% confidence level. It is thus, required to make a compromise between cost and margin of error. The findings suggest that a complete influence have the existing ORP data collecting system is necessary to make the system more effective.

**004. Ahmed KS; Rahman A; Islam M. Final report on accelerating the implementation (Plan of Action) of stakeholder strategy in relation to leveling of total fertility rate (TFR). Dhaka: MOH &FW, Planning Wing, 2005.**

The objectives of the study were to review the published and unpublished literature, policy papers, strategies, action plans etc on stakeholder in health, nutrition and population sector program and to identify gaps in current knowledge and understanding, to prepare National Stakeholder Strategy/Plan of Action based on Population policy and with participation of both primary and secondary stakeholder. The study methodology involved documentary analysis, in-depth interview with selected key stakeholders, synthesis of information and preparing a draft action plan for stakeholder participation in consultation with the Ministry of health and Family Welfare (MOHFW) and presenting the draft strategy paper to workshops involving various stakeholders groups. The challenges and issues in relation to reduction of fertility had been identified from the study were : (i) to increase age at marriage and age at first birth (ii) to reduce the impact of population momentum (iii) to ensure more effective method mix and satisfy the unmet need, (iv) to improve the quality of services (v) to reduce unintended pregnancy (vi) to promote small family size norm and reduce preference for son (vii) to check the declining trend of postpartum amenorrhoea period, (viii) to increase male involvement in RH (ix) to improve child survival status. The general recommendations included need for separate allocation of resources; need for revisiting the law of inheritance with a view to improve the status of women and to reduce son preference, small family norm should be popularized, need for reviving the Rural Mothers Centre Project of the Ministry of Social Welfare in order to help strengthen population activities; need for reviewing the curriculum

and management of Modern Education Ssystem in order to strengthen population education; need for developing mechanisms for effective collaboration between local govt. officials and Family Planning Directorate field staff in matters of birth and death registration; need for taking steps to utilize various field level programs and projects to orient and train adolescents in reproductive health care and healthy life style in a coordinated way.

**005. Ahmed MK; Ginneken JV; Razzaque A. Factors associated with adolescent abortion in a rural area of Bangladesh. *Tropical Medicine and International Health*. 2005; 10 (2): 198-205.**

The main aim of this study was to examine the levels and trends in abortion among adolescent girls in 1982-98 and identify groups of adolescents who are at high risk for having an abortion. Data sets were collected from Matlab in Bangladesh where the ICDDR,B, has maintained a DSS, since 1966. Both bivariate and multivariate techniques of analysis were used. But the authors also used qualitative information derived from indepth interviews with adolescents. The study findings revealed that the incidence of abortion was 35 times higher for unmarried than for married adolescents. Abortion ratio were also higher for adolescents who was <18 years old and for those with more than primary education. A little less than half of the abortions were induced by the medical health workers. It means that traditional providers fulfilled an important function in this rural area. The results of the study suggested to adolescents in the framework of comprehensive reproductive health services will help to lower abortion in general and of unsafe abortion provided by traditional providers in particular. The study also drew attention to the need to provide high quality contraceptive services for adolescents.

**006. Ahmed S; Islam A; Khanum PA; Barkat-e-Khuda. Induced abortion: what's happening in rural Bangladesh. *Reproductive Health Matters*. 1999; 7(14): 19-28.**

The present study was undertaken to find out where women go for induced abortion in rural Bangladesh today, their contraceptive practice prior to and after getting pregnant, their reasons for choosing abortion, who makes the decisions for abortion, what complications they develop and where they go for treatment for these. This qualitative study was done in rural Bangladesh among the women seeking abortion-related care at six health facilities in two rural Sub-Districts (Mirsarai and Abhoynagar) of Bangladesh in 1996-97. All the women who came to take advantage for abortion related reason in these six places including two rural hospitals (THCs) or four static clinics (H&FWCs) were invited to participate in the study. One hundred and forty-three women agreed and gave verbal consent but about 5 refused. A semi-structured questionnaire was used, with scope to record responses as expressed by the women themselves. Findings indicated that the majority of the women in this study had an abortion because they did not want any more children. On the other hand the premature women had an abortion mainly because they did not yet want a child, or because of poverty or a poor relationship with their husbands. Sixty-seven percent had used a modern contraceptive method at some stages in their reproductive lives. Seventy-seven percent were not used at the time they got pregnant. It is important to motivate women after an abortion to choose an appropriate method of family planning, thereby reducing risk of another unwanted pregnancy. Women were the sole decision-makers on whether to have an abortion in about 30% of cases and about 48% of cases the women made the decision jointly with their husbands. A majority of women in this study was availed abortion services from facilities where MR was provided. However, a quarter of the abortion procedures were dangerous or inadequate, and the number

of women who developed complications was very high (43%). Only 58 of 143 women attended only one provider, while 85 went to attend a second provider. Of the 85, 37 went on to a third provider and 4 women had to be referred on to the district hospital with serious complications, of whom one died. Many of the dangerous abortions were the most expensive to obtain, not least because of the cost of treatment for complications. Accessibility and availability of menstrual regulation and family planning services need to be strengthened in rural Bangladesh, and training for MR services needs to be improved, along with awareness-raising on the risks of unsafe procedures in the community.

**007. Akramuzzaman M; Cutts FT; Wheeler G; Hossain M. Increased childhood morbidity after measles is short-term in urban Bangladesh. *American J. Epidemiology*. 2000; 151.**

To assess the duration of an increased risk of diarrhea and ALRI after measles was the principal objective of the study. This study was conducted in 1995-1996 at the ICDDR,B hospital and Nandipara community clinic, Dhaka, Bangladesh. Trained health assistants completed standard questionnaires on the clinical, social and demographic characteristics of the children. Information socio-economic characteristics such as household construction, water and electricity supply, and household assets were obtained by observation and interview during the first home visit. Data were double-entered concurrently by using EPI Info version software. The study showed compared with unexposed children, there were higher incidence of hospitalization (adjusted rate ratio –RR=3.1, 95% confidence interval (CI): 1.3, 7.6) and bloody diarrhea in hospital measles cases during the 6 weeks after recruitment. Among community cohorts, there were higher incidences of bloody diarrhea (adjusted RR=4.1, 95% CI: 1.1, 14.6), watery diarrhea, fast breathing and the weekly point prevalence of pneumonia in measles cases during the same period. All measles cases regained lost weight within about 6 weeks. The prevalence of energy to seven recall antigens 6 weeks after recruitment was higher in both hospital and community measles cases. Morbidity increased during the first 6-8 weeks, but the authors found no consistent evidence of longer-term morbidity or wasting. The results support recent findings that measles is not associated with increased mortality. Efforts to improve measles cohort in low-income countries must be intensified.

**008. Alam N; Saha SK; Razzaque A; Ginneken JKV. The Effect of divorce on infant mortality in a remote area of Bangladesh. *Journal of Bio-Social Science*. 2001; 33: 271-278.**

This study examined the effects of divorce on neonatal and postneonatal mortality of babies born before and after divorce in Teknaf, a remote area of Bangladesh. The longitudinal demographic surveillance system (DSS) followed 1762 Muslim marriage in 1982-83 for 5 years to record divorce, deaths of spouse, emigration and births. It recorded 2696 live births during the follow up period and their survival status during infancy. Logistic regression models were used to estimate the effect of divorce on neonatal and post neonatal mortality, controlling for maternal age at birth, parity, sex of the child and household economic status. The study results also revealed that 2.7% of the 2693 births occurred to mothers after divorce, 4.5% to mothers less than 12 months after divorce took place and another 5% more than 12 months before mothers were divorced. Of this birth, 223 died as neonates and 136 as postneonates. Neonatal and post neonatal death rates were higher among birth of all three groups of women whose marriage ended in divorce. The odds of neonatal and postneonatal deaths were higher not only among babies born after divorce, but also among those born



before mothers were divorced. The study results recommended that the high mortality of infants born before and after mother were divorced may reflect how abuse marriage and divorce increase the vulnerability of women and children in rural Bangladesh. Divorce and abuse of women are difficult and intolerable social and health problems that must be addressed.

**009. Alam, N; Ginneken JKV. Repeated neonatal deaths in families with special reference to causes of death. *Pediatric and Perinatal Epidemiology*. 1999; 13: 78-88.**

This study aimed at examining which cause of death of a sibling is related to the mortality of the younger sibling. It used longitudinal vital events data from the maternal and child health and family planning (MCH- FP) project and the comparison areas in Matlab, Bangladesh, were used. The study found primary causes of 868 neonatal deaths and 624 post- neonatal deaths resulting from 1865 singleton live births in 1987-92 and those (967 as neonates and 708 as post- neonates) of their immediate elders siblings were categorized into infections and non- infectious diseases. Multinational logistic regression was used to estimate the risk of younger siblings dying in each age period from infectious and non infectious diseases given the age cause of deaths of older siblings and controlling for other biosocial correlates of infant mortality. A neonatal death of non- infectious causes in a family was twice as likely to be followed by another one occurring at the same age from similar causes compared with a surviving infant followed by neonatal death from non- infectious causes. The MCH-FP project, though successful in reducing the risk of neonatal and post-neonatal mortality from infectious diseases, did not reduce the risk of dying from non- infectious diseases. The most common biological and behavioral determinants of infant mortality are preceding short birth interval high birth order, mother's low or high age at the birth, female sex of the child and the religious affiliation of the parents. Targeting interventions to fewer high risk mothers than is currently the case may be more feasible in the limited countries.

**010. Alam, N. Teenage motherhood and infant mortality in Bangladesh: maternal age-dependent effect of parity one. *Journal of Bio-Social Science*. 2000; 32:229-236.**

This study was conducted to examine the relationship between teenage fertility and high infant partility. In this study vital events recorded by the longitudinal demographic surveillance system in Matlab, Bangladesh, in 1990-1992 were used. Logistics regression was used to estimate the effects on early and late neonatal (0-3 days and 4-28 days respectively) and post neonatal mortality of the following variables: mothers' age at birth, parity, education and religion, sex of the child, household economic status and exposure to a health intervention program. The results of the study showed that mothers age and birth order were highly correlated. Thirty four percent of first births and 5% of second births were born to teenage (<20 years) women in Matlab during 1990-92. Second births made up 11% of teenage births. The largest improvement occurred in neonatal and post neonatal death rates between these younger than 18 and those aged 18-19 although this difference was based on the smaller groups of second births occurring to teenage women. Neonatal death rates were lower among first births than second births born to women younger than 20, especially younger than 18 years. An exception to this pattern occurred among children born to women aged 20-24 years or 25 years or more: first births experienced consistently higher neonatal and postneonatal death rates than second births. The younger, the mother, the higher were the odds of her child dying as a neonate and the odds were higher for second children than first children of teenage mothers. First born children were at higher odds of dying in infancy than second birth if

mothers were in their twenties. Unfavourable mothers socio-economic conditions weakly, but significantly, associated with higher odds of dying during late neonatal and post neonatal period. The study recommended that physical immaturity may be of major importance in determining the relationship between teenage fertility and high neonatal mortality.

**011. Ali M; Emch M; Tofail F; Baqui AH. Implications of health care provision on acute lower respiratory infection mortality in Bangladeshi children. *Social Science & Medicine*. 2001; 52: 267-277.**

The study intended to evaluate the effects of health care provision on acute lower respiratory infection (ALRI) mortality in children in rural Bangladesh every year. The methodological tools of a GI are useful for investigating special variation in health care resources and for determining its association with adverse outcome of diseases. The study data were obtained from three sources: the DSS, the Matlab GIS database and study on the spatial distribution of health practitioners in Matlab. Simple and multiple linear regression analyses were used to estimate the strength of relationships between the aforementioned factors and ALRI mortality. ALRI Specific mortality data for every young children (<2 years of age) were obtained from surveillance system of the area from 1988 to 1993. The result showed that the ALRI mortality rate was 54% lower in the community based ALRI control program area than in a comparison area where there was no intervention. Greater access to allopathic practitioners was related to lower ALRI mortality rates while access to indigenous practitioners were related to higher mortality. In conclusion, the benefit of the community based ALRI control program using a simple case management strategy and improved access to allopathic practitioners, should be replicated in other rural areas of Bangladesh in an effort to reduce child ALRI mortality.

**012. Al-Sabir A; Mitra SN; Islam S; Bhadra SK; Cross A; Kumar S. Bangladesh Demographic and Health Survey 2004. Dhaka & Calverton, Maryland: NIPORT, Mitra and Associates, and ORC Macro, 2005.**

The Bangladesh Demographic and Health Survey (BDHS) 2004 is the fourth of this type conducted in Bangladesh with the objective to provide policy-makers and program managers in health and family planning with detailed information about fertility and family planning, childhood mortality, maternal and child health, nutritional status of children and mothers, and awareness of HIV/AIDS. The survey consisted of two parts: a household-level survey of women and men and a community survey around the sample points from which the households were selected. Preparations for the survey started in mid-2003 and the fieldwork was carried out between January and May 2004. The survey obtained detailed information on fertility levels, marriage, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of women and young children, childhood mortality and causes of death of children under five, maternal and child health, awareness and behavior regarding HIV/AIDS, and other sexually transmitted infections. The findings of this report would be instrumental in assessing the achievements of family planning, nutrition, and health programmes. The report provides estimates of key indicators by socioeconomic and demographic differentials. The findings of this report together with other national surveys would enhance the understanding of important issues related to the Health, Nutrition and Population Sector Program (HNPS). Further analysis of the BDHS data is necessary and hoped that academicians, researchers and program personnel would carry out such analysis and provide in-depth knowledge to guide the future direction and effective implementation of the HNPS.

**013 Arends-Kuenning M; Hossain MB; Barkat-e-Khuda. The effects of family planing worker's contact on fertility preferences: evidence from Bangladesh. *Studies in Family Planning*. 1999; 30(3):183-192.**

This study investigates how the decline in desired family size is related to visits from family planning workers for three intervals: 1982-85, 1985-90, and 1990-93. By using of logistic regression analysis, the number of rounds during which women recieved visits from family planning workers. Longitudinal data collected from Bangladesh 1982 to 1993 shows that women's desired family sizes have declined dramatically. The study findings revealed that the women surveyed who said they wanted no more children, wanted more children, or that the number of children they had was "up to God" according to the number of their living children. The proportion of women who responded "up tp God" declined from 14% in 1982 to 2% in 1993, and their response is most common for women have found living children. Family planning workers visits might provide young women with the support they need to express and act on their fertility desires (Simmons et al. 1988). The impact of a family planning program on fertility preferences could be measured, if after contact with family planning workers, young women were more likely to say that they wanted no more children than to give a fatalistic answer or to say that they wanted additional children. During the period of the four surveys, the proportion of women with two or more living children who indicated that they wanted to stop childbearing increased. Women's behaviour reflected changes in their fertility preferences. Women's fertility decreased for all age groups between 1982 and 1993. The fertility decline was evident although small, even in the 1982-85 and 1990, coinciding with the largest changes in preferences and with the increase in family planning workers visits. The findings of the study suggests that family planning workers visit have little direct effect on fertility preferences in rural Bangladesh, specifically on the transition in women's preferences from wanting more children to wanting no more children.

**014. Anonymous. Bangladesh maternal health services and maternal mortality survey 2001: preliminary report. Dhaka & Maryland: NIPORT & ORC Macro, 2002.**

The Bangladesh maternal health services and maternal mortality survey (BMMS) was intended to serve as a source of maternal health and maternal death data for the policymakers, researchers and it is the first national survey conducted in Bangladesh. The study was implemented under the authority of NIPORT in collaboration with ORC Macro, USA. However, it was decided to make use of published basic census report of 1991 and used wards and unions as the primary sampling unit. The second stage for the urban areas involved selecting two mahallas in each ward while in the rural areas, two mouzas were selected in each selected union except a few exceptions. The third stage involves selecting households, in summary, in each division, the list of wards constituted the initial sample frame for the urban areas, and similarly, the list of unions for the rural areas. The field organizations conducted a household listing operation in all the sample points from November 2000 to April 2001. To obtain a maternal mortality rate at the national level (as well to achieve other objectives of the survey) a stratified national sample of 104,323 households was systematically selected from a total of 1,616 clusters (averagely 65 households from each clusters) from 808 primary sampling units (674 rural, 134 urban). All ever-married women age 13-49 were eligible to be interviewed. It was expected that the sample would yield interviews with more than 100,000 ever-married women. Three types of questionnaire were used for the BMMS viz. a household questionnaire, a women questionnaire for ever married women age 13-49, and a verbal

autopsy questionnaire used for deaths for all to collect information or causes of death of females adult age 13-49. After pre-testing, these questionnaires were finalized in December 2001 and then it was recruited staff for main survey fieldwork and intensive training for them. Fieldwork for the BMMS was carried out by 50 interviewing teams (involving in fieldwork from 9 January 2001 to second week of June 2001) divided into five phases. During fieldwork, emphasis was placed on quality of data. The survey indicates that from the selected 104,323 households, 100,379 were occupied. Of the occupied households, 99% were successfully interviewed. The BMMS households constitute a population of 502,385 persons in which females and males were equally distributed. Thirty-nine of the population is below 15 is relatively higher in rural areas (40%) than in urban areas (36%). It was shown that half of married women are under age 30. Almost 20% of women live in urban areas, while 80% live in rural areas. Almost half of (47%) married women had never attended school, while 28% have attended in primary only, the data indicate that half of mothers in Bangladesh do not receive antenatal care. About 5% of mothers received antenatal care from health assistant or family attendants. Among duration of pregnancy at the first visit was 5.4 months. Two-thirds of pregnant women said no decisions on delivery assistance had been made. Almost (91%) all births occur in Bangladesh at home. Three-fourths of births in Bangladesh are assisted by TBA i.e. dais. Two percent of babies born in Bangladesh are delivered with the use of forceps, while 3% are by caesarian section. It is striking that for 60% of pregnancies, women reported one or more complications; only 40% of pregnancies were free of complications. For pregnancies/deliveries without complications, 43% of cases involved on treatment costs and median expenditure were only 28. But it varies according to socioeconomic status. Urban respondents spent considerably more than rural to treat complications. This survey also focused on the present estimates of maternal mortality from the various type of information. Study stated, on the basis of this preliminary data, is that MMR in Bangladesh during the period 1998 to 2001 was in range of 320 to 400 per 100,000 live births. If we want to narrow this range to any extent, further analysis of the data may be able to shed light on these issues. Further analysis may also leads to conclusions about the completeness of reporting of household deaths; it appears that the number of deaths needs to be revised both the households estimates would also increase.

**015. Anonymous. Health systems and infectious diseases surveillance system report, 2002-2003. Dhaka: ICDDR,B, 2005. (Special publication; no. 120).**

The objectives of the study are to monitor the services provided through the field workers, to provide feedback to the project management to review findings and recommends changes and to assist in Evaluation of the demographic and programatic impacts of those services and policies. This report presents a description and analysis of the data collected by the Health Systems and Infectious Diseases Surveillance System (HSIDSS) during 2002 and 2003. The study found that compared to 200-2001 the mortality did not show a clear trend in the rural areas. Life expectancy at births for males in Mirsarai and females in Abhoynagar, Keshobpur increased between the years of 2001-2003, while that of females in Mirsarai and males in Abhoynagar/Keshobpur decreased in the same period. The total fertility rates rose in Abhoynagar/Keshobpur from 2.5 to 2.6 in 2002, to fall back to 2.4 in 2003. In Mirsarai it fell from 2.9 to 2.7 in 2003. The mean age at first marriage for men in the rural areas was 25.1 in 2002 and 25.3 in 2003. For women it remained almost the same (19.1) in 2003. The mean age at first marriage in the new urban surveillance site of Kamlapur in 2003 was 25.8 years for men and 19.3 for women. Contraceptive prevalence was highest in Abhoynagar and lowest in

Mirsarai. Vaccination coverage was very high in all areas except for tetanus toxoid vaccinations for women of reproductive age in all areas. Health spending was much in Mirsarai than in other surveillance areas. During the last 10 years of education of girls has improved compared to that of boys. However Mirsarai is performing less well compared with the other rural sites and even showed a decline in the proportion of boys completing primary and secondary education. The study recommends that more careful observations are needed to help improve the prevailing picture.

**016. Azad K; Abdullah AHK;Nahar N;Banu LA;Shahidullah M;Gegum R;Roy RR;Faruque MG;Akter S. Use of wigglesworth classification for the assessment of perinatal mortality in Bangladesh-a preliminary study.*BMRC Bulletin*. 2003;29(2):38-47.**

The aims of this study were to assess the feasibility of this classification determine the causes of perinatal deaths and thereby identify the areas need intervention. The Wigglesworth Pathophysiological Classification was used to analyzed perinatal deaths occurring in 5 health centres in Bangladesh. A total of 8058 births were recorded at 5 centres during the period of 11 months from mid January to mid December, 2001. There were 1069 deaths in the perinatal period. Strillbirths were slightly more frequent (53.5%) than early neonateal deaths (46.5%). Among the stillbirths, fresh stillbirths predominated over normally formed macerated ones al all centres except BIRDEM, where the majority was macerated. The majority (71.6%) perinatal deaths were the gorups comprising asphyzial conditions (46.8%), conditions associated with immaturity (13.3%), and normally formed macerated stillbirths (11.5%). In the group, other specific conditions which was responsible for 9.3% of perinatal deaths all but one case was attributed to spesis. The cases were subdivided by birth groups asphyxial predominated in all but the <1000g group in whom immaturity was responsible. Conditions associated with immaturity were second highest in number. The majority of the perinatal deaths (83.4%) were in babies less than 2500g. The study had shown that the Wigglesworth Classification could be used in different types of health facilities in Bangladesh by doctors, nurses and midwives. The areas which need to be improved that are: postpartum care, obsteric and newborn care practices, and environmental factors responsible for the high prevalence of prematurity and low births weight.

**017. Baqui AH; Al-Sabir A; Chakraborty N; Begum N; Hill K; Black RE. Determinants of neonatal, postnatal and child mortality changes in Bangladesh. *In: BHDS 1996-97 special analysis*. Dhaka: NIPORT/Measure DHS+, 2000: 107-133.**

The study was carried out to estimate the effects of various interventions, identify areas where investments could be particularly cost-effective, and to make appropriate policy recommendations. Using BDHS 1996-97 data, this study examined the effects of past and current health and family planning interventions on child mortality. BDHS-1996/97 data were also analyzed to identify the determiners of neonatal, post-neonatal, and 1-4 years old child mortality changes. The findings indicated that only 11.3% of the households lived in urban areas. Ninety-percent households used tube-wel water and five percent used piped water and other sources of drinking water. Only 32% households use some form of sanitary latrine. About 39% of ever-married women are employed, 30% reported that they work outside from the homes. Surprising at the time of birth, about one-third mother are teenagers. Most of the mothers (about 70%) do not receive any antenatal care during pregnancy, 95% births occur at home, and about two-third of them are assisted by TBA, only 8% of birth assisted by medically trained persons. Problems around pregnancy are common, one-third of mothers

reported prolonged labor, 15% reported excessive bleeding and 15% about symptoms of puerperal sepsis. ORT use rates are high in Chittagong (74%) and Khulna (73%). Seventy-two percent children received at least one capsules of vitamin A within his/her 6 months. Both mother and father educational attainment was significantly negatively associated with all types of child mortality especially for 1-4 years of age and neonatal mortality. Mothers' young age was associated with higher neonatal mortality. Short preceding birth interval was strongly associated with higher neonatal and postnatal mortality and to a lesser extent with higher 1-4 year old child mortality. The analysis of mortality risk of young children in the year of five, preceding the survey and suggested that in addition to parental education and preceding birth interval, access to health services and use of preventive and curative health care is needed to reduce the risk of child death.

**018. Baqui AH; Al-Sabir A; Begum N; Arifeen SE; Mitra SN; Black RE. Causes of childhood deaths in Bangladesh: an update. *Acta Paediatrica*, 2001; 90: 682-690.**

The objective of the study was to determine the cause structure of child death. Little is known about causes of child death in Bangladesh from the conventional sources since there is no vital registration system and very few deaths are attended by a qualified physician. To determine the cause of child deaths, verbal autopsy interviews were conducted in the Bangladesh Demographic and Health Survey (BDHS) 1993/94 national sample. Verbal autopsy is a method to finding out the causes of death based on an interview with the next of kin or other caregivers. Between BDHS 1993/94 and BDHS 1996/97, 1-4-y-old child mortality in Bangladesh declined by about 27.0%. This impressive decline prompted a verbal autopsy study using the BDHS 1996/97 national sample to determine whether the cause structure had changed. The same verbal autopsy instrument and methods to collect the data and the same algorithm to assign causes of death were used in both surveys. The data were collected using a structured verbal questionnaire, which also allowed collection of some open-ended information. A total of 726 deaths in children under-5 years were reported in the BDHS 1996/97. Attempts were made to conduct verbal autopsy interviews in the entire sample. The verbal autopsy interview was completed in 684 (94.2%) cases. The findings showed that, there were major differences in the cause of death structure by age group. In children under 5 year old, the largest single category of confirmed deaths was from ARI (15.8%), with a further 3.6% of deaths with confirmed symptoms of ARI in combination with some form of diarrhoea, and an additional 8.1% of deaths were diagnosed as possible and diarrhoea. If all types of diarrhoeal death (acute watery, persistent and dysentery) were combined, 13.3% of the deaths in children under 5 year were associated with confirmed symptoms of diarrhoea and a further 5.3% were associated with possible diarrhoea. Neonatal tetanus was accounted for 7.1% and injury accounted for 6.6% of all deaths in children under-5. Most of the injury deaths were due to drowning. Deaths due to measles alone were few (0.8%), but a further 2.2% were confirmed as measles followed by ARI and /or diarrhoea. Despite an impressive decline in deaths due to ARI, this condition remains the most important known cause of death in Bangladeshi children. Neonatal tetanus and measles together account for about 10% of deaths in children below five years. Further improvements in child survival are possible by improving access to and quality of available child survival interventions.

**019. Barbhuiya MAK; Kabir A; Islam MS. The effect of marriage dissolution on fertility in Bangladesh. *JOPSOM*. 2001; 20 (2): 1-5.**

The objective of the study was to investigate the effect of marriage dissolution on fertility as measured by the number of children ever born. Data derived from the 1996-97 Bangladesh Demographic and Health Survey (BDHS 1996-97) was utilized in this study. A two-stage probability sample design was used. A sample of clusters was drawn. Each selected cluster was then mapped and all households were listed. At the second stage, a sample of households was selected within area. Thus, a total of 9099 households were selected, of which 8682 households successfully interviewed. The number of children ever born has been standardized by the age distribution of the respondents. Information revealed that when the women's population of reproductive age (15-49 years) is classified according to marital status, it indicates the extent to which the female population is exposed to marital union. It also provides risk of pregnancies, which ultimately determine the fertility level of a society. The proportion of female married in the age group 15-19 years is the most sensitive fertility index. It reveals the age, either early or late, at which a women starts her sexual activity within marriage and the duration of marriage, which are strong factors for fertility determination. They are stronger for high fertility in a community where the adoption of modern contraceptives is low. The proportion of currently married women of reproductive age increases with higher ages up to the age group 30-34 and then declines gradually. The data suggest that among the women who are currently married had on an average 3.4 live births while their counterparts who are not currently married had on an average 3.1 live births. The results also suggest that for younger as well as older age cohort, the mean number of children ever born was higher among currently married women compared to their counterparts who are not currently married. Analysis using number of children ever born as measure of fertility shows that the length of reproductive period spent outside of marital union as a result of divorce, separation or widowhood has a negative effect on fertility. This article attempts to find the effect of marriage dissolution on fertility. In Bangladesh dissolution of marriage affect fertility considerably. The results indicate that when the mean number of children ever born to women classified by marital status, currently married women were found to be more fertile than their counterpart who was not currently married.

**020. Bari MA; Shamim MA; Khan AW; Bhuiya SA. The married lives of slum women of Dhaka City. *JOPSOM*. 2000; 19 (2): 55-60.**

The objective of the study was to know about the profiles of marriage life among slum mothers. The descriptive cross-sectional study was done among 177 slum married-mothers of Dhaka City and it was done at the Department of Community Medicine, ZH Sikder Women's Medical College during February 2000. The study result revealed that the mean±SD age of the married women was 30±11 years with majority (72.52%) belonging to 19-38 years and 11% being from 9-18 years of age. Literacy rate was 26%, but all were below SSC level. Majority (85.47%) had monthly income between Tk. 500-3000 with mean±SD income of Tk. 2134±962. The mean±SD age at marriage was 14±4 years and 94% women were married between 9-18 years. About 79% of the women of the slum married only once, 20% twice and 1% thrice. Over 20% of them were married twice and about 1% was married thrice. Out of 117 respondents, 25 divorced their previous husbands due to causes like poverty (48%), physical torturing (16%), etc. Respondents' marriage occurred in right age in 48.72% cases. In about 24% cases, marriages occurred on their wish, while in 11.11% cases earlier marriage

was reported due to poverty. Few husbands had 3 wives (2.56%), 11.11% had 2 wives and all others (86.33%) had single wife. Dowry was given to husbands in 27.35% of the marriages. Out of 117 women, 7 had no child, 31.82% had their first children after first year of marriage, 17.27% after second year, 20% after third year, 10% after four years and 20.91% after five years. The women experienced ill behavior from the husbands in 47.86% cases, but 52.14% of them said that their husbands were affectionate towards them. Out of 117 respondents, 7 did not have any child. Number of children of the parents/couples ranged from 1-7 and 46.13% had more than 2 children. Majority of them (67.52%) desire to have 2 children and 24.79% wish to have 3 children. Oral contraceptive pills users were more (18.80%) and 44.44% uses any of the other methods. This study explores some information on the profiles of marriage life of women living in slum of Dhaka City.

**021. Barkat-e-Khuda; Roy NC; Rahman DMM. Family planning and fertility in Bangladesh. *Asia-Pacific Population Journal*. 2000; 15(1): 41-54.**

The article looked into the trends in contraceptive use and fertility levels in Bangladesh from 1975 to 1997 and examined the major factors affecting contraceptive use and fertility. National level data have been used for the 1975-1997 period. For the multivariate analysis of the determinants of contraceptive use and fertility decline, data from the 1993/94 and 1996/97 BDHS have been used. Two dependent variables are used: i) current use of any contraception, and ii) children born during the 3 years prior to the BDHS surveys. Between 1975-1996/97, ever-use of any method of family planning increased five-fold. During the same period, the contraceptive prevalence rate (CPR) increased by over six times. The relative share of modern methods increased but the relative share of long-acting clinical methods declined. The probability of contraceptive use rose significantly with age up to 39 years, and then decline. Contraceptive use was higher among the working women than housewives. So, any further acceleration in contraceptive prevalence and fertility decline would require major efforts directed for improving women's status, increasing access to the media and improving programme efforts in the low-performing divisions. In addition to further strengthening the family planning and reproductive health programme, the government should attention to a greater priority to enhancement of women's status through increased female educational and employment activities.

**022. Begum A; Khan HTA. Obstetric related residual morbidities among the women in Bangladesh. *JOPSOM*. 1999; 18 (1): 22-29.**

The objective of the study was to determine the extent of obstetric related residual morbidities among the postmenopausal women in Bangladesh. In this study data were collected from postmenopausal women in outpatient department of two hospitals. The both study areas were situated in the heart of the Metropolitan Cities of Narayanganj and Dhaka. A total of 500 patients were interviewed. The study revealed that about 31.4% of the respondents ever suffered from obstetric related gynecological diseases. Parity was found to have positive relationship with morbidity and mothers with 5 or more parity had a greater risk to suffer. Muslim women suffer more compared to non-Muslim counterparts. Child death was found to be associated with morbidity. Prolapse was found to be higher among uneducated women compared to educated women. The study also showed those women with 5 or more parity was associated with greater risk of prolapse than those with less parity. Prolapsed was most prevalent among mothers who had ever experienced child death compared to those mothers who never lost any. In most cases women preferred to have their delivery normally at home



with the help of relatives or dais. From the study, it was evident that those who prefer to conduct their delivery at home by untrained birth attendants, they are found to suffer from uterine prolapse mostly. The findings of the study may help planners and policy makers to take appropriate measures with a view to reduce morbidity levels among the post-menopausal women of the country. Most of the obstetric related morbidities, such as, uterine prolapse, perineal tear, vesico-vaginal fistula etc. can be prevented by proper implementation of special programme targeted to the problems. To prevent and reduce the sufferings of genital prolapse, a different strategy should be adopted. As the present study did not represent all the country, more studies are suggested with nationwide coverage to fully understand the nature and burden of the problem.

**023. Begum M. Factors affecting family size in rural Bangladesh. *BMRC Bulletin*.2004;30(3):115-124.**

The study was intended to estimate the family size and to identify the factors influencing family size in rural areas of Bangladesh. This was a cross sectional study and to get data respondents of 150 households were interviewed through interview schedule and indepth questionnaires. The size of the family was observed as 4.59 persons where nearly half of the respondents (48%) having less than 5 members. Age of the respondent number of children age of the first and last child, average monthly income number of rooms in the house, persons living in the main dwelling houses, number of earning persons having audio-visual assets had statistically significant association with the size of the family and all were with higher percentage in big family. Middle income group was more in the small and big family category (75% and 65.40% respectively). The higher income group was more common in big family than small one (23.10% and 8.30% respectively). There was significant association between family size and average monthly income ( $p < 0.05$ ). Number of earning persons, housing type, number of rooms in the house and persons living in the main dwelling houses were also interdependent with average monthly income and proved to be a factor for family size determination. The study recommended that family planning activities should be intensified with modification of a educational programs in mass media to attract the rural population regarding size, programs should be designed to address the bad effect of big family on the economic status of the rural population.

**024. Begum RA. Growth patterns of low birth weight infants. *JOPSOM*. 2002; 21(1): 107-113.**

This paper was written to explore the growth pattern of low birth weight of infants after reviewing relevant published literature. The prevalence of Low Birth Weight (LBW) infants is very high in both developed and developing countries. In developing countries the problem lies with nutritional intra-uterine growth retarded LBW whereas in developed country the problem is mainly due to preterm LBW. Growth patterns of 3443 LBW infants, born between the years 1960 to 1987 were studied in these literatures, the majority was born in the year 1985. The duration of follow-up was from one year to maximum seven years. Most of the studies took place in the USA. Growth parameters were weight, height/length and head circumference. Studies on growth patterns of LBW infants revealed that their growth patterns are different from Normal Birth Weight (NBW) children. They tend to remain lighter and shorter than NBW children do. The LBW infants showed a slower growth rate in all the three measurements compared to normal birth weight full term infants. While compared between the two groups of LBW, it showed that preterm children had a faster growth rate than Intra -

Uterine Growth Retarded (IUGR) infants. Although, some of the studies showed that a greater velocity of growth among the pre-term, they did not attain the same distant growth of NBW infants. Therefore, despite some catch-up growth, the LBW infants have different patterns of growth than term infants of normal birth weight. The result of the study clearly shows that vast majority of SGA children have the potential for good catch-up growth. For weight only 15% of the boys and girls remained below -2 SD at 4 years. The boys and 2/3<sup>rd</sup> of the girls reached a catch-up in weight within first three months after birth. By comparison, catch-up for height is more gradual. At 4 years of age, only 5% of girls and 11% of the boys remained below -2SD for height. A comparative longitudinal study of the growth of low birth weight pre-term AGA and term SGA infants was carried out in 202 LBW children who were born in Buffalo hospital New York. Velocity and distance growth was calculated from birth to 3 years from the mean measurements for weight, length and head circumference. The result of the study for velocity of growth showed that most rapid growth occurred from birth to 13 weeks of age. AGA pre-term infants grow significantly more rapidly than term SGA infants ( $P < 0.01$ ). Similarly, larger increment is head circumference in AGA than SGA infants. Infants of pre-term AGA group exhibited greater distance growth because of more rapid growth than those of term SGA infants at 1 year of age.

**025. Begum S. Morbidity and health seeking behaviour in rural Bangladesh: variations across socio-economic sub-groups. Dhaka: BIDS, 2005.**

The aim of this study is to examine the health status of the rural people in Bangladesh who represent more than three fourths of the country's total population. The data for this study have come from a bigger study. Analysis of poverty trends (APT) initiated by BIDS in 1994-95. The study identifies that an average more than 12% of the rural people fall or remain sick in 6 months. In rural area the risk of falling sick from the diseases is not uniform over the ages. The morbidity rate of the extreme poor for acute illness is about 15 percent; it is 12% for the moderate poor and 11.6 for the non poor. In comparison to rural men the morbidity rate of rural women is found higher. The diseases pattern over the age groups reveal that the biggest enemies of the rural infants and children are the diarrhoeal diseases, cold-cough and viral fevers. While gastric (ulcer/acidity) are an important causes of ailments for the adults. At present about 98% of the rural acute illness and 100% of the major ones receive treatment. Overwhelming preference of the rural people is found of allopathic treatment (90%) while 10% still visit homeopathy experts. Kabiraji and Unani seem to have some influence over these rural people. Most of the sources of medical treatment are government and private clinics/hospital which also varies between rural men and women. The rural poor women are most displeased with the government sector facilities. For major illness the quality care constitutes 62% of which 23% is supplied by the public sector and 39% is provided by the private sectors. According to the survey rural people suffer on average for 13 days per episode of an acute illness and 72 days of a major illness. And the duration of bedridden is somewhat larger for the rural male than the rural female. Most of them can not meet the cost of modern treatment. The study recommends that appropriate strategy for rural health care deserves serious consideration. The Govt. effort to develop a sound health care delivery is required immediately. A proven policy for this would go a long way to ensure people's health and well being.

**026. Begum S. Abortion in rural Bangladesh: nature, causes, problems and practices. Dhaka: BIDS, 2003. (BIDS research report; 174).**

The main purpose of the study was to estimate the extent of maternal and neonatal mortality and morbidity in four districts of Bangladesh and to identify factors affecting the mortality and morbidity of the mothers and newborns. The data utilized for this study was collected from the study The Baseline Survey of maternal and Neo-natal Health Care in Selected Districts of Bangladesh conducted by BIDS in 1995. The relevant data have come from eight unions of four pre-selected districts namely, Bhola, Sirajganj, Tangail and Feni. A house to house survey with household head as respondent was conducted in all unions using a short questionnaire in order to locate women who had an abortion during last 12 months. The detail survey for abortion related information was conducted on 160 women. It was observed that abortion risk was not uniform for all women across ages in rural area and was related positively with age viz. such risk increases with the increase in women's age but did so significantly after age 30. The estimated abortion rate for women aged below 20 was 3.1 and 3.4 for women aged 20-29 but jumped to 7.3 for women aged above 30, indicating almost twice higher risk in older ages above 30 than that in ages below 30. Data showed that 59% of the abortions took place suddenly for no specific reasons, 9% due to various traumas 2.5% was induced to save mother's life and remaining 31% performed deliberately for some personal reasons. Eighty-seven per cent abortion caused by endogenous conditions arose out of biological environment and more than 90% of the induced abortions performed deliberately. It was suggested that for reducing biological risk a significant breakthrough could be achieved through scientific management of the pregnancy making use of prenatal services. In case of induced abortions, facilities of MR have to be expanded, popularized and made more accessible to rural women. To yield desired results, it was felt that public sector should assume greater role in delivering maternal/reproductive services to the rural, particularly rural poor women.

**027. Begum SA. National family planning programme: chronological change, present implementation procedure, strength and weaknesses. In: Population and development dynamics: a training handbook/edited by Md. Rezaul Karim et al. Comilla: BARD, 2000. pp. 54-68.**

This paper describes the evolutionary changes occurred in family planning programme (FPP) in ten phases in terms of its organizational structure, programme, strategy and goals. In the first phase (1953-59), the population issue was brought into focus and generated some interests in family planning. In the second phase (1960-65) the overall achievement was modest, because the funds allocated were not adequate. During the third phase (1965-70), the importance of FPP was acknowledged by making it a separate sector in the five-year plan and established an elaborate and autonomous organization and separated from the health services. The integration of FPP with health services was officially launched in fourth phase (1973-78) and much emphasis was given to administration at Thana, District and Secretariat levels. In the fifth phase (1978-80), the overall programme was multi-sectoral and under-eight ministries/divisions with the major objective of integrating population with development programme of other ministries and extending the traditional programme into areas beyond family planning. Sixth phase (1980-85) included provision of family planning services, information, education and motivation, maternal and child health services, multi-sectoral programmes and greater involvement of non-government organizations. An increased role of women in the society was envisaged to influence reproductive norms and fertility behaviour.

During the seventh phase (1985-90), the programme emphasized the provision of contraceptive services to meet the existing unmet demand and to create more demand through health, socio-economic and legal measures. The role of NGOs in population control was expanded to complement government efforts. In the eighth phase (1990-95) family planning services, information, education and communication, MCH services, development of physical infrastructure, manpower development, evaluation, monitoring, supervision and multi-sectoral programmes were included in the population programme and these activities continued in the ninth phase (1995-97). The tenth or current phase (1997-2002) was pursuing the activities of the multi-sectoral population programmes including the existing women's programmes and involving other ministries including those have not yet been involved. The paper mentioned some considerable success and strength of FPP against the backdrop of low literacy rate, low status of women and low income along with some weakness of the programme. It was concluded that to make the family planning programme more effective it should be linked with the economic programmes, and other weaknesses of the programme should also be reduced/removed.

**028. Begum, SA. Family planning in comprehensive village development: the experiences of BARD. In: *Population and development dynamics; a training handbook*/edited by Md. Rezaul Karim et al. Comilla: BARD, 2000. pp. 69-77.**

The Comprehensive Village Development Project (CVDP) was an experimental project of Bangladesh Academy for Rural Development (BARD). The principal objective of this study were to involve the people of all classes, professions and genders in socio-economic activities for poverty alleviation, multi-dimensional development and welfare of the rural community and was being implemented through a broad-based village cooperative institution called the Comprehensive Village Development Cooperative Society (CVDCS). The components of the project were local level planning, savings and capital formation, credit, agricultural production, appropriate technology, livestock development, fishery development, income generating non-farm activities, educational development, youth development, environment and social forestry, rural communication and culture, women and child development, community health and nutrition development and family planning. Most of the members of CVDCS received credit and use them in different income raising activities. Another small action research project namely comprehensive Population and Family Planning in Integrated Rural Development (PFP-IRD) which also integrated credit with family planning in two CVDP villages. This project also offered training on family planning related activities and operation of seed capital. The experiences of CVDP and PFP-IRD of BARD showed that the integration of MCH-based family planning programme with economic development activities accelerates Contraceptive Prevalence Rate. In this situation, it could be recommended that the national MCH-based family planning programme should be integrated with economic development.

**029. Bhuiyan A; Aziz A; Chowdhury M. Induced abortion in a rural area of Bangladesh: process management health consequences. Dhaka: ICDDR,B, 1999.**

The study was carried out to document the context of induced abortion, nature of management and post abortion complications in Matlab, Bangladesh. The study included all 91 induced abortion cases that took place in the study area from July to October 1995. Information was collected from women within six weeks of the abortion. In-depth interviewing and physical examination by a physician was carried out for 20 randomly selected cases. The findings

depicted a complex context within which women go through for an abortion. In most cases, the complete lack of use or lack of use effectiveness of the family planning methods resulted in unwanted pregnancies, women in desperation sought abortion services from traditional sources at the beginning. As the condition worsened they contracted the available modern service facilities. At times it was too late and led to serious consequences. Limited access to safe abortion services, together with an absence of social support, put women in a life threatening condition. Ninety four percent of the induced abortion cases reported their pregnancies to be unwanted. The main reasons for abortion of wanted pregnancies included deterioration of the relationship with husbands. Fifty-seven percent of the induced abortion cases were done by using medical procedures 24% used traditional method 8% took allopathic tablets, 7% took normal family planning methods including injectables. Homeo-pathic medicine was taken by 4% of respondents. Half of the abortions were performed either in a doctor's chamber or in a hospital. As recommendations, it is said that prevention of unwanted pregnancies and access to safe abortion services will be needed to improve the situation.

**030. Bhuiyna A; Hanif SMA; Mahmood SS. Chakaria health and demographic surveillance system: focusing on the poor and vulnerable. Dhaka: ICDDR,B, 2006.**

The study was carried out to observe and assess health and demographic surveillance system among the poor and vulnerables found at chakaria in Cox'sbazar district, Bangladesh. A questionnaire was designed in Bangla to collect information and interviewers collected data either from the head of each household or from other informed members of the household during April 1999-February 2000. The survey data identified that 72% households comprised under families and seven percent of those households were female headed and 93% male headed. Eight percent of the households had a radio, 4% a television and 10% had electricity supply at home. Materials used in building dwellings included leaf, polythene, corrugated tin brick and cement. Ninety percent of them were Bangalee and the remaining was of an ethnic household group having 93% Muslims 5% Hindus and 1% Buddhists. The singular mean age at marriage for male and female was 27 years and 20 years respectively. Twenty four percent of the currently married women of reproductive age (15-49 years) used modern family planning methods. The pills were most commonly used 56% followed by injectables (23%), sterilization 11% condom 4% and other traditional methods (3%). Six percent of the households did not have any fixed place for defecation, 22% had a ring slab or some kind of elemented latrine and the remaining households had a fixed place without any protection against fatal contamination. Forty percent of the households using only tubewell water for washing utensils and 21% only surface water. Ninety three percent had at least one mosquito bed net and 50% had two bed nets. Eighty six percent of children aged 12-23 months, received BCG, 86% DPT, 81% DPT2, 73% DPT3 and 64% measles vaccinations. Girls were more undernourished than boys. The proportion of malnourished children was more in poor households than in better families. It can be recommended that for the betterment of these people some effective and timely steps regarding family planning exposure to media, electricity supply, modern housing system, better medical facilities should be reached them as soon as possible.

**031. Breiman RF; Streatfield PK; Phelan M; Shifa N; Rashid M; Yunus M. Effect of infant immunization on childhood mortality in rural Bangladesh: analysis of health and demographic surveillance data. *Lancet*. 2004; 364: 2204-11.**

The objective of the study was to assess associations between vaccinations and mortality over 15 years after the introduction of routine infant immunization programs in Matlab, Bangladesh. The study analysed data recorded in a comprehensive health and demographic surveillance system from 1986 to 2001. This study also did univariate analyses and assessed vaccinations as independent factors with other variables in cox models with time dependent covariates. The study findings exposed diphtheria tetanus pertussis (DTP) and oral polio vaccination were independently associated with decreased risk of death before age 9 months, as were amount of maternal education, maternal age, and birth order of the child. DTP vaccination was associated with increased survival (hazard ratio = 0.76, 95% CI 0.67- 0.88; p= 0.001) in model evaluating mortality between 6 weeks and 9 months of age. Measles vaccination was also associated with increased survival when data after late immunization with DTP and bacille calmette guerin (BCG) were excluded. BCG vaccination was associated with reduced survival however, children vaccinated with BCG during the first 6 months of life had significantly lower risk of death than those vaccinated later (hazard ratio=0.59; 95 % CI 0.47-0.73; p = 0.0001). Population based health surveillance systems are not always fully appreciated. The findings showed the added value of maintaining comprehensive, scientifically vigorous demographic surveillance systems like that in Matlab. In addition to their usefulness in targeted research projects, there is inestimable value for addressing critical, unanticipated questions when they arise, such as the circumstances that led to this study.

**032. Broek JMVD; Roy SK; Khan WA; Ara G; Chakraborty B; Islam S; Banu B. Risk factors for mortality due to shigellosis: a case-control study among severely-malnourished children in Bangladesh. *J Health Popul Nutr*. 2005; 23(3): 259-265.**

This research objective was to identify the risk factors for death of severely malnourished Bangladeshi children with shigellosis. A case control study was conducted at the Clinical Research and Service Centre of ICDDR,B in Dhaka Bangladesh. One hundred severely malnourished children with a persistent stool culture for shigella dysentery type 1 or 5. Flexneri, who died during conscious lactation were compared with another 100 similar children (weight for age <60% and with 5. dysenteriae type 1 or 5. Flexneri associated infection) discharged alive children aged less than four years were admitted during December 1993-January 1999. The presence of bronchopneumonia, clinical sepsis, dehycha and a low or imperceptible pulse volume led to an unconscious risk of death by 2.8, 4.6, 3.1, and 3.9 folds respectively. The highest OR in univariate analysis was found for imperceptible pulse or a pulse rate of <90 per minute (OR=10.5). In multivariate regression analysis, altered consciousness (odds ratio 2.6, 95%, confidence interval 1.0-6.8), hypoglycaemia (blood glucose <3 mmol/L (OR= 78, 95%, CL 2.9-19.6) hypothermia (temperature <36degree C) as significant risk factors for mortality. Based on the findings of the study recommended that early diagnosis of shigellosis in severely malnourished children and associative therapy for proper management to prevent management to prevent development of hypothermia hypoglycaemia, bronchopneusia or altered consciousness and its immediate treatment are likely to reduce shigella related mortality in severely malnourished children.

**033. Caldwell B; Barkat-e-Khuda. The First generation to control family size: a microstudy of the causes of fertility decline in a rural area of Bangladesh. *Studies in Family Planning*. 2000; 31(3): 239-251.**

This study was undertaken to understand the condition that produced an increase in the practice of family planning in a rural area of Bangladesh. For this study, qualitative interview were conducted with 67 women concerning the factors influenced their reproductive behavior. The most striking feature of the respondents' comments was that the great majority, including many who had not practiced it, described family planning as being in the best interests of their families and of the country. A few women said that little or no benefit could be gained from contraceptive use. A small number said that they were economically better off as a result of having had a large family. Thirty-nine of 67 respondents interviewed were practicing family planning. Most used the pill; the rest used injectables and tubal ligation. Forty-eight women were Muslims and 19 were Hindus. Hindu respondents were more likely than Muslim ones to practice family planning. They were also more likely to use a permanent method. The respondents with the most education had completed seven years of schooling. All the women listed their occupation as housewife. The feeling that family planning is morally unacceptable, most clearly indicated in the responses "religious prohibitions" and husband objects" is of interest in its implications for the long-term acceptance of family planning. Interviews with a number of the nonusers showed clearly that they held string views on the "sinfulness" of practicing family planning which challenges the will of God, who ultimately decides whether and when couples will have children. They felt that a person should take the children he or she is given, and trust that God will provide sixteen respondents (Muslim, age 48, non-user) stated this viewpoint strongly. Forty-seven percent (Muslim, aged 40, nonuser) remarked that she was unable to say whether people were using or not in using contraceptives, because whatever God has in store for the people will happened one way or other way. People who use contraceptives will conceive either by accident or when they stop using contraceptives. An equivalent view was expressed by respondents 66 (Muslim, aged 47, nonuser) who said she asked for forgiveness whenever she requested God not to give her any more children. Among the most obvious constraints to family planning in the past was that viable and effective methods were not easily available. The few respondents who did not accept family planning or did not regard it as important for their family's welfare gave less emphasis to the things that they had to do without as a result of their having large families. The findings suggested that the family planning program has played an important role in reducing family size. Especially the growing aspirations have combined with changing in the nature of family decisions making to make couples more receptive to the idea of family planning.

**034. Caldwell B; Barkat-e-Khuda; Ahmed S; Nessa F; Hqaque I. Pregnancy termination in a rural sub district of Bangladesh: a microstudy. *International Family Planning Perspectives*. 1999; 25(1): 34-37 & 43.**

The objectives of the study were to know about the circumstances of leading to pregnancy termination, about how a provider was chosen and about the physical, economic and social consequences of termination. Forty-one married women in the sample registration system database who were identified as having had a pregnancy termination between 1990 and 1995 were asked detailed questions about the reasons for their termination, the decision-making process the means and consequences of termination. The study revealed that four in the respondents said they had terminated their pregnancy because they wanted no more children

or wanted to delay their next birth, these respondents generally cited the economic well-being of their family almost six in 10 had used a trained provider, the remainder had relied on untrained provider or had induced their own abortion those who used untrained providers cited familiarity confidentiality and proximity as reasons. The thought concerned about safety. Only five of the women had been practicing contraception at the time they became pregnant. Those who had not been using a method often cited side effects (either experienced or anticipated) as a reason for nonuse. Better education about and management of contraceptive side effects would help to reduce pregnancy termination in rural Bangladesh. In addition women need more information about possible health consequences of relying on untrained providers for pregnancy termination.

**035. Caldwell JC; Barkat-e-Khuda; Caldwell B;Pieris I;Caldwell P. Bangladesh fertility decline: an interpretation. *Population and Development Review*. 1999;25(1):67-84.**

The objective of this article was to investigate whether the experimental conditions were sufficiently good to warrant the findings. The study was referred to Bangladesh statistical information, but the main instrument was from a joint research program on fertility decline undertaken by the Population Extension Project of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) and the Australian National University. This article will focus on 1997 field work rather than on the 1995-96 phase of the study based on documents and selective interviews, which traced the historical roots of the family planning program and documented changes over time in the ideas and ideologies of the national elites. The 1975 Bangladesh fertility survey confirmed that fertility was high and possibly stationary in 1971-74, but the 1989 BFS appeared to show that fertility had subsequently fallen by almost 20% and each survey in the 1990s has reported successively lower fertility and higher contraceptive use rates. The decline may now being slow, as indicated by two successive Demographic and Health Survey that showed the total fertility rate dropping only from 3.4 to 3.3 from the period 1991-93 to 1994-96. The currently married women aged 10-49 years practicing family planning rose in the interval by 10% for all contraceptive methods and by 15 percent for modern methods so that by 1994-96, 50% of all married couples were practicing birth control (BDHS 1997:7-9). When it makes a strong statement, the World Bank study often qualifies that statement. But the central argument remains that there has been a little causative socio-economic or demographic change in recent times, hence the fertility decline must be explained almost entirely in terms of the activities of the national family planning program. Specifically, infant and child mortality had not fallen in the two decades before the onset of fertility decline although it did fall later, nor was there any perception of a decline; per capita income has risen slowly since 1971; landlessness has, in fact increased since 1960; School enrolments have not increased greatly in the last 20 years. Almost any index reveals the same story. Between 1976 and 1986 the number of electrified villages quadrupled; the number of doctors multiplied threefold and nurses fivefold. Between 1980 and 1986 the number of tube-well rose by 53 percent and the rise has since been steeper. Government and NGO programs have flourished in the fields other than family planning and have interacted with the family planning effort. The contraceptive prevalence rates over the last three decades in Bangladesh have been extraordinary. But what has happened in other sectors of the society and economy is also far more extensive than the World Bank report conceded. The activities of the family planning program to have been important, probably in the timing of the onset of fertility decline and certainly in the pace of that decline. But strong doubt whether a total



fertility rate little above three would have been reached had the society of the early 1970s remained largely unchanged. It was a society that offered fewer opportunities and demanded fewer economic decisions from parents.

**036. Chowdhury ME; Akhter HH; Chongsuvivatwong V; Geator AF. Neonatal mortality in rural Bangladesh: an exploratory study. *J Health Popul Nutr.* 2005; 23(1): 16-24.**

This prospective study was undertaken to examine the variability of early and late neonatal deaths with sociodemography and reproductive characteristics of mothers, their delivery complications, and use of health services. About 1,019 pregnant women were followed up in eight randomly selected rural areas of the country. Trained female interviewers visited the households of the sub-shets at four week intervals to record neonatal deaths (within 28 days after birth). For each death, they administered a structured verbal autopsy questionnaire to the mother and or a close family member. Based on these field data, three neonatologists arrived at a consensus to assign two causes of death on originating cause and a direct cause. The study took place from October 1992 to September 1993. The results of the study revealed that the neonatal mortality rate was 53.3 per 1,000 live births. The originating causes of death were pre-maturity/low birth weight (30%), difficult labour (16%), unhygienic birth practices (16%), others (41%), and unknown (34%). The direct causes were spesific (32%), asphyxias (26%), tetanus (15%), respiratory distress (6%), others (6%) and unknown (14%). The findings of the stuidy suggested that low cost proven intervention covering improved maternal obstetric and newborn care should be delivered through the framework of ongoing safe motherhood and child healthcare programmes. The community also should be motivated for seeking timely and proper care for mothers and newborns and implementation of these intervention programs for lowering neonatal mortality is urgently needed in Bangladesh.

**037. Dhar B; Mowlah G; Nahar S; Islam N. Birth-weight status of newborns and its relationship with other anthropometric parameters in a public maternity hospital in Dhaka, Bangladesh. *J Health Popul Nutr.* 2002; 20(1): 36-41.**

According to he World Health Organization, birth-weight of less than 2,500 gm is considered low birth-weight since below this value birth-specific infant mortality begins to rise rapidly. In Bangladesh, the prevalence of low birth-weight is unacceptably high. To screen low-birth-weight babies, simple anthropometric parameters can be used in rural areas where 80-90% of deliveries take place. A sample of 316 newborn singleton babies was studied in a government maternity hospital in Dhaka city o examine the birth-weight status of newborns and to identity the relationship between birth-weight and other anthropometric parameters of newborns. The mean birth-weight was 2,889  $\pm$ 468 g, and 15.18% were low-birth-weight (<2,500 g) babies. All key anthropometric parameters of the newborns significantly correlated with one another ( $p < 0.001$ ). The best cut-offs for detecting low-birth-weight and normal-weight babies were <10 cm (oddsratio= 17.4), <30.5 cm (oddsratio= 25.0) and <33 cm (odds ratio=19.4), respectively, for mid-upper arm circumference (MUAC), chest circumference, and head circumference. The sensitivity and specificity were best for chest circumference (83.3% and 83.6% respectively). At lower cut-off points of <9cm, <29.5 cm, and <32 cm, respectively, for MUAC, chest circumference, and head circumference, high-risk babies could be identified with a minimum number of false-positive cases. Chest circumference was he best detector of birth-weight with a correlation-coefficient of just above 0.84, followed by MUAC with a correlation-coefficient of just below 0.84. Based on the findings of the study, it is

recommended to use <29.5 and 29.5 to <30.5 cm for chest circumference to identify high-risk and at high-risk newborns respectively.

**038. Gani S; Ahmed SM. Growing up and reproducing: knowledge and practices of young people in Bangladesh. Dhaka: BRAC, 2006.**

Abst: This study carried out by BRAC attempts to fill in the knowledge gaps by collecting data from a nationally representative sample on different aspects of adolescent and youth lives including socio demography and economy, education health including reproductive health and sexuality, life-style, social capital, time use and work, and gender and role model. The data were collected employing a two stage sampling procedure in 2005. A total of 361 primary sampling unit or clusters were used, 277 in rural areas and 84 in urban areas using two types of questionnaires: the household and the individual adolescent questionnaire. The results of the study are that almost 60% of the population was below 25 years of age and less than 6% of the population was aged 60 years or older. The urban population showed greater literacy level (63% vs 46%). The rural population married early (57%) compared to their urban counterparts (53%). Adolescents (10-19) were more knowledgeable about visible physical characteristics such as increase in height and weight and appearance of beard and moustache (males more than females), but not such characteristics as increase in breast size. Above 80% of the respondents reported that they had already started menstruation or experienced nocturnal emission. Around 67% of them were aware about emotional changes occurring during this period of adolescence, males significantly more than the females. The prevalence of marriage, increased with age, especially in case of females. In youth (20-24) around 69% of the females married in contrast to only 30% among the males. First marriage at 18 years was mostly reported for the females (70% vs 3%). At least one modern family planning method was known to almost all respondents and at least one traditional method was known to 23% of them. Overall 18% of them were using at least one method, with 17% a modern method and only one percent a TM (traditional method). Pill was the most used method among the respondents (12%). Data showed that in early two third of the even married young females had already begun childbearing at 19 years or below with a median age of 17 years. The government hospital, health centres and clinics were identified as the most reliable antenatal check-up by the study population (91.3%). About 78% of the respondent received two or more TT injections during her first pregnancy while another 12% received one injection. It is recommended that extra attention needs to be given to improve the situation identifying specific areas and interventions should be informed by this knowledge and designed according to their felt (and un-felt) needs.

**039. Haider SJ; Ferdous S; Chowdhury SS; Rahman H. Identify effective ways to address poor less educated and slum population for reducing fertility. Dhaka: NIPORT, 2006.**

This study was carried out to identify effective ways to address poor, less educated and slum population for reducing fertility. Data for the study were collected applying both qualitative and quantitative methods of investigations. A total of eight districts, two from Dhaka and Rajshahi divisions each and one district each from the remaining divisions were selected for the study. The study revealed that the mean monthly family income of the sample population is Tk 6000 or below and mean age of the respondents for female is 27 years, while for males, it is 34 years. Among the poor population, knowledge of oral pills, condoms and injections prevail at 54% to 90%. Less than half (47%) of the rural poor females and slightly more than

half (56%) of the females in the urban slums are aware of ligution and barely one third of the males are aware of female sterilization. The current prevalence rate of contraceptive practice for the rural poor is 58% and for urban slum population, it is 63% and for both rural and urban, it is 59.4% CPR of oral pills is the highest (27.4%), followed by injection (10.3), Ligitation (5.2%) and condom 4.2%). On current use of contraceptives, Rajshahi (71%) reported the highest level of practice, followed by Khulna (65%), Dhaka (62%) Barisal (55%), Chittagong (49%) and Sylhet (26%) in thist order. Slightly over half of the field workers (52%), FWVs (56%) and Doctors and Program managers currently use of family planning methods. About 48% of the field workers, 44% of the FWVs and 41% Doctors and program managers, who serve the poor and less educated people did not themselves use any methods of family planning. More than half of the FWVs (58%) doctors and PMs (51%) and over one third of Field workers (38%) specified low literacy level of the poor clients on the most important reason causing low acceptance of family planning methods. Some community leaders perceived acceptance of the permanent methods of family planning as against religion and they thought the method is costly. Some opined that permanent methods of family planning inflict more side effects. Some other agree that though influences of superstitions and rumours are currently declining, even then people prefer temporary or long acting methods over permanent methods. The study recommends that for strengthening of family planning services among the poor population improvement of service quality, strong organization management, intensification of media interventions, non programatic interventions and improved contraceptive technology should be assured immediately.

**040. Hashima-e-Nasreen. Neonatal death: any role for development interventions? : a pilot study. Dhaka: BRAC, Research and Evaluation Division, 2001.**

The study was conducted to identify certain determinants of neonatal death. This study was conducted in Matlab. The study used the qualitative research method. Data were collected form one village of ICDDR,B non-intervention area. Case study was used as a tool for data collection. Subject for the study were mentioned of cases and control cases were neonates born during the year 1999-2000 and who died within 28 days. Controls were live children born during the same period and taken form the nearest door. Six cases and six contols were selected randomly form the DSS registers. The study findings revealed that all mothers of living neonants did do the regular antenatal check up direct or indirect way and followed doctor's advice during antenatal check-up. The BRAC members have done the direct antenatal check-up rate denotes they are aware about antenatal check up and receive it form SC and BRAC's nutrition program. While no mother of dead neonants did except the one. Almost all dead neonates were small for date and premature whereas the living neonates were healthy. According to mothers, maternal nutrition is important in order to get adequate foetal growth and to prevent LBW, premature labour, and small for date. Both awareness and practices are necessary in this regard. Mothers of dead neonates have emotional stress during their pregnancy compared to live neonates who did not have any. Majority of mothers have found that neonatal death might be a consequence of domestic violence and/or emotional stress through an intermediate indicator IC maternal nutrition. BRAC members spoke about decreased emotional stress and improved relations with their husbands as their economic condition improved. Mothers initiated a positive association between congenial anomaly and neonatal death. To address whether or not BRAC's interventions have any influence the study may, therefore, be performed in both BRAC and non-BRAC area and in all 4 study areas.

**041. Hosegood V; Cambell OMR. Body mass index, height, weight, arm circumference and mortality in rural Bangladeshi women: a 19-Y longitudinal study<sup>1-3</sup>. *Am J Clinical Nutr.* 2003; 77: 341- 47.**

The aim of the study was to scrutinize the association between BMI and mortality in Bangladeshi women. Almost of 1888 rural Bangladeshi women (Mean age: 27.9 years) was followed over lay. Height, weight, arm circumference, fertility and socio-economic data were obtained between 1975 and 1979. Mortality, loss- to- follow-up, and additional socio economic data were identified by the Demographic Surveillance System of the ICDDR,B: Centre for Health and Population Research, Bangladesh. Proportional hazards regression was used to examine the relation between BMI and all causes of mortality. The study showed that the association between BMI and mortality was reverse J-shaped. After adjustment for socio economic indicators, the risk of dying was the highest in women with BMIs in the lowest 10 % of the decile distribution (<16.39) and lowest in women with intermediate (11- 89 %) range of the decile distribution) BMIs (16.39 – 20.71). Women with BMIs in the highest 10 % of the distribution (< 20.71) had slightly elevated mortality (NS) compared with those with intermediate BMIs. Helath education was strongly associated with mortality. Women without schooling had a risk of mortality 4 times that of women with < 1 y of schooling. To conclude a woman's BMI relative to the BMI distribution in the local population may be a better predictor of mortality than is absolute BMI. The contribution of education in reducing mortality supports development programs aimed at increasing women's education.

**042. Howlader AA; Bhuiyan MU. Mothers' health-seeking behaviour and infant and child mortality in Bangladesh. *Asia-Pacific Population Journal.* 1999; 14(1): 59-75.**

The study was carried out to investigate the level of health-seeking behaviour of mothers and to assess how their health-seeking behaviour was affecting infant and child mortality in Bangladesh. This study also attempted to identify important factors that affect mothers' health-seeking behaviour. The aim was to enable the findings to be put to use in helping policy makers in planning appropriate strategies to improve the health of this highly vulnerable population group. For the study, maternity history of data obtained in the 1996/97 BDHS were utilized. The unit of analysis was children born 1-15 years preceding the survey. Children who had experienced at least one year of exposure of the risk of dying were taken as the unit of analysis. Direct estimates of the probabilities of infant and child mortality were calculated for each category of independent variables and logistic regression analysis was also carried out. Neonatal and infant mortality rates were found to be higher for male than female children but the child mortality rate was higher for female than male children. The analysis also indicates that survival status was lower for first order births, with survival status increasing for second and third order births. The important findings that emerge from this analysis showed the importance of the mothers' education, age at birth and birth interval, all of which were strongly correlated with neonatal and infant mortality. The increased prospects of literate mothers for seeking medical care for their own and their children, it is likely to do so with greater timeliness. The utilization of maternal and child health care services, such as antenatal care and postnatal care during pregnancy and after the delivery of the child were found to have lowered infant and child mortality rates. These observations suggested a need for further research and re-evaluation of the available evidence gained from engaging in policy advocacy.

**043. Howlader AA; Kabir M; Bhuiyan MMU. Health-seeking behaviour of mothers and factors affecting infant and child mortality. *Demography India*. 1999; 28(2): 225-238.**

The main objective of this paper was to examine how health-seeking behaviour of mothers were affecting infant and child mortality and to determine important variables that affect mother's health-seeking behaviour in Bangladesh context. The unit of analysis was children born from one to fifteen years prior to the survey. A total of 9640 ever-married women were successfully interviewed from the selected households of the 1991 census and BDHS sample. The women's questionnaire was used to collect information from ever-married women aged 10-49. To investigate the health seeking behaviour of mothers and infant and child mortality of their children univariate and bi-variate and multivariate analyses were employed. The logistic regression coefficients suggested that a number of variables had influence on the survival status of the neonatal mortality. Education of the mother was an important determinant of child survival. Place of residence also affected neonatal mortality. If the preceding birth interval was higher than it showed lower risk of death. Mothers whose children born with a birth interval of 18 months and above the risk of dying of their children was 89 times lower compared to reference category. The results showed that the risk of dying for neonatal and infants was higher if children were born to mothers below age 20 years. There was a strong association between the survival status of the preceding child and the components of under-five mortality. The logistic regression analysis demonstrated that among potentially strong predictors of the components of under-five mortality were education, age of the mothers at birth, sex of the child, immunization status of the child, birth order, birth interval, delivery place, antenatal care and survival status of the previous child. The logistic regression analysis suggested that first-born children and children whose mothers were over age 40 were at a particularly high risk of mortality. Similarly mothers with first order births were generally very young and their children also had high-risk mortality than mothers who were over age 20.

**044. Hurt LS; Ronsmans C; Campbell OMR; Saha S; Kenward M; Quiglyby M. Long-term effects of reproductive history on all-causes mortality among adults in rural Bangladesh. *Studies in Family Planning*. 2004; 35(3): 189-196.**

The aim of this study is to examine the association between reproductive history and all cause mortality after age 45 among women and their husbands in a rural area of Bangladesh. This historical old study was conducted in Matlab, a rural area south east of Dhaka, the capital. Used data were collected between 1982 and 1998 by the ICDDR,B withing a unique Health and Demographic Surveillance System (HDSS). The HDSS provides longitudinal data on all births, deaths, marriages and migrations since 1966; 142 villages and approximately 200,000 individuals are currently under surveillance. The results of the study confirm that controlling for potential confounded did not alter thus conclusions, as shown in the table. The relationship between parity and mortality in women was slightly unshaped, with mortality after age 45 found to be highest in women with the smallest families and lowest among those of parity six to 11. Differences were consistent with random variation. However, among men, adjusting for potential confounders did not alter the significant decline in mortality with number of live births (adjusted RR per live birth 0.97; CI: 0.96-0.96, the P-value for the world tests for trend is 0.03). The conclusion did not differ when data were examined by gravity instead of parity, and no statistically significant interactions were found or either sex with age, time period, marital status, or socio-economic status (not shown). No association was found between parity and mortality among women, but a small decrease in men's mortality was found to be

associated with their wives parity. Survival for both sexes was greatly enhanced by an increasing number of surviving children, regardless of parity or other social factors.

**045. Hussain F; Bhuiyan AB; Haque YA; Flora MS. Verbal autopsy for maternal death. *BMRC Bulletin*, 2002; 28(1): 45-53.**

The objectives of the study were to ascertain the magnitude of mortality, identifying their clinical causes with socio-economic and demographic correlates, care seeking behavior of women and the rate and patterns of prenatal and neonatal mortality. Descriptive cross sectional study was conducted in Gopalganj district covering 5 Thanas, 71 unions and 592 villages from September 1997 to August 1998. A total of 205 in maternal death occurring from 1994 to 1997 were investigated by verbal autopsy. The findings showed that teenager mothers had more deaths in first pregnancy. Maternal deaths increased with gravidity above 30 years, Haemorrhage and eclampsia were common causes of death. Eclampsia was prominent in primigravids <20 years while haemorrhage occurred more in multi-gravidas between 25-35 years of age ( $p=0.029$  for age,  $p=0.001$  for gravidity). Nearly 64% of maternal deaths occurred in postpartum period. Among live births, 45.6% babies died before their first birth day. In this study only 21.5% patients sought antenatal care and there was skilled attendance at delivery in 24% cases only. The findings supported the need of increasing the age of marriage and first childbirth, through strengthened family planning programme and ensuring skilled birth attendance during delivery. It also stresses need for communication on danger signs of pregnancy and childbirth

**046. ICDDR,B. Health and demographic surveillance system- Matlab: registration of health and demographic events 2002. Dhaka: ICDDR,B, 2004. (Scientific report; no. 91)**

The aim of this study was to find out the information about the vital registration and maternal and child health situation from Matlab, Chandpur Distric, Bangladesh in 2002. The data were collected by the health and dmographic surveillance system of ICDDR,B: Centre for Health and Population Research. The study identifies that in the surveillance area, as a whole fertility decreased in 2002 compared to 2001. The crude birth rate (CBR) was 25.6 per 1000 population and the total fertility rate (TFR) was 3.0 births per women in the ICDDR,B were when as CBR and TFR were 25.3 and 3.2 respectively in the govt. area. The crude birth rate was 6.9 per 1000 population in the ICDDR,B area while in the government area it was 7.3. In the ICDDR,B area infant mortality was 47.9 per 1000 live births and in the government area it was 54.5. The mortality rate among children aged less than 5 years, in the ICDDR,B area was 61.1 per 1000 live births and in the government area it was 73.6. The rate of immigration increased to 45.7 per 1000 population in 2002 from 34.0 in 2001, and the rate of out migration also increased to 52.4 per 1000 in 2002 from 46.2 in 2001. The net out migration rate was 6.7 per 1000 population, thereby offsetting the rate of natural increase, which amounted to 18.5 per 1000 in 2002. The overall annual population growth rate was 1.2%. The marriage rate was 15.0 per 1000 population and the divorce rate was 124.2 per 1000 marriages. It is recommended that modern medical facilities, proper education and knowledge about family planning and child care should be increased to improve the present situation.

**047. ICDDR,B. Health and demographic surveillance system-Matlab: registration of health and demographic events 2003-volume thirty-six. Dhaka: ICDDR,B ,2005.**

This study was carried out in order to find out the vital registration and maternal and child health deata from Matlab, Chandpur, Bangladesh in 2003. The data were collected by the

health and demographic surveillance system of ICDDR,B: Centre for Health and Population Research. The surveillance area was divided into a ICDDR,B service area and in the government service area. Government area receives govt. services and ICDDR,B area receives only ICDDR,B services. The findings showed that in the surveillance area, as a whole, fertility remained the same in 2003 compared to 2002. The total fertility rate (TFR) was 3.1 per women and the crude birth rate (CBR) was 25.7 per 1000 population. In the ICDDR,B area, CBR was 26.4 and TFR was 3.1 and in the government area, CBR and TFR were 25.1 and 3.2 respectively. The crude death rate was 6.8 per 1000 population in the ICDDR,B area while in the government area it was decreased to 7.0 in 2003 compared to 7.3 in 2002. The infant mortality rate was 42.1 per 1000 live births in the ICDDR,B area and in the government area it was 47.5. The mortality rate among children aged less than 5 years has decreased in both the areas; in the ICDDR,B area it has decreased to 55.2 per 1000 livebirths in 2003 from 61.1 per 1000 live births in 2002 and in government area it was 62.9 in 2003 down from to 73.6 in 2002. The rate of in migration decreased to 40.4 per 1000 population in 2003 from 45.7 in 2002, and the rate of out migration rate was 15.0 per 1000 population, thereby offsetting the rate of natural increased which amounted to 18.8 per 1000 in 2003. The overall annual population growth rate was 0.4%. The marriage rate was 14.1 per 1000 population and the divorce rate was 101.1 per 1000 marriages. The study recommends further studies to improve the prevailing situation in the above discussed areas.

**048. ICDDR,B. Health and demographic surveillance system-Matlab: registration of health and demographic events 2004. Dhaka: ICDDR,B, 2006. (Scientific report; no. 93)**

The goals of this study were to drawout a picture on health and demographic surveillance system of Matlab, Chandpur district. The data were collected by the Health and Demographic Surveillance System of ICDDR,B. Centre for health and Population Research. The surveillance area was divided into an ICDDR,B area and a Governmetn service area. The study found that in the serveillance area, as a whole, fertility declined very little in 2004 compared to 2003. The crude birth rate (CBR) with 24.7 per 1000 population and total fertility rate was 3.00 per women in 2004. In the ICDDR,B area CBR was 24.5 and TFR was 2.9 and in the government servcie area CBR and TFR were 24.8 and 3.1 respectively. The crude death rate was 6.7 per 1000 population in ICDDR,B area while in Government service area it increased to 7.4 in 2004 compared to 7.0 in 2003. The infant mortality rate was 39.1 per 1000 live births in ICDDR,B area, and in the Government service area it was 48.5. The neonatal mortality fell in ICDDR,B area and rose in Government service area, whereas post neonatal mortality fell in both the areas. The mortality rate among children aged less than 5 years has decreased in both the areas. The rate of in migration increased to 42.1 per 1000 population in 2004 from 40.4 in 2003, and the rate of out migration increased to 57.9 per 1000 in 2004 from 55.4 in 2003. The net out migration rate was 15.8 per 1000 population, thereby offsetting the rate of natural increase which amounted to 17.6 per 1000 population in 2004. The overall annual population growth rate was 0.2%. The marriage rate was 13.4 per 1000 population and the divorce rate was 95.0 per 1000 marriages. The study recommended that more careful studies are required regarding the subject to make the programme a successful one.

**049. Islam MA; Chakraborty N; Khan JA. Program performances in areas served by government and non-government organizations. In: BHDS 1996-97 special analysis. Dhaka: NIPORT/Measure DHS+. 2000:1-37**

The study intended to investigate the differentials in program in areas served by GOB and

NGOs to highlight the extent of differentials pattern of impact of services on demographic, health, and family planning performances. For assessing the overall demographic situation and to assist in evaluations of health and population programs in Bangladesh, BDHS 1996-97 used the integrated multipurpose masters sample (MPMS) design employing a two stage sampling procedures for collecting data from a total of 313 primary sampling units consisting of 29 in Metropolitan areas, 42 in Municipalities, and 242 in rural areas during the period of November 1996 to March 1997. A total of 9,099 households and 9,127 ever-married women were interviewed in the survey. Also an additional survey was conducted in December 1997 for assessing program performances. Officially collection of information on NGO activities, checklist and questionnaire were also used for data collection tools. This study revealed that some important findings concerning the differentials present in the level of performance in fertility, infant and child mortality, family planning, maternal and child health and coverage of childhood vaccinations by types of workers were seen. Those showed that among the total population, 72% served by GOB workers, while 12% by NGOs workers and remaining 16% obtain services from the both. Significant difference was observed in performing services by NGOs and GOB in between urban and rural areas. It was noticed that most of the NGOs activities are still urban based, but the success of NGO activities is more pronounced in rural areas. Although there was no substantial difference in the level of TRF in urban areas, but in somewhat lower in rural NGO areas compared to rural GOB and shared areas. Also there was no substantial variation in the fertility pattern among women under the age of 20 by types of workers. It was observed that visit of FP workers played a vital role in increasing the likelihood of using the methods of contraception. It was appeared from the bi-variate analysis of NGO workers have relatively more contracts with their clients and more frequency of visits than GOB workers. Study confirmed that socio-economic status was associated positively with use of contraception. However, this study presents the descriptive measures by areas covered by different types of workers in order to provide a cautious exposition of the differentials that exist in GOB, NGO and shared areas. These findings would provide much useful guidelines for redesigning the health and population sector programs as well as for redefining the job description of the field. Thus study recommended integrating the family planning programs with other income generating activities of women should seriously be considered and more efforts should be given by NGO and GOB to achieve the target in health, demographic and other related sectors.

**050. Islam MM; Chakraborty N; Rob U. Regional variations in fertility in Bangladesh. In: *Fertility transition in Bangladesh: evidence and implications*/edited by Rob U et al. Dhaka: UNFPA Bangladesh, 2004.**

This article examines the fertility change in Bangladesh from a regional perspective and identifies the important factors responsible for low or high levels of fertility in different regions. The specific objectives are: i) to identify the factors affecting the fertility in different regions; ii) to examine the role of the proximate determinants of fertility in explaining regional variation in fertility; and iii) to examine the role of the family planning program in explaining regional variation in fertility. The study data were extracted through analysis of the available statistics from several sources such as demographic and health surveys (BDHS) conducted during 1989-2000. The BDHS gather information on respondent's socio-economic and demographic characteristics, reproductive history, breastfeeding practices, and marriage and fertility preferences from a nationally representative sample of ever-married women of reproductive age. A systematic analysis of Bongaarts proximate determinants framework was



used to examine the fertility pattern. The findings of the study showed that the magnitude of decline was highest in Khulna (17.4%) followed by Rajshahi (8.3%). The analysis of the proximate determinants revealed that contraception is the main factor determining the level of fertility across the regions followed by postpartum infecundity and marriage pattern. However, the effects of contraception are highest in Khulna and Rajshahi. The results indicate that the age at marriage is the lowest in Khulna and Rajshahi. Along with a low age at marriage and low age at first birth, the total fertility rate in Khulna and Rajshahi appears to be low due to increased use of contraception in these two regions. Women in Khulna are likely to favor a two-child family compared to other region. The analysis of supply side factors for contraceptive services indicates that the availability and utilization of the family planning outreach services are better in Khulna and Rajshahi than in other high fertility region as indicated by higher coverage and visits to satellite clinics and a higher percentage of visits by field workers. Unmet need is low in Khulna and Rajshahi, and all the high fertility regions have higher levels of unmet need. The percentage of total potential demand satisfied are higher in the low fertility region Khulna and Rajshahi and low in high fertility regions. The high continuation rate in the high fertility region is a major concern for the family planning programs, and unless it is reduced any effort of increasing contraceptive practice will not be effective for further reduction in fertility.

**051. Kabir M; Huq SS. Family size preferences in Bangladesh: a temporal analysis. *The Journal of Family Welfare*. 1999; 45(2): 57-65.**

The purpose of this paper was to examine preference for desired family size and to identify the factors likely to affect desired fertility in rural Bangladesh. The study was intended to indicate whether certain common patterns of sex preference were prevalent and the factors that influence contraceptive use. The data for the study was obtained from various surveys conducted over the last decade. This study was conducted by logistic regression analysis. The findings of the study indicate that the desire for future children was more evident among those who were younger and uneducated. Women, who want to achieve a particular sex composition, might exceed the desired family size. Similarly, the number of living children was an important factor affecting desire for children in the future. The analysis indicated that there was a desire for at least one daughter with two living sons. Both the attitudinal index and sex preference index for contraceptive use demonstrated that there was no strong evidence for son preference. Their preference was clearly to further fertility decline. Further improvements in the quality of family planning services could do much to translate favourable attitudes into fertility regulating behaviour. This paper recommended that the factors which hinder women's welfare were also those influence their fertility. Thus the access to contraceptives and increased participation of women in the labour force would help reduce fertility in Bangladesh.

**052. Khat M; Ronsmans C. Deaths attributable to childbearing in Matlab, Bangladesh: indirect causes of maternal mortality questioned. *American Journal of Epidemiology*. 2000; 151(3): 300-306.**

This study aims at shedding light on the contribution of indirect obstetric causes to maternal mortality by analysing the problem from an epidemiologic perspective. For this study, the data was used population based data from Matlab, Bangladesh, for the period 1976-1993. Data on women years of exposure, live births, and deaths from all causes by 5 years age groups were obtained from the demographic surveillance system and the death rates were compared

using exact confidence intervals for the rate ratio and approximate confidence intervals for the rate difference. The time spent during pregnancy and the perspicem was considreed a transitory exposure period in women's lives, and death rates were calculated for women aged 15-44 years, while exposed and while not exposed. The study results also indicated that during or shortly after pregnancy, death rates from all causes care more then twice as high as outside this period. Once direct obstetic causes and injuries are excluded, the death raters among women while exposed are substaintially lower than the death rates among women while not exposed. Several inter pretations of this findings are discassed, particulars of this findings are discussed, particularly the role of selective factors. It also confirms the complexity of the concept of indirect causes of maternal mortality and clearly illustrated the inherent difficulties in estimating the excess risk of death attached to pregnancy and purpaerium. The findings of the study indicated that population with a specific epidemiologic profile. This work suggesteal to better understand the relation between pregnancy and disease, researchers might extend this type of approach to other population where believing the diseases either to reduce fecundability or to be aggravated by the pregnancy are highly prevalent.

**053. Kusiako T; Ramesh C; Paal LVD. Perinatal mortality attributable to complications of child birth in Matlab, Bangladesh. *Bulletin of the WHO*. 2000; 78(5): 621-627.**

This population based study of perinatal mortality was conducted to examine the role of intrapartum risk factors in developing countries like Bangladesh. The study was conducted in Matlab, a rural area in Bangladesh that has been under continuous demographic surveillance since 1996. Major demographic factors such births, deaths and marriage are recorded during monthly home visits by community health workers and the completeness reporting is high. The study covered all the women who were seen by a mid wife antenatally and during child birth between 1987 and 1993. women whose pregnancy had lasted for less than 28 completed weeks were excluded. Data were analysed using status 5 software. The population attriabies included in the final model. The study revealed between 1987 and 1993, 10464 ( 61.6 %) of the 17000 pregnant women residing in the area covered by the maternity care programme had been in contact with a midwife during the antenatal period or during labour or both There was no difference in the perinatal mortality rates between those was had been in touch with program and those who had not ( perinatal mortality : 60.2 and 58,3 per 1000, respectively or= 1.03: (95% of CI = 1.18) Ecalsia and pre-celamapsia were associated with very high perinatal mortality rates ( 323 and 152 per 1000 respectively) as were breech presentation (375), prolonged labor ( 181) multiple pregnancy (215) and intrapartum care (!03). Whome without any of the above childbirth complkications had a perinatal mortality rate of 48 per1000. Pre-maturity alone accounts for 29% perinatal deaths, followed by bad obstetric history (15%), prolonged labor (13%) and breech presentation (13%). All other factors accounted for fewer than 7 % of deaths. Women with of the six antenatal markers had two fold increased risk of peri-natal death, accounting for 26% of perinatal mortality. During the complications period of labor and delivery, the beast common (12%), increased the risk fivefold and accounted for 30% of prenatal deaths. Efforts to improve the training of midwives in labor management and care of neonates, supported by effective referral mechanisms, will contribute to substantial reductions in perinatal mortality.

**054. Menken J; Duffy L; Khan R. Childbearing and women's survival: new evidence from rural Bangladesh. *Population and Development Review*. 2003; 29(3): 405-426.**

Effects of childbearing on women's mortality and the implications of family planning programme is reducing these effects were examined in a 20-year prospective study of more than 2,000 women in Matlab, Chandpur, Bangladesh. Maternal mortality is defined as a death occurring in the sex workers after childbirth. But childbearing may affect women's survival beyond this brief period. Additional hypotheses considered relate to 1) cumulative exposure to childbearing, whether measured by parity or pace of childbearing, 2) age at first birth, and 3) effects beyond the reproductive ages. The results offer no support to cumulative exposure hypotheses, showing no link between parity or pace of childbearing and mortality risk. Instead, the study identified an extended period of heightened mortality risk associated with each birth – the year of the birth and the two subsequent years. Family planning programmes, by reducing the number of children and therefore a woman's exposure to extended maternal mortality risk, potentially increase survival. Research was needed to identify and address the specific causes of extended maternal mortality risk so that appropriate ameliorative programmes might be developed.

**055. Mitra SN; Al-Sabir A; Saha T; Kumar S. Bangladesh demographic and health survey 1999-2000. Dhaka: NIPORT/Mitra and associates/MeasureDHS+, 2001.**

The objective of the survey was designed to provide information on basic national indicators social progress including fertility, contraceptive knowledge and use fertility preference, child mortality, maternal and child health, nutritional status of mothers and children and awareness of AIDS. This survey was conducted under the authority of NIPORT of the MOHFW and implemented by Mitra and Associates during November 1999 to March 2000. This survey employed a nationally representative two stage sample consists of 500 primary sampling units (PSU). Four types of questionnaire were used; i) household questionnaire, a questionnaire for women, and another questionnaire for men and a set of questionnaire for service provision assessment (SPA). Survey data showed the increasing trend of contraceptive use, declining childhood mortality, and improving nutritional status. At current fertility levels, a Bangladeshi woman will have 3.3 children during her reproductive years. In general, urban women tend to have smaller families than rural women. Nearly two-third of Bangladeshi mothers do not receive antenatal care and only 16 to 19 % mother received advice on the danger sign of pregnancy. Almost all births (92%) in Bangladesh are delivered at home. Use of facilities for delivery is much more common in urban areas. Sixty-four percent of births are assisted by TBAs. Rate of immunization in Bangladesh is significantly increased in recent years. Data indicates the improvement in child survival since 1980s. The infant mortality rate was significantly declined within few years. Fourty-five percent children under 5 are stunted; 10% are wasted and 48% are under-weight. Malnutrition is substantially higher in rural areas than urban area. AIDS related knowledge of women is not satisfactory especially in rural area. Only 31% of women and 50% have heard of AIDS. Urban residence and education have a strong positive association with AIDS knowledge. SPA survey result indicate that regarding family planning, more than half of women live in areas where shops sell temporary, non-clinical FP methods. However, urban women have more access in these than rural. About 80% of women live in a community where child immunization is available and two-thirds of them can get an ORS packet in the village. The survey results will provide opportunity to improve the ongoing existing FP and health programs in Bangladesh and also to identify effective

strategies & initiate new ideas for achieving the goals for FP and health programs of Bangladesh. The need however, for further detailed analysis of BDHS data remains.

**056. Mozumder ABMKA; Ahmed KS; Rahman DMM; Roy NC. Operations research project surveillance system annual report 1999. Dhaka: ICDDR,B, 2000. (ICDDR,B special publication; no. 109).**

The main objective of the report was to provide the research community with information on the current levels of the programmatic and demographic indicator of ORP sites and also it was intended to provide an evaluation of intervention or assess the impacts of particular interventions. The sampling fractions include every sixth household in Abhoynagar of Jessore district and every fourth household in Mirsarai and Patiya of Chittagong district. In the urban area of Dhaka cluster-sampling design was followed. Relational database software was used for checking the logical indiginity of an event against other available data, or each sample individual and household. The database design included computerization of the data of visits and the data of movements into and out of the household for each individual member. The report consists of 7 chapters. They are: Background of the ORP Surveillance system (chapter 1); Contraception (chapter 2); Use of services at the static sites (chapters 3); Vaccination Coverage (chapter 4); Fertility (chapter 5); Mortality (chapter 6); and Trends in selected family planning and demographic indicator (chapter 7). In the findings area, the study described basic statistics on households, male and female population, currently married women of reproductive age (CMWRA), children aged less than 5 years, and family size, for each intervention and corresponding comparison area in chapter 1. A brief analysis of contraception has been given in chapter 2. This chapter showed the comparative indicators of project intervention area with the national indicators and sources of modern contraceptives. Client's knowledge of service points and receipt of services from the static sites have been reported in chapter 3. Chapter 4 highlights the coverage of DPT, polio, measles, BCG and TT, and also includes information on the sources of these immunizations. Fertility rates: CBR, CDR, TFR, and age specific fertility rates includes in the chapter 5. Indicators relating to mortality and an abridged life table for both sexes have been described in chapter 6. The last chapter shared the trends in selected family planning and mortality indicators. The trend in the CPR for Mirsarai showed a substantial increase and the trend in infant mortality at the rural field sites showed a substantial decrease. It was expected that the information on the levels and trends of contraceptive use, vaccination coverage, fertility and morality rates and their comparability with that of national figures presented in this report would be of interest to policy makers, family planning program managers, and public health specialists.

**057. Neaz A; Al-Sabir A; Khan MA. Review and identification of gaps in the current knowledge and understanding on the leveling of total fertility rate in Bangladesh. Dhaka: NIPORT, 2004.**

The study attempts to identify the gaps in the current knowledge and understanding about the leveling of total fertility rate in Bangladesh. For collecting data a number of articles were reviewed and identified the underlying hypothesis, assumptions and contentions which may have implications on the determinants of reproductive behaviours. The demand school contends that there is a lack of demand for fertility reduction and that resistance to change lies consequently at the socio economic and cultural level. The supply school holds the view that demographic change can be induced through an effective service delivery program even without any charges in the socio economic structure. The study also showed that the

dominance of pill, condom and injectables are visible in the method mix at the cost of long acting methods. The discontinuation rates have increased from 47.8 to 48.6 percent and contraceptive failure rates had increased from 3.5 to 4.3 percent during 1993-94 to 1999-2000. This will not be considered on sufficient reason for the leveling of TFR since the DHS reports of many other countries also show similar dropouts. The reason for fertility increase among the poorest group, to a large extent is unknown. The DHS reports show that during the same period worker client contact has been reduced from 37% to 21%. The richer section has taken the benefit of private sector, SMC outlets and other sources. The prevailing service delivery failed to ensure services accessible to the poorest group. The study recommends that to overcome the leveling of TFR and achieving the fertility proper understanding of the sociology of demand and supply as well as redesigning the national program is a must. To minimize momentum effect it is necessary to enhance age at marriage and delay first birth. Education and employment for women may contribute in this regard.

**058. Rahman M; Davanzo J; Razzaque A. Do better family planning services reduce abortion in Bangladesh? *The Lancet*. 2001; 358: 1051-1055.**

The study was carried out to assess the effects of family planning services of abortion rates in two similar areas. It was examined the trends of overall abortion rates and rates for intended and unintended in two similar typical areas of rural Bangladesh. It was analyzed Matlab Demographic Surveillance System (DSS) data on pregnancy outcomes between 1979 and 1998 in these areas, matching them to survey on fertility preferences, which enabled to identify pregnancies as intended or unintended. The findings indicated that abortion rates were significantly lower in the area with better family planning services compared with the comparison areas (1984-86, 2.2 vs. 5.2; 1996-98, 2.3 vs. 3.8). Abortion of unintended pregnancies was similar in both areas, but the highest levels of contraceptive use in the treatment area had led to lower levels of unintended pregnancy and abortion. The likelihood that an unintended pregnancy would be aborted had been increased in both areas but the decreased in unintended pregnancies was sufficiently large in the treatment area to offset this increase. Thus the study interpreted that abortion might increase during the fertility transition in less developed countries as the desire to limit family size increased unless there was widespread availability of quality family planning services.

**059. Rahman MM; Shahidullah M. Female adolescent marriage among the slum dwellers of Dhaka city. *JOPSOM*. 1999; 18(2): 6-10.**

The study was carried out with the objective to assess the pattern of marriage among the adolescent females in the slums and to identify the factors influencing marriage. It was a cross-sectional study conducted in five selected slums of Dhaka City. Adult females of reproductive age having an infant aged less than one year and or an event of infant death constituted the study population. The study was conducted by the Department of Population Dynamics, National Institute of Preventive and Social Medicine (NIPSOM), Dhaka, 1997. Data on 1008 marriages in slum dwellers of Dhaka city were analyzed. The mean age at marriage of females was 14.77 years with standard deviation 2.72 years. The proportion of females married before attaining the legal age of marriage at 18 years in Bangladesh was very high among the slum dwellers. An overall socio-economic index was computed based on income, housing and asset index spousal education, occupation and environmental sanitation. The existence of modern facilities, viz. piped water; toilet facilities, electricity and natural gas for cooking reflect the degree to which the families are enjoying urban life as well as their

socio-economic status. Bi-variate analysis revealed an association between early age at marriage and the socio-demographic characteristics, viz. husband's education, husband's occupation, religion, type of fuel used for cooking, housing index, source of drinking water and presence of electricity in the house ( $P < 0.05$ ). In logistic regression analysis, only husband's education was found to be independently related with early age at marriage ( $p < 0.028$ ). In the present study, status of husband's education appeared to be the most important predictor for early age at marriage. This study provided important information for policy makers regarding socio-economic infrastructure development. The findings of the study have policy implications that should be considered, while devising ways to solve the issues related to teenage marriage. In order to further enhance the age at marriage and to reduce the rate of teenage marriage, adolescents, their parents, and the community in large should be made more aware about negative health, social and economic consequences of early marriage, early pregnancy and large family. This could be done through social mobilization, behaviour change communication (BCC) campaigns, and regular home visits by health and family planning workers. Education of girls as well as boys to ensure basic literacy, training of women in income generating activities and primary health care are also needed. The government should take initiatives to create more employment opportunities for women especially young women. Early marriage seemed to contribute higher marital dissolution. A voice for women in making decisions about marriage should be promoted.

**060. Rahman MM; Shahidullah M. Factors influencing infant mortality among the slum dwellers of Dhaka City. *JOPSOM*. 2001; 20(1) 43-50.**

The study was undertaken to assess the rate of infant mortality among the slum dwellers of Dhaka City and also to identify the factors responsible for it. It was a cross-sectional study carried out among the women of childbearing age having an infant under 1 year or an event of infant death. The study conducted in 5 selected slums of Dhaka City covering 9124 households. The study was conducted by the Department of Population Dynamic, National Institute of Preventive and Social Medicine (NIPSOM), Dhaka during 1997. The total number of deliveries was 1033. Of them, 1015 had live births, 47 neonatal and 34 post-neonatal deaths. In 2 cases, both mothers and children died. Five mothers could not be traced and hence they were excluded from the study. Neonatal mortality rate (46.6/1000 live births) was significantly ( $P < 0.001$ ) higher than post-neonatal mortality rate (33.7/1000 live births). However, no sex differential was found ( $P > 0.05$ ). Regarding the place of death of the last child, majority of the deaths have taken place in the slum ((84%), only 8.6% deaths occurred in hospitals or clinics. Among the dead children about 41% receipt treatment prior to death from traditional healers like kabiraj/fakir, etc. Thirty eight percent received allopathic and 14% homeopathic treatment. Twenty eight percent children died untreated. Acute respiratory infections (pneumonia) was the leading cause of infant deaths (40%) followed by diarrhoea (16%), birth injury (15%), pre-maturity (11%), birth asphyxia (6%), and others (12%), viz congenital defect was 4% and neonatal tetanus, febrile convulsion, meningitis were one percent each responsible for infant deaths. Infant mortality was high among working mothers, among those with no access to sanitary latrines, among those who experienced prolonged and abnormal labors ( $p < 0.001$ ). No significant association of maternal nutrition was found with infant death ( $P > 0.05$ ). The variables, which were significant in bivariate analysis, were entered in logistic analysis. It was evident that infants' death was 4 times higher in abnormal presentation and 3 times in prolonged labor more than 18 hours. One-third of the death was

untreated. This study provided important information for policy makers regarding the prevention of infant mortality among the slum dwellers.

**061. Rahman MO. The impact of co-resident spouses and sons on elderly mortality in rural Bangladesh. *Journal of Biosocial Science*. 2000; 32: 89-98.**

The objective of the study was to examine directly the mortality consequences for elderly men and women of differences in the presence of co-resident spouses and sons. A high quality prospective data were used with a large sample size from rural Bangladesh to examine it. The data used in this study collected from the Matlab Surveillance System in rural Bangladesh, operated under ICDDR,B. For this analysis, a data file consisting of information on the 8-year mortality experience of all individuals aged 60 years or more in the Matlab study population as of March 1974 was set up. In this study multivariate analysis was used as a statistical method. The study demonstrated the initially co-resident sons' spouses and sons have a major impact on the subsequent mortality of old people, with significant differences by the sex of the elderly person and the age of the son. An important co-relation of this paper was that it demonstrates quite conclusively that adult co-resident sons greatly reduced the mortality of elderly people, with mother benefiting more than father, and younger sons being more benefited than older sons. Spouses are significantly reduced mortality by similar magnitudes for both elderly men and women. On the other hand, co-resident adult sons-being more beneficial than older sons. Furthermore, both married and unmarried females appear to benefit equally from co-resident adult sons. Finally, this analysis suggested that the impact of spouses and sons on mortality in old age was not substantially mediated through changes in elderly economic status.

**062. Rahman MO. Family matters: the impact of kin on the mortality of the elderly in rural Bangladesh. *Population Studies*. 1999; 53: 227-235.**

The objective of the study was to examine the consequences of differences in kin networks for the mortality of the elderly. This study was distinctive in a number of important ways: first, it used longitudinal data of high quality which tracks changed in kin networks over time to explore the impact of kin on the survival of the elderly. Previous work had been largely cross-sectional in nature, using relatively small samples, which made it difficult to establish cause and effect, Secondly, this study unlike previous work that focused on spouses and sons explores directly the impact of other kin on the survival of the elderly. Thirdly, this study investigated the impact of both co-resident and non-co resident kin. Finally, this study examined the differing impact of kin characteristics such as marital status on the survival of the elderly and to explore possible mechanisms by which kin had their impact. This study used high quality longitudinal data on kin availability, proximity and marital status from the Matlab surveillance area in rural Bangladesh to explore the impact of kin members on the survival of the elderly over a six years period. This surveillance system had maintained a continuous register of all vital events for a defined population of 40,000 households and approximately 200,000 individuals in the Matlab sub-district about 40 miles south east of the capital city of Dhaka. In addition to the continuous register, censuses were held in 1974 and 1981 to assess a variety of socio-demographic variables, including age, disability and marital status. The results extracted from discrete time hazard models-suggested that the presence of a spouse, sons, and brothers substantially improves survivorship, but with differing effects by the sex of the elderly and the number of sons and brothers. The result showed that the presence of a spouse substantially reduced mortality for elderly men (O.R.=0.57;95 percent C.L.=[0.38-

0.85]), but it had a statistically insignificant impact on elderly women (O.R.=0.79;95 percent C.L.=[0.50-1.25]). Surviving sons on the other hand significantly reduce mortality for both elderly men and women, but with the beneficial impact becoming significant only when there were two or more surviving sons (males O.R.=0.42;95 percent C.L.=[0.24-0.73]; females O.R.=0.60;95 percent C.L.=[0.40-0.88]). Moreover, there was no additional benefit from having more than two sons. model were tested with different groupings of surviving sons; one son, two sons, three sons, etc. No statistically significant difference existed between two sons and three or more sons. With regard to daughters, the results showed that daughters, regardless of their number, do not have any impact on the survival of their parents. The effect of daughters on the survival of the elderly for those without any sons was also investigated and found to be non-significant. Furthermore, no differential impact was found by proximity of daughters. In addition, daughters were found to be no more useful for married than for non-married elderly. This study offers little support of any one of the following as mechanisms by which kin affect the survivals of the elderly; changes in the economic status of the elderly as proxies by land holdings; improved access to instrumental support as proxies by the marital status of sons and decreased in social isolation as proxies by proximity of kin.

**063. Rahman MM. Population and poverty: a general discussion. In: *Population and development dynamics: a training handbook*/edited by Md. Rezaul Karim et al. Comilla: BARD, 2000. pp.199-214.**

This paper explored the relationship between population and poverty and describes how population problems could undermine the policies of poverty alleviation. The author discussed and interpreted the conceptual issues of poverty, approaches of drawing poverty line, and national and global issues of poverty. It was also assumed that the poverty and its several dimensions were associated with household size, child dependency burden, age of household heads and sex-ratio. The analysis indicated that household size, age of head of household, sex ratio were important indicators in explaining differentials in incidence of poverty. The analysis of employment situation showed that a significant portion of rural labour force remained unemployed or underemployed throughout the years. There was a close association between incidence of poverty and incidence of unemployment. The highest incidence of poverty was found among landless agricultural labourers, which was followed by agricultural workers with small land and fisherman and livestock holds. It was recommended that for balanced and sustained development for rural economy, phase-wise transition towards redistribution of access to economic resources including land and other complementary inputs such as credit, extension services etc. were essential. It was also felt that the overall technological reform and rural based industrial development to absorb the landless people would be appropriate measures against poverty.

**064. Razzaque A; Vanzo JD; Rahman M; Gausia K; Hale L; Khan MA; Mustafa AHMG. Pregnancy spacing and maternal morbidity in Matlab, Bangladesh. *International J of Gynecology & Obstetrics*. 2005; 89: 541-549.**

The study was conducted to examine the relationship between pregnancy spacing and seven measures of maternal morbidity in Matlab, Bangladesh. The study analysed maternal morbidity data on 11,122 women who visited a health center during their third trimester of pregnancy between 1996 and 2002. Adjusted odds ratios were obtained through logistic regression analysis to assess the effects of pregnancy intervals of differing lengths while holding constant other influences (six variables) on maternal morbidity. The study revealed



after controlling these variables pre-eclampsia and high blood pressure are significantly more likely for women with preceding inter-pregnancy intervals of less than 6 months or 75 months or more compared to those with intervals of 27–50 months. Premature rupture of membranes is significantly more likely following inter-pregnancy intervals of 6-14 months and edema is significantly more likely following inter-pregnancy intervals over 50 months. As seen in the study, educated women had higher levels of morbidity than less educated women, and the differences are usually statistically significant. Bleeding and anaemia are significantly lower for educated women than less educated. No consistent morbidity pattern by household space is observed. Non-Muslims have significantly higher rates of pre-eclampsia and high blood pressure than Muslims. None of the other religious differences are statistically significant. Short and long inter-pregnancy intervals are associated with increased incidence of some maternal morbidity.

**065. Rob U; Islam MM; Chakraborty N; Mutahara MU. Dynamics of menstrual regulation practices in Bangladesh. In: *Fertility transition in Bangladesh: evidence and implications*/edited by Rob U; Ameen MN; Piet-Pelon N. Dhaka: UNFPA Bangladesh, 2004.**

The overall objective of the proposed study was to analyze the issues related to MR practices in Bangladesh. The study utilized both qualitative and quantitative data. The major source of qualitative data is the 1999-2000 BDHS. This survey collected information on respondent's background characteristics, pregnancy history, and outcomes, contraceptive use history, marriage and fertility preferences through a nationally representative sample of ever-married women aged 15-49. The study also utilized data from the national level Contraceptive Prevalence Survey (CPS) conducted during 1979-91. Qualitative information collected through in-depth interviews and focus group discussions (FGDs) was used to understand the dynamics of MR acceptance in detail. The in-depth study were conducted in two rural areas were Gazipur and Dumuria, while the two urban areas were Dhaka and Khulna Metropolitan areas. The results indicated that only 6% of women was aware about unprompted knowledge about MR. Overall 82% of currently married women had heard of MR. Only 25 of women who had ever received MR services by selected characteristics and 5% had ever received MR services. Among the six administrative divisions, Barisal showed the highest MR usage with a rate of 6.3%, next was Khulna with 5.8%, while Sylhet division showed lowest use rate (2.9%). The average age of MR acceptors was 27 years and women accepted MR an average 12 years after marriage. The findings showed that MR acceptors were relatively older than non-acceptors. The average age of women who had ever accepted MR was 32.2 years, they were thus 2.7 years older than contraceptive users and 4.9 years older than women who used neither contraceptive nor MR. About 73% of women who had received MR services were using contraceptive methods at the time of the surveys, compared to 53% of non-acceptors. The majority of the women who were using family planning methods prior to MR did not switch to another method after the acceptance of MR. More than half (53%) of the MR acceptors did not have experience that any serious problems. Most women (79%) felt that MR was against their religion. The findings clearly showed that unwanted pregnancy results from either from not using contraceptive or from contraceptive failure, birth of which are related to the poor quality of family planning services, particularly counseling. The study findings recommended an urgent need for implementation of a policy focused primarily on providing information through mass-media and making sure that service providers are adequately trained to do the job.

**066. Roy NC; Kane TT; Barkat-e-Khuda; Haque I. Socioeconomic and health implications of adult deaths in families of rural Bangladesh. Dhaka: ICDDR,B, 2000. (ICDDR,B working paper; no. 132).**

The main objective of the study was to examine the impacts of an adult death (male or female) on the socioeconomic and health status of his or her family. Data for the longitudinal sample registration system (SRS) in two rural areas of the MCH-FP extension project (Rural) of ICDDR,B were used for this study. A total of 227 adult deaths of married persons, aged 15-59 years, occurred during 1983 - December 1987 in the simple area, were included in the study. The families of the deceased were followed for five years following the death. Factors, such as survival status of children, educational status of children aged 6-12 years and out migration status among adolescents aged 12 – 20 years in those families were observed and recorded. A control group of 3,350 families that did not experience any adult deaths were also followed for five years. The status of the children both the groups, five years after the adult death was compared. The findings of the study showed that the negative impact was more pronounced among the children from poor families and when parents were not educated female children were severely affected by an adult death in the household. Death of a father or a mother in a family was associated with a higher rate of out migration (especially marriage) of adolescent daughters. An adult death in a household was associated with a significant higher mortality risk of children in the household during the five years following the adult death. These child mortality risks were significantly higher when an adult female died and when the index child was female and/or aged less than five years at the time of adult death. So it was recommended to conduct a more in-depth qualitative study to understand more clearly the nature and mechanism of socioeconomic and health impacts of adult deaths of family and the society.

**067. Sack DA; Ahmed S; Razzaque A; Chakraborty J; Yunus M. Improved indicators of infant mortality for integrated primary healthcare programmes. *J Health Popul Nutr*, 2000; 18(2): 61-68.**

This paper looked into the new indicators of infant mortality, termed fertility-adjusted infant mortality ratio (FIMR), age specific fertility-adjusted IMR (AFIMR) and total infant mortality ratio (TIMR) that was more sensitive to rapid demographic changes. Mortality and fertility rates were decreasing rapidly in many developing countries. It was argued that the indices commonly used as measures of these changes, i.e. infant mortality rate and fertility rate, ignore the interaction between mortality and fertility, and did not reflect their combined impact in lowering overall infant mortality. The proposed indicators include the combined effects of change in both fertility and infant mortality rates on overall infant mortality in a region and appeared to measure the effects of integrated health programs better. Further these conceptualize the mother-infant pair as an appropriate unit with which to monitor mortality and may be used for guiding allocation of resources intended to lower infant mortality. The application and usefulness of these indicators have been illustrated, using one hypothetical example and empirical data from the maternal child health and family planning programme in Matlab, Bangladesh, as well as data from white and black population groups in the USA. The results of these examples demonstrated that the new indicators were more sensitive than traditional measures when describing infant mortality and might better reflect the perception in infant mortality status in the community. The study suggested that future studies might be needed to extend their indicators to other geographic areas and situation.

**068. Saha UR; Bairagi R. Fertility stabilization in Bangladesh: the role of sex preference for children on desired family size. In: *Fertility transition in Bangladesh: evidence and implications/* edited by Rob U; Ameen MN; Piet-Pelon N. Dhaka: UNFPA Bangladesh, 2004.**

This article will examine these issues with special attention to the effect of son-preference and of the desired family size on fertility in Bangladesh. The study data came from the 1999-2000 BDHS, a nationally representative survey. The survey had information on levels and trends of fertility, contraceptive use over the reproductive life, and the data on the desired family size for 10,544 ever married women of reproductive age, of which 9,720 were currently married. This data were the main basis of this study. Data for two variables on fertility preference were collected from each currently married woman at the time of the survey. The two variables, desire for additional children and ideal family size, were obtained through questions put to targetful work. Multiple regression and logistic regression techniques were used for multivarried analysis to examine the determinants of each of the dependent variables. The findings presented in this article support the argument that fertility coverage to the desired family size. It is estimated that there would be a reduction of about 0.23 children in the TFR in the absence of sex preference for children. But the figure is much less than the present difference of 0.8 children between the TFR and the average ideal family size. Findings imply that there would be a reduction in the TFR in the absence of sex preference but the reduction would not be more than 0.2 children. There was a strong indication that the desired family size ultimately determines actual fertility in the country. At the same time, the desired family size is influenced by the level of socio-economic development. In addition to existing family planning and reproductive health services, fertility programs have to address the improvement of socio-economic conditions, particularly women's education, strengthening BCC services in motivating people to have a small family, ending sex preference for children, and increasing breast feeding, and improvement in child survival.

**069. Salim M; Rahman MA; Begum R; Siddiqua SA. Fertility profile of women from families in a selected sweeper colony under Dhaka City. *JOPSOM*. 2001; 20 Suppl.;1-6.**

This study was undertaken to find out the fertility profile of women of child-bearing age selected from sweeper families residing in sweeper colony under Dhaka City Corporation. This cross sectional study was carried out among all the women of childbearing age having at least one child. The women were living in the Miron Jilla Sweeper Colony of 25, Aga Sadek Road, Dhaka. The study was carried out from April to June 2001. The results of the study revealed that 256 respondents were all Hindus. Their mean age was 26.08 years. Forty percent was illiterate, and the rest had primary and secondary level education. Two-third (69.08%) was house wives. The respondents average monthly family income was Tk.3493.16. Almost half (48.04%) had marriage at or before 15 years. The mean age at marriage was 15.74 years. Majority had first conception between 1 and 2 months after marriage. The average number of children ever born to each woman was 3.08 with average birth spacing of 2.04 years. About two-third (63.1%) of the respondents wished for further children in future to safe-guard against child mortality. Exactly half of the respondents preferred 3 children. Over half (53.5%) were using contraceptive methods with majority (54.7%) using oral pills, a figure for above national rate (23%). Over 60% respondents perceived that contraceptive use should better be avoided immediately after marriage because it might cause infertility. Most respondents (53.48%) opined for a time interval of 1 to 2 years after first marriage to take the first child although took first baby just within 2 months of marriage. The study provided

conclusion that important information for policy makers regarding the fertility profile and its determinants among the women of sweeper community is badly needed.

**070. Sarwar H. Population growth: impact on health, education and quality of life. In: *Population and development dynamics; a training handbook/edited by Md. Rezaul Karim et al. Comilla: BARD, 2000. pp. 228-237.***

This paper illustrated the impact of the population growth on health, education and quality of life of the people in Bangladesh. From the available data it was showed that population growth created tremendous demand for health services. During the period of 1991-1996 population increased from 106.3 to 111.4 million, whereas health expenditure increased from Tk. 635.59 to Tk.1,606.54 crore, per capita health expenditure decreased form Tk. 61.37 to Tk. 31.51, health institutions increased from 4014 to 4137 and health manpower increased from 38244 to 52455. These findings indicated that population growth created pressure on increasing the health facilities of the country. With the increase of population, educational institutions like primary school increased from 0.05 million to 0.06 million, secondary school from 0.02 to 0.013 million and other educational institutions from 1247 to 3305. Government and public expenditure increased on education increased by 168.5 and 150.4 per cent respectively. Similarly, rapid population growth reduced the quality of life in terms of land man ratio, unemployment rate, per capita food intake, clothing, education, medical treatment, house, etc. The high rate of population growth also exacerbated the problems of environmental degradation and retarded the development efforts in various sectors of the economy. Therefore, necessary steps should be undertaken both from government and non-government sides to reduce the population growth of the country.

**071. Selim N. Early marriage in Bangladesh: an examination of the social institutions and processes. Dhaka: BRAC, 2006. (Research monograph series; no. 31)**

The study was intended to examine the interlinkages between rising dowry and escalating marriage transactions, cultural traditions and norms over riding all other considerations in inconsequence and poverty and early marriages in Bangladesh. The study was qualitative in nature and was conducted upon 6000 male and female adolescents aged 13-22 yrs in three rural districts of Bangladesh- Sherpur, Chapai Nawabgonj and Chittagong. The study identified that poverty played an important role in marriage deision in the Bangladeshi context. Families that are relatively well off and do not have to worry about everyday survival can afford to wait longer to marry of their daughters. A slide into poverty can push families to marry their daughters off earlier than expected especially if the dowry demands are relatively low. It is the poor families who seem to be less concerned with what the community thinks of them waiting on the marriage. The social and religious norms play key role in dowry negotiations. Social norms dictate that all families have to pay dowry and even though some families felt very strongly about not taking or giving a dowry because it is sin according to Islam. They have to pay dowry regardless of their religious beliefs. It is also found that marriages without girls consent were not considered. There is considerable regional and economic class variation in the waiting can to marriage from the time a marriage proposal is initiated to the time it is solemnized. Marriage decisions are also closely linked with the issue of safely and honour of both the girls and her family. In most cases we found that the girls grow up their parent's fear that if kept home for too long they would stay and have on affair and violate the family norm. Theis is a crucial dring force in marrying young girls off as soon as possible. It is observed that everybody needs to pay dowry regardless of their economic

situation. Education played an important role in dowry negotiations. Surprisingly while in Chittagong and Chapai Nawabgonj the trend was as expected which was that with higher educated boys the families need to pay more in dowry as the boy is worthy. The study recommended that to initiate social movements against dowry aware them about the negative consequences of early marriages through mass media. The govt. and NGOs can play a key role and contribute with their ideas to find out a better solution of this social virus.

**072. Shahidullah M; Chowdhury MS; Azad AK; Karim MR; Haque MM; Ali M. Internal migration and its effects on the family, social norms and values. *JOPSOM*, 2000; 19(2): 50-54.**

The objective of the study was to identify the causes and effects of internal migration on the migrant families in terms of family type, social norms and values. Data were collected from 413 migrant household heads aged 15-70 years living in slum and quarter settlements in Dhaka city using a semi-structured interview schedule. This study was carried out during the July 1995 to June 1996 under the Department of Population Dynamics, National Institute of Preventive and Social Medicine (NIPSOM), Dhaka. The study was male dominated (87.4%) and 12.6% were female. The frequency of the causes of migration includes landlessness (58.8%), unemployment (2.4%) displacement (1.9%), business and others (2.3%). There was significant sex difference with respect to cause of migration, which was more pronounced in case of landlessness and seeking job. Forty-seven percent migrants were qualified up to class V and above. Out of 413 migrants, 296 (71.6%) had kinship connection. The educational status specific percentage of kinship connection increased with the increase in the educational qualification of the migrants. The study showed that before migration, the number of joint families was 232 (56.2%) which was reduced to 73 (17.7%) after migration. Similarly before migration, the numbers of nuclear families were 173 (41.9%), which were increased to 340(82.3%). Kinship connection and educational status played significant roles in migration. Family type was changing from joint and extended to unclear one. Changes relating to family structure, social norms and values took place among the migrants and their children, including both positive (65.6%) and negative (34.4%) effects. The migrants opined that the negative changes were detrimental to the existing social norms and values. However, majority of them (87%) was satisfied with migration. The migrants perceived an improvement in living conditions through adaptability of new values, norms and behavior supportive to city life, and also discarding those values, which hampered it. Further research should be taken on this subject for getting details findings and recommendations on internal migration which might effects on the family life.

**073. Shaikh K. Impact of age at marriage on fertility in rural Bangladesh. *South Asian Anthropologist*. 2000; 21(1): 15-22**

This paper discussed under age at entry into marriage (age of first marriage) in any way influences the level of fertility of women and the extent to which dissolution of marriage weight influence the level of fertility. Data for this study has been taken from the Demographic Surveillance System (DSS) in Matlab, Bangladesh. The data used in this study are registration of marriage for a period of eighteen years from 1975 to 1992 of 149 villages. The socio-economic status (SES) information collected in 1982 census was also used. The analysis showed that age of marriage has a significant effect on fertility. The lower than age at first marriage, the higher is the number of children ever born. The result also showed that the fertility of more than once married women is higher in comparison to the once married

women. The level of fertility also seems to be lower among women who got married at ages 19 years and above. The analysis showed that the women with higher secondary and above education had lower fertility compared to illiterate women, though the difference was statistically significant only at 10 percent level. Compared to men, fertility is significantly lower among women whose husbands were in service. The infarctions between child loss and were showed that the child loss was significantly higher in the comparison area than in the MCH-FP once. The table 4 reveals that the fertility of more than once married women is higher in comparison to the once married women.

**074. Tasnim S; Kabir N; Rahman A; Ahmed A; Chowdhury S. Maternal death audit: experience from a periurban hospital. *J Bangladesh College of Physicians and Surgeons*. 2006; 24(1): 5-9.**

This study was designed to review maternal deaths in a peri-urban comprehensive health facility to find out patients profile and selected factors associated with maternal deaths. Review of 40 maternal death cases occurred in the facility (ICMH, Dhaka) between September 1999 and December 2004 was done to find out the profile of the patients and factors associated with the deaths. Data was collected from hospital case records (admission, register, case file, delivery register, death certificate) using structured questionnaire. The research results confirms that the mean ages of deceased mothers were 34.85+5.6 years, 25% were prim Para and vaginal delivery occurred in 42.6% cases. Thirty percent deaths occurred within six hours after getting admission in the hospitals and 73% deaths occurred during post partum period. The primary obstetric causes of death were severe pre-eclampsia and eclampsia (42.5%), hemorrhage (17.5%), obstructed labor (12.5%) and sepsis (7.5%) respectively. In conclusion, the case study results also showed that facility based audit into maternal deaths provide an opportunity to understand the inciting factors. It is recommended that the professional practice and management like antenatal selection of causes for hospital delivery, emphasis for community awareness for availing safe motherhood services, effective linkage from grassroots level to higher level and implementation of maternal mortality or morbidity surveillance system should be a routine practice in high care system.

## **2.2 FAMILY PLANNING (Contraception, methods etc.)**

### **075. Alamgir S; Routh S; Reza M. Operational zinc Essential Services Package (ESP) delivery in the public sector in Dhaka City: baseline findings from a cross sectional study. Dhaka: ICDDR, B, 2000. (ICDDR, B working paper; no. 133).**

This survey was conducted to estimate the benchmark indicators of health and family planning performance in the area where an operations research on the delivery of ESP from government primary healthcare clinic had been initiated. A baseline survey was conducted in the Sher-e-Bangla Nagar area of urban Dhaka in April – August 1999 covering a sample of 1,817 married women of reproductive age (MNRA) of them, 1,322 was from the slum and the remainder from non-slum areas. A structured questionnaire was used for interviewing the respondents in their homes. Results of the study showed that 66% of the slum women were uneducated, but they were more involved in income generating activities than their non slum counterparts. Slum women are intended to marry early since 16% of the slum-respondents were adolescent mothers, compared to only 4% among the non-slum women. The total of marital fertility rate was 4.2 for the study population as a whole with 2.1 and 4.8 for the non-slum and slum sub-population respectively. The non-slum population was found to effectively using contraception. The mean number of living children per family was 1.6. On the whole 52% of the married women of reproductive age were using contraception during the survey period. The rate of use was much higher in the non-slum households (61%), compared to slum households (48%). The most popular contraceptive method was pill in terms of awareness and use (100% and 37% respectively). More than half of the never users expressed clear cut desired to use a family planning method in near future. Unmet need among those who intended to limit childbirth was one-fifth and among women who wished to space birth was one-tenth. The study also revealed that prevalence of pregnancy among the currently married women of reproductive age was 10% (11% in slum and 7% non-slum areas). The survey also showed low use of antenatal and postnatal care services, higher prevalence of diarrhoeal diseases, and respiratory illness. The findings of the study point indicated to the need for improving childhood/maternal immunization for slum dwellers in particular and there were also need to promote use of longer acting family planning methods.

### **076. Anonymous. Evaluation of the project utilization of canvassers for male motivation. Dhaka: FPAB, 2000.**

This evaluation study on the project “utilization of canvassers for male motivation” was undertaken in order to assess the effectiveness of the program and its impact on rural male folk in raising their awareness, knowledge, and practice of FP in the year 2001. The study was conducted at 4 branches namely Tangail, Noakhali, Kushtia and Dinajpur. Five canvassers from each area were selected. Canvassers were observed on market day. Total sample size was 400 married male audiences. From each branch 100 married male audiences were interviewed through structured Bengali version questionnaire. Also another two sets of questionnaire for FGDs and checklist for personal observation were used for data collection. The study findings indicated that almost everyone knew of oral pill as a method of contraception followed by condom (96.5%), injectable (25.0%), vasectomy and tubectomy (11.0% each). Other methods like IUD, foam and Norplant were by 1.0%, 0.3%, and 0.5% respectively. It was found that the audience had insufficient knowledge about other FP method except oral pill and condom and canvassers could not disseminate knowledge perfectly for them. It was observed that 67% of audience or their counterparts were using contraceptives. Govt. field workers (32.5%),

canvassers (16.2%), relatives (14.7%) neighbors (10.5%), friends (8.7%) and doctors (2%) were the main sources of information to the audience by which they were motivated to use FP methods. It is observed that topics covered by the canvassers were used of FP methods (91.2%), benefit of FP (88.7%), population problem (67.8%) and facility of small family (42.7%). At about 94% of audience had heard about sources of supply of contraceptives, and 20% audience had received card/token containing address of FPABs clinic from canvassers. Male motivation for using FP method, mass publicity of FPAB and its activities, service delivery in rural areas, referring clients to clinic, dissemination of FP/MCH programme, make rural people aware of STDs were the areas of success achieved so far by utilizing canvassers as reported. The discussants suggested some measures to continue the project for the next five years. The study recommended that the canvassers might be utilized as depot holders. They should be educated by taking training (especially on SRH & other issues), and behaved like a professional canvassers for referring client to the clinic, encouraging to popularize the song composing on FP, ensure the supply of available IEC materials, providing necessary logistic support. Also the study had given the emphasis on important issues that the canvassers should be given special identity of social work during canvassing in rural Hat/Bazaar (place of gathering) and should also be provided all necessary legal and administrative support to them.

**077. Anonymous. A consequence of success: the issue of contraceptive security in Bangladesh. Dhaka: Ministry of Health and Family Welfare, 2004.**

The family planning efforts in Bangladesh has been widely recognized as one of the most successful programs in the World. However, the continuous availability of contraceptives is not presently guaranteed. Paradoxically contraceptive security has become a problem for Bangladesh. To improve access to contraceptive of its largely rural population, the GOB successfully staffed trained equipped, and supplied a vast network of more than 14,000 clinics. The GOB sent more than 25,000 family health field workers to distribute contraceptive directly to women in their homes. The GOB successfully coordinated donor inputs for information, education and communication activities. The GOB made surgical contraception widely available to men and women. In the mid-1980s, there were approximately 500,000 procedures per year. The Social Marketing Company (SMC) became one of the most successful programs in the world. It now supplies three-quarters of the condoms and one-quarter of the oral contraceptives used in Bangladesh through more than 130,000 retail outlets. As noted earlier, the quantity of contraceptive managed by the system will double by 2015. The current international market for large quantities of contraceptives is highly competitive, with prices in general, having declined over the past years. The decision to establish local manufacture should be business decision, not a politically or donor-driven decision. The responsibility for devising workable plans to ensure contraceptive security belongs to the GOB, but parties those plans will be numerous and diverse. Such a complex issue requires an array of stakeholders to participate in a focused, coordinated effort. Various ministries NGOs, the SMC, commercial sector, donors, advocacy organizations and technical assistance agencies will all play a role in securing contraceptive availability.

**078. Arefin MS; Mia MAR; Ali MS; Arzoo R; Rukunuzzaman M. Study on the effect of prolonged use of oral contraceptives on serum lipid profile in healthy young women. *Bangladesh Journal of Nutrition*. 2000; 13: 65-68.**

The study was undertaken to determine the effect of prolonged use of oral contraceptive on serum lipid profile in healthy young women. Sixty subjects were selected. Out of them, thirty



served as control and the rest were as experimental subject. The age range of the volunteers was 20 to 35 years and the duration of pill use was 3 to 5 years uninterruptedly. The mean ( $\pm$ SE) total cholesterol (TC) level of the control and experimental groups were 153 ( $\pm$ 3.87) and 169 ( $\pm$ 4.13) respectively and the mean ( $\pm$ SE) triglyceride (TG) levels were 76 ( $\pm$ 5.13) and 141( $\pm$ 8.85) respectively. Levels of total cholesterol and triglyceride were significantly higher in contraceptive user than those in the control. LDL -cholesterol level was also significantly higher in OC user compared to non-user control subjects. The possible mechanism of raised cholesterol level was no exactly known but most of the workers were on the opinion that it was due to impaired excretion from liver resulting from cholesterol. The findings of the study recommended that prolonged use of oral contraceptive pills were harmful for young women being in relation to cardiovascular diseases

**079. Arefin MS; Arzoo R; Mia MAR; Ali MS; Rukanuzzaman M. A comparative study between the effect of prolonged use of high and low dose oral contraceptives on serum lipid profile in healthy young women. *JOPSOM*. 2000; 19(2): 1-5.**

The objective of the study was to determine the effect of prolonged use of different doses of oral contraceptive combination pills on serum lipid profile in young women through trying both the high and low dose estrogen-progesterone combination pills in different groups of volunteers. The study included 90 volunteer women aged 20-35 years comprising of 30 control women who were not using contraceptives. Thirty experimental subjects were taking high dose combination pills containing 50  $\mu$ g ethanol estradiol plus 500 $\mu$ g norgestrel and the remaining 30 were taking low -dose pill containing 30 ug ethane estuarial pills plus 150 ug levonorgestrel equivalent to 300 ug norgestrel. The duration of pills used was 3-5 years uninterruptedly. The Department of Biochemistry at the Institute of Postgraduate Medicine and Research (IPGM&R), Shahbag, Dhaka conducted the study during 1997 to 1998. Mean serum cholesterol level was elevated significantly ( $p < 0.001$ ) in high dose pill users compared to the low dose pill users. Mean  $\pm$ SE serum cholesterol level of control group was 153 $\pm$ 3.87 mg/dl and that of experimental subjects with high and low doses pill users were 186 $\pm$ 5.48 mg/dl and 152 $\pm$ 4.69 mg/dl respectively. In comparison to control, there was significant ( $P > 0.001$ ) increase in mean serum total cholesterol in high dose pill users; but there was no significant ( $p > 0.1$ ) change in low dose pill users. The mean serum triglyceride rose significantly ( $P < 0.001$ ) in both the high and low dose pill users, but the elevation was more marked in high dose pill users. High dose users also showed raised LDL-cholesterol significantly ( $P < 0.001$ ) when compared with low dose users. Change in HDL-cholesterol was insignificant ( $P > 0.05$ ) in both the groups. The mean  $\pm$ SE serum LDL-C of control was 98 $\pm$ 3.11 mg/dl and that of subjects having high and low dose of OCs were 122 $\pm$ 5.09 mg/dl and 89 $\pm$ 4.6 mg/dl respectively. High dose OCs users have shown significantly ( $P < 0.001$ ) higher LDL-C than those of subjects with low dose OCs users when compared with that of control. High dose oral contraceptives had significant risk for cardiovascular events due to unfavorable alteration in serum lipid profile. It may be concluded that OCs with high dose estrogen and progesterone contents had definite unfavorable effects on serum lipid profile but extensive study with large number of subjects were needed to determine the safe duration as well as proportion of steroids of combination OC pills.

**080. Arends-Kuenning M. Reconsidering the doorstep-delivery system in the Bangladesh family planning program. *Studies in Family Planning*. 2002; 33(1): 87-102.**

This study was undertaken to reconsider the doorstep-delivery system in the Bangladesh family planning program. Longitudinal data from the Maternal and Child Health -Family Planning Extension Project of the International Centre for Diarrhoeal Disease Research, Bangladesh, were analyzed to show that a better strategy might be to target visits to women according to their educational level and area of residence. Although the Bangladesh family planning program had been successful at increasing contraceptive prevalence rates and in lowering fertility, donors considered the program unacceptably, costly and most of the costs are attributable to the system of having field workers deliver contraceptives to women at their doorsteps. Therefore, the Government of Bangladesh had begun to change the program from a doorstep-delivery system to fixed-site delivery. Field-workers continue to be an important part of the service-delivery system, but they might be used more efficiently. Rather than requiring workers to visit only women who currently are not contraceptive users, the government should consider targeting workers visits according to characteristics that include women's educational levels and the economic circumstances of the regions where they live, which were easier to verify and target that was their past contraceptive use. The scope of family planning programs to lower desired fertility was limited. Past studies conducted in Bangladesh showed little impact of workers' visits on fertility preferences, even during the period of intensive visitation schedules in the 1980s and 1990s. The family planning program would continue to play an important role in the lives of Bangladeshi women. However, by allowing them to meet their reproductive goals in a safe manner and by lowering the obstacles to contraceptive use, high rates of contraceptive use were associated with lower abortion rates. Poor women and uneducated women were especially responsive to family planning programs and could least afford to bear unwanted children and therefore in the twenty-first century, the program should be focused to give attention on these women. Researchers made two suggestions: firstly the program should encourage women to switch from non-clinical methods delivered by family planning workers to make more cost-effective clinical methods such as sterilization, and secondly, field-workers should not be re-supplying non-clinical methods, but should be given focused to their attention on motivating nonusers to practice contraception.

**081. Arends-Kuenning M. How do family planning workers' visits affect women's contraceptive behavior in Bangladesh? *Demography*. 2001; 38(4): 481- 496.**

This paper intended to show the workers visits extent significant effects on adoption and continuation of contraceptive use, conditional or other observable characteristics. The study used the longitudinal data from a family planning project of MCH-FP of the ICDDR, B. Longitudinal data showed that past visits are not significant in hazard modules for adoption of contraceptive methods, whereas visits in the current round are significant. Therefore family planning workers visits affect women's contraceptive behavior by decreasing the costs of contraception. Results of contraceptive hazards modules further support their hypothesis. In Bangladesh, family planning workers visits reduce the costs of contraceptive and may increase the demand. If visits increase demand or if workers are targeting their visits past visits by family planning workers should have positive and significant effect on later probabilities of adopting contraceptive methods. The study suggested that the policy makers should keep in mind that the family planning workers visits have the greatest impact on women with the education and women who live in the least highly developed areas.

**082. Bairagi R. Effects of sex preference on contraceptive use, abortion and fertility in Matlab, Bangladesh. *International Family Planning Perspectives*. 2001; 27(3): 137-143.**

The objective of the study was to evaluate the effects of sex preference on contraceptive use, abortion and fertility in Matlab, Bangladesh. Data from the Matlab Demographic Surveillance System were used to investigate the effects of son preference on contraceptive use, abortion and fertility, and trends in these effects over time, in the Matlab Maternal and Child Health and Family Planning Project area and in a comparison area. A modified Arnold Index was used to estimate the increase or decrease in contraceptive prevalence, abortion, and fertility that would occur in the population in the absence of sex preference. The level of sex selective abortion was measured by the deviation from the expected ratio of males to females at birth. Contraceptive prevalence in Bangladesh has been increasing but for the last 6-7 years the total fertility rate has been remained at 3.3 lifetime births per woman. Son preference was thought to be a constraint on further fertility decline. Between the early 1990s and the middle 1990s, contraceptive use and recourse to abortion increased in Matlab while fertility was declined. Method use rose with parity in the project area. A low parity method use increased with the number of sons; among women with three or more children, however, it stabilized or decreased among those who had at least two sons. The abortion ratio increased with parity; within parities, it was generally lowest for women with no sons and was often highest for those with at least two sons and a daughter. In the absence of sex preference, the abortion ratio would have increased by 27% in 1982-1986, by 36% in 1987-1991 and by 55% in 1992-1995 in the project area. Sex preference did not have a strong effect on contraceptive use in Matlab. Its' absence, however, would probably increase recourse to abortion, which was used to limit fertility once couples have the number of sons they desire. The effects of sex preference on childbearing becoming stronger as fertility decline, because couples must achieve their desired number of sons within a smaller overall number of children.

**083. Bairagi R; Islam M; Barua M. Contraceptive failure: levels, trends and developments in Matlab, Bangladesh. *Journal of Bio-Social Science*. 2000; 32: 107-123.**

This study investigated the levels, trends and determinants of contraceptive use failure in Matlab, Bangladesh. It used a set of prospective data on 25,960 women of reproductive age. The data were extracted from the record keeping system (RKS) of Matlab for the period 1978-1994. If there was any live birth during the use of or within months after this continuation of use it was considered as a failure. The life table technique and hazard model were used as analytical tools. The results suggested that use failure for pills, IUDs (TCU 200) and injectables and other temporary methods increased from 1978 to 1988, but began to decline after 1988. The cumulative probability of first methods failure within 1 year of method acceptance of the cohort of 1990-94 acceptors was 12.9 % for pills, 2.0% for IUDs, 0.5% for injectables, and 13.4% for other methods (Sampson, foam, Jelly and traditional methods). For pills, condoms and other methods, the likelihood of failure increased overtime, peaking at 3 years of use, the quality of community health workers (CHWs) performance was associated with the risk of failure of all temporary methods except condom, women's background characteristics associated with failure varied by methods. The effect of the quality of CHWs performance and the back ground variables on failure did not change much overtime. It was felt that contraceptive failure deserves the serious attention of programme managers and policy makers to make the Bangladesh national family Planning Programme more successful.

**084. Barkat A; Howlader SR; Rob U; Piet-Pelon NJ; Chowdhury SNM; Hossain SMI; Bhuiya I; Siraj-us-Saleheen. Implementation of ICPD programs in Bangladesh: changes in policy, program and actions. Dhaka: Population Council and UNFPA, 1999.**

This paper was written to make effort to look at the process critically to evaluate what could be an influenced in Bangladesh and to what extent in the next. The paper had adopted the simple analytical method, following Joan Robinson, and as such conducted the analysis based on intensive observation of the crucial changes, the rough review of the official papers documenting the processes of changes and extensive interview of the selected people involved in the process specially those who participated at Cairo Conference and those who are currently the senior policy makers and program managers. The POA contains package of policy prescriptions on 4 major issues: sustainable development, women empowerment, reproductive health and equality and equity. The review process indicated that radical changes occurring in the family planning and health service program are not result of ICPD. Evidence suggested that ICPD did provide encouragement to the on-going process in the family planning and health sectors. Though the family planning and health sectors, particularly since individuals in the delegations leading in the change process at home. Some stake holders' informants expressed concern, however the ICPD might have one negative impact on Bangladesh, and population had been increased. Finally while ICPD was not primary influences on the new directions of the Bangladesh program, the forums which led to it and followed since, have been useful. These were afforded an opportunity to share the Bangladeshi experiences-its success in improving the health of women; and its effective use of NGOs in all levels of the program. Perhaps the great influence of international conferences was not in the documentation produced, even when it was as comprehensive as the programme of action of ICPD, but rather in the opportunity these afford for countries and individuals in delegations to listen and learn from one another. The review recommended that for successful implement the strategy the health and family planning workers at all levels will need to blend their skills and work together, and mobilize relevant resources available in the other sectors and enlist proactive support from the civil society including the NGOs and development partners.

**085. Barkat-e-Khuda; Roy NC; Rahman DMM. Family planning and fertility in Bangladesh. *Asian-Pacific Population Journal*. 2000; 15(1): 41-53.**

The objective of this article was to look at the trends in contraceptive use and fertility levels in Bangladesh from 1975 to 1997 and to examine the major factors affecting contraceptive use and fertility. National level data have been used for the 1975-1997 period. For the multivariate analysis of the determinants of contraceptive use and fertility decline, data from the 1993/94 and 1996/97 BDHS have been used. A total of 9,640 and 9,127 eligible women respectively were interviewed. In this study only currently married women of reproductive age (8,842 and 8,306) were considered from the 1993/94 and 1996/97 BDHS. The sharp increased in contraceptive prevalence has led to an appreciable decline in fertility with the total fertility rate dropping by half from 6.3 in the period 1971-1975 to about 3.3 in the period 1994-1996. Except for the 15-19 years age group, fertility declined substantially in all other age groups, especially among women aged 35 years and older. The probability of contraceptives use rose significantly with age up to 39 years, and then declines. Also, the probability of contraceptive use rose with the number of children born before the reference period and declines with five or more children. The probability of contraceptive use is significantly higher among women reporting spousal communication. The probability of contraceptive use rose significantly with education. The probability of contraceptive use was higher among non-Muslims than

Muslims among women belonging to households having electricity than those without and among women were living in urban areas compared with women were living in rural areas. There appears to be little or no effect of landholding status on contraceptive use. For further acceleration in contraceptive prevalence and fertility decline would require major efforts directed at improving women's status, increasing access to the media and improving programme efforts in the low performing divisions. The Government of Bangladesh should aim not only at consolidating the level of success, it has already achieved in the family planning sector but also at further strengthening the programme by making family planning as part of the broader reproductive health service package. The Government should also attach greater priority to development in the social sector, including enhancement of women's status, especially through increased female educational and employment opportunities and improved access to the media.

**086. Barkat-e-Khuda; Roy NC; Rahman DMM. Unmet contraceptive need in Bangladesh: evidence from the 1993/94 and 1996/97 Demographic and Health Surveys. *Asia-Pacific Population Journal*. 1999; 14(2):37-50.**

The objectives of this analysis are to examine (a) the extent of unmet need in Bangladesh and (b) the differentials in unmet need by selected characteristics of the respondents. The analysis is based on data from the 1993/94 and 1996/97 Bangladesh Demographic and Health Survey (BDHS), which employed nationally representative, two stage sample of 9,640 and 9127 eligible women (ever married and aged 10-49 years) respectively. In this analysis the dependent variable unmet need includes pregnant women whose pregnancy was mistimed, amenorrhea women whose last birth was mistimed. In addition to data on the dependent variables were used on several independent variables namely education, age, religion, place of residence, husband wife communication, number of living children etc. The findings of the study revealed that according to the 1996/97 BDHS, half of the currently married women in the reproductive age groups do not want any more children; p percent of those women were sterilized. More than one third (36%) of those women wanted to have a child not some time in the future however most of those women (22% of all married women) would like two or more years before having their next birth. Only 13% wanted to have a child soon, 3% were undecided about whether they want another child. This was the great majority of women wanted either to space their next birth or to limit their child bearing altogether. These women can be considered as having a potential need for contraception. In the 1993/94 survey, it was highest among women in Chittagong and Barisal divisions (28% and 20% respectively), in the 1996/97 survey it was highest in Chittagong and in the newly formed Sylhet Division (21% and 33% respectively). Unmet need for contraception was lowest among women in Rajshahi and Khulna Division (14-16 and 12 percent respectively) in both surveys. Unmet need was slightly lower among women with some secondary schooling than among those with little or no education. No significant difference was found in unmet need among educated women and their uneducated counterparts in the 1996/97 survey. However there were statistically significant differences by education in the 1993/94 survey. The survey recommended that the program should be further strengthened and intensified in Sylhet and Chittagong Division where unmet need is highest, the program should attach high priority to address the needs of these women by appropriate IEC measures and selective home visits.

**087. Begum N; Chowdhury SA; Haque MM; Chowdhury MRI; Islam MN. Acceptance of injectable contraceptive among contraceptive users in a selected family planning clinic. *JOPSOM*. 2002; 21(1): 31-36.**

The objective of the study was to find out the acceptance of injectable contraceptives among contraceptive users. This cross-sectional study included 125 respondents of Mohammadpur Fertility Service and Training Centre. Information was collected from the respondents by face to face interview through pre-tested questionnaire. The study was conducted at Mohammadpur Fertility Service and Training Centre under the Department of Community Medicine, National Institute of Preventive and Social Medicine (NIPSOM), Mohakhali, Dhaka. The study period was from March to June 2002. It was found that out of 125 respondents, 36% were between the age of 25-29 years and 80% of the respondents were between 20-34 years. Only 0.8% of the respondents belong to age group of 15-19 years and more than 45 years. The respondent's mean age was 28.88 years. It was found that 44.8% respondents had primary level of education, 48% were illiterate and 5.6% had S.S.C and 1.6 had higher level of education. Nearly 61% of the respondents were using injectable contraceptives and 39% were using other methods (Norplant, Oral pill, Copper-T). The injectable contraceptives were mostly (63.16%) used by illiterate women. There was significant association ( $P>0.05$ ) between the choice of injectable contraceptives and illiteracy of the respondents. Injectable contraceptives were mainly used by the women having 2-3 (54.4%) living children and average living children were 3 with the mean age of last child was 3.5. Majority (52.6%) of the respondents were using injectable contraceptives due to high efficacy, 32.9% were using because it was taken at a regular 3 months interval and 14.5% were using it for its reversible action. It was observed that 73.7% respondents have been using injectable contraceptives for less than two years and 26.3% of them have been using injectable contraceptives for more than one or equal to 2 years. Results of the study indicated that the rate of acceptance of injectable contraceptives was high and majority of the contraceptive users were illiterate and have low socio-economic status. So, if more emphasis is given to motivate the community people especially the family planning acceptors. There would be a substantial increased in injectable contraceptive acceptors.

**088. Bhuiyan RH; Rahman QM; Kabir H; Jaha NK. Birth planning process in rural Bangladesh. Dhaka: NIPORT, 2005.**

The intention of the research was to study the birth planning process in rural Bangladesh. In order for the study data were collected using both quantitative and qualitative methods. Specially, information was collected through in-depth interview using semi-structured questionnaire. Five field survey teams were deployed for data collection. Each team was consisted of 1 male and 1 female supervisor, four investigators. The results of the analysis indicate that average age of the respondents was 24.9 years. About 71% of them are Muslims and 26.3% were Hindus. All the respondents were married. About 45% of the respondents knew the govt. rules on marriage. Most of the respondents mentioned that first birth after marriage should be at least after two years of marriage and about 21% mentioned that this should happen as soon as possible. About 90% of the respondents knew at least two modern methods of contraceptives. Most known contraceptives were oral pills. About 84% of the pregnancies ended in live births and the rest were either abortions or miscarriages. More than 60% of the mothers had very little knowledge about problems during antenatal period. Hardly any plan was made for setting treatment in case of problems. A majority (67.6%) of the women had very little idea about problems during delivery. In largest majority (80%) of the

case the family members used local transport and in 16% of the care they used ambulances. The women reported to have faced lots of problem in getting immediate services due to long waiting time for admission in the clinics/hospitals, non-availability of doctors in time, extra demand of money for treatment care etc. So it is recommended that field workers should pay regular visits to the eligible women to motivate them to more effective methods of contraception., trained field workers should regular visit to the women who are likely to be pregnant, pregnant women and women recently delivered and should have group discussions with concerned women husband and near relatives about steps in case of problem. Hospital management should be improved. Educational plan be developed for concerned persons so that they may be able to get nearly to arrange finance and transport prior to development of problem.

**089. Caldwell JC; Philips JE; Barkat-e-Khuda. The future of family planning programs. *Studies in Family Planning*. 2002; 33(1): 1-107.**

This article was written to provide an overview of the issues bared partly on the selection of family planning porgram of different developing countries or sub-Sahara African countries and partly on the Discussions that took place in the conference held in Dhaka January 2000. National Family planning programs have been an important instrument in accelerating global fertility decline and in restricting ultimate world population to a level probably below ten billion. The archetypal programs were instituted in Asia and North Africa. The end of the twentieth century is an appropriate half way work at which to evaluate the twentieth century programs and to assess what changes in then will be needed for the twenty first century. Beginning of the new century, ICPD's target of providing high quality reproductive health services for all by the year 2015 would require huge increases in expenditures. International assistance was given in providing contraceptives which covered 41% of their cost from 1992 to 1996, declined by 24% between 1996 and 1999 (UNFPA 1999). Therefore funding difficulties endangered both the continuing fertility decline and movement towards the kind of reproductive health services demanded at the 1994 Cairo Conference. One way that national program could meet the situation by aiming at greater efficacy. A preview example of the problem and its possible solution came from the Bangladesh national family planning programs. In the 20 years prior to the early 1990s, Bangladesh had almost halved of its total fertility rate from 6.3 children per women to 3.3 children. It is the poorest country that has achieved by ICDDR, B and had included at least intentions regular visits to every household in the country by government family planning workers. The cost had been high, and an unusual large proportion of all costs had been met extreme mostly by the World Bank. It was clean by the end of the twentieth century that the level of support would not be sustained. The obvious way to cut costs was to reduce the expenditure supporting household visits. Originally, the door-step delivery system was praised on the grounds that it overcomes the structures through contact with women in their own homes whereby they were brought into the modern world of family planning. The study here concluded that home visits had been successful and their abolition could have a serious impact on the program at a time when contraceptive prevalence had reached a plateau.

**090. Chawla D; Sarley D; Scribner S; Berg R; Balal A. Bangladesh: contraceptive market segmentation analysis- final report. Dhaka: JSI Deliver, 2003.**

The objective of this study to analyze the market segmentation and to help identify opportunities for improving resource allocation in family planning in favor of promoting

contraceptive security. The study took place in 2003 as a collaborative effort between Commercial Market Strategies (CMS). The study used the most recent BDHS and supplemented this survey by collecting quantitative and qualitative data with the help of Data International of Dhaka. There was a widening gap between the demand for contraceptives and the available government and donor funding for contraceptives procurement. The average life expectancy at birth increased from 46 years in 1974 to more than 60 years in 2000. During the same period, the total fertility rate declined from 6.3 to 3.3, and contraceptive prevalence increased from 8% to 54%. These achievements had prompted to observe citing of Bangladesh as a family planning success story. A symposium hosted by the Ministry of Health and Family Welfare (MOHFW) in June 2002 highlighted that in 2002 the country met 84% of its contraceptive requirements through donor subsidization 16% through a World Bank loan. The method mix in Bangladesh has shifted from long-term and permanent methods to less cost-effective, short-term methods in terms of procurement and commodity costs and less effective traditional method. In many countries limited resources for family planning was a primary obstacle to contraceptive security. Sources of funding for family planning include government, donors and the private sector. The GOB contributed significantly to the national family planning program. The present study relied on data from the Bangladesh Demographic and Health Survey (DHS) 1999-2000. The asset-based wealth index, developed by ORC macro and the World Bank, was used to classify currently married women of reproductive age according to socio-economic status. Contraceptive use was relatively low among younger married women only 25% in the age group 10-14 years use any form of contraception, but increased with age, reaching the highest level of 68% among currently married women in the 35-39 years age group and falling to 43% among currently married women over 45 years of age. The most commonly used contraceptive method was pill, which was used by 43%. Injections were a distant second, used by only 13%, followed by female sterilization 12%, periodic abstinence 10%, condoms and withdrawal (both 8%) other methods including Norplant and lactation amenorrhea 3% IUD 2% and male sterilization 1%. Market segmentation would require effective collaboration and partnership among public and private stakeholders. This study would contribute to participatory process so that the role for the various sectors could be developed to ensure contraceptive security in Bangladesh.

**091. Gazi R; Mercer A; Khatun J; Islam Z. Effectiveness of depot-holders introduced in urban areas: evidence from a pilot project in Bangladesh. *J Health Popul Nutr.* 2005; 23 (4): 377-387.**

This evaluation study was carried out to: (i) establish a baseline for measuring the impact of activities of depot holders on a comprehensive evince of indicators in the long term, (ii) make a preliminary assessment of the impact on the use of selected services of the essential services package (ESP) and other indicators at the end of the part of phase, (iii) assess the cost of introducing depot holders and running their activities for a year. Data were collected from the baseline and end of pilot household surveys, together with service statistics from the intervention and comparison areas, were used for assessing the changes in clinic use and commodity distribution. The results of the study evidence that the depot holders transferred knowledge to women in the community, provided services, and referred women to clinics run by non-governmental organization (NGOs). The household surveys showed that the proportion of women who had considering from a depot holder about family planning, had received information on antenatal care, tetanus toxoid (TT) vaccinations and ARI, had been referred to a satellite clinic for child immunization, or supplied with ORS and contraceptives



was also the highest in Sherpur. There was a large increase in the distribution of pill cycles and ORS package in Brahmanbaria and in Dhaka. In all cases a decrease in clinic supply was more than offset by the new distribution by the depot holders. The proportion of condoms pill cycles and ORS packets distributed by the depot holders in the intervention years were 55%, 37% and 22% respectively in Sherpur, 41%, 25% and 97% in Brahmanbaria and 37%, and 84% in Dhaka. In fine, the study suggested that further evaluation should assess the quality of their services, a wider range of indicators of use and coverage of services, poverty focus and cost effectiveness.

**092. Gray A; Chowdhury JH; Caldwell B; Al-Sabir A. Coitus dependent family planning methods: observations from Bangladesh. *Studies in Family Planning*. 1999; 30(1):43-53.**

The aim of this report was to examine the source of these inconsistencies as revealed in the interviews. The data for this study were obtained from field research conducted to investigate aspects of the use of traditional methods of family planning in Bangladesh, defined here as including the safe period method, withdrawal, and the use of kabiraji preparation supplied by profession of a form of traditional healing. The study was conducted in comparison areas for the MCH-FP Extension Project (Rural) of the ICDDR,B. The sites were Keshabpur and Bagharpara Thanas in the west of Bangladesh, near Jessore and Satkania of Chittagong. The study was planned to include 150 case studies, with in-depth interviews of six categories of women and their husbands. Results of this study were that only 128 matured couples were interviewed because the patterns of some respondents could not be contracted. Excluding four cases of pregnancy, 71 instances both the man and the woman either agreed that they were not using any method of family planning or they agreed about the method or methods they were using (in 52 instances). While the survey was being conducted, the male and female interviewing teams commonly reported hearing different stories from the partners they were questioning. In the case of couples who used IUDs and injectables a majority of both female and male users agreed with their partners about their use of these methods, which is not the case for users of any of the coitus dependent methods, including condoms. Men and women using a combination of coitus dependent methods of family planning often do not say that they are doing so when they are first interviewed or they do not mention the same combination of methods. The main implications of this findings is that identifying what methods of family planning that an individual is using, it is far more difficult than in commonly recognized, particularly for coitus dependent methods. Finally, the coitus-dependent methods discussed here should also be considered as prominent members of the group of family planning methods that requires male involvement.

**093. Haider SJ; Ferdous S; Chowdhury SS; Rahman H. Identify ways and methods for popularization of sterilization methods. Dhaka: NIPORT, 2006.**

The objectives of the study were, the socio-economic and demographic characteristics of sterilization acceptors and non-acceptors, ascertain the sources of information and influence for acceptance of sterilization, assess the decision- making process and nature motivation of acceptors and prospective clients for accepting sterilization, investigate the referral system and cost for sterilization, formulate policy recommendation about appropriate ways and methods for popularization of sterilization methods. The study followed a cross sectional statistical design, to obtain information from the primary, secondary and tertiary sources applying both quantitative and qualitative investigations. For the acceptors of sterilization under each

division, samples were selected initially selecting the clinical institutions providing male and female sterilizations in the urban. The female acceptors estimated that about one third (31%) of the target audiences are currently aware of the method about one fifth (22%) support the method; and according to them less than one tenth intend (7%) and accept (4%) the method ultimately. All the samples covered by the current study confirmed their acceptance of the method and 100% also affirmed that they did not experience pregnancies during post sterilization period and almost 100% expressed satisfaction about the method. It has made enhance awareness on sterilization through door to door visit and mass media publicity: 40-58%, remove superstitions and religious beliefs negatively influencing 4-14% and unconcerned 19-29%. The recommendation by the beneficiaries, the service providers also emphasized on strengthening community mobilization and advocacy programs to popularize sterilization and the service centers: Doctors (24%), Paramedics (28%) and field workers (27%).

**094. Hanifi SMA; Bhuiya A. Family planning services in low-performing rural areas of Bangladesh: insights from field observations. *J Health Popul Nutr.* 2001; 19(3): 209-214.**

This paper mainly reported the results of an observational study carried out during 1994-1995 in five rural unions of Bangladesh to identify the barriers to adoption of family planning methods. Data for this study were obtained from five study unions of the Chakaria Community Health Project (CCHP) of ICDDR,B. At the time of the survey, one-fifth of 1889 mothers with a living child, aged less than five years, were practicing modern family planning methods. Of the methods used, oral pill was the most common (50%), followed by injectables (20%), female sterilization (13%), IUD (11%) and condom (4%). Various factors that were responsible for the low performance of the family-planning programme included: inadequacy of motivational work by the field workers, poor counseling on the management of contraceptive-related side-effects, inadequate response to the needs of clients, irregular field visits, and poor supervision and monitoring. The efficiency of the programme needs to be improved to meet the demand for family planning methods in Chakaria, Bangladesh. The findings of the paper suggested for taking initiative to conduct further study on the areas of motivation of family planning workers, regular door step visitation, supervision and monitoring etc.

**095. Islam A; Chakraborty N. Projected contraceptive commodity requirements 2000-2015. Dhaka: JSI & USAID, 2001.**

The objective of the current set of projections are the evaluate the projection of commodities proposed in 1999, update the projected requirements based on the most recently conducted survey, BDHS 1999-2000 and to propose the projected number of contraceptive commodities for the stipulated time. The study employed the Fan, Plan model developed by the futures groups and the research Triangle Institute (Chao 1993). The inputs of the model have been modified and the projections are performed in three stages. In Scenario I, the study revealed the number of acceptors of longer-acting methods, Norplant and intrauterine devices (IUD), will increase from 0.051 and 0.189 million in 2000 to 0.069 and 0.257 million in 2005 and 0.096 and 0.358 million in 2015 respectively. The actual number of acceptors of Norplant and IUDs during July 1999 to June 2000 are 0.046 million and 0.138 million, respectively. In Scenario II, the study showed- the number of acceptors of Norplant is expected to increase from 0.078 million in 2005 to 0.217 million in 2015. Similarly, clients of male and female

sterilization will increase from a modest 0.045 million and 0.082 million in 2005 to 0.108 million and 0.271 million in 2015, respectively. In Scenario III, it is assumed that the momentum for the shift in method mix favoring longer acting and permanent methods will start to work beginning in 2005. The new Norplant clients will increase from 0.051 million in 2000 to 0.166 million in 2015. The IUD clients will increase from 0.189 million to 0.497 million and the clients of male and female sterilization will increase from 0.031 and 0.051 million in 2000 to 0.166 and 0.331 million in 2015 respectively. There will be a 5 percent increased need in 2005, 10 percent in 2010 and 15 percent in 2015 for condoms to combat sexually transmitted disease. This report suggests that if programmatic inputs are provided to increase the number of acceptors of longer-acting and permanent methods, then the projected requirements can be modified based on trends in service statistics data during subsequent years.

**096. Islam MA; Padmadas SS; Smith PWF. Men's approval of family planning in Bangladesh. *J Bio-Social Science*. 2006; 38: 247-259.**

This article was intended to evaluate men's approval of family planning in Bangladesh using the couple of data set from the recent Bangladesh Demographic and Health Survey (BDHS) 1999-2000. Data were used in this study from the couple data set based on the 1999-2000 BDHS. The couple data set was generated by linking spouse from the data set consists of the sample of 2556 currently married men aged 15-59 years, and those from the female data set, a sample of 10,544 ever married women aged 10-49 years. The factors influencing men's approval of family planning examined in the bi-variate analysis were considered in the binary logistic regression and multinational logistic regression models. Analysis of BDHS data showed that about 85% of the wives reported that their husbands approve of family planning, which was lower than the wives own approval rate (95%). Using the couple data set, husband characteristics were matched to the wives responses on family planning approval. Results from the regression analysis revealed that age, education, seeing the TV, spouse-communications, current use of family planning and the number of living children significantly determine family planning approval among both men as well as couples. Family planning approval was found to be such lower in Sylhet than other five administrative Divisions. For a better understanding of couple contraceptive attitudes, individual responses are needed both from the women and her husband. The study results indicated the need for careful evaluation of the DHS questions in order to measure appropriately men's family planning attitudes. Therefore, effects are needed to educate men with proper contraceptive knowledge and attitudes for their overall active participation in family planning.

**097. Islam MM. Small area estimation methods with application to contraceptive prevalence rates in Bangladesh. *Demography India*. 1999; 28(2): 167-178.**

The objectives of the study were to provide an overview of two selected indirect methods of small area estimation- the synthetic estimation procedure and the regression-based procedure. The application of these methods have been illustrated for estimating Contraceptive Prevalence Rates (CPR) of 60 districts (which here defined as small area) of Bangladesh. The results were then compared with the direct estimation procedure. This study utilized data extracted from the 1993-94 Bangladesh Demographic Health survey (BDHS). Some auxiliary information was also obtained from the 1991 census. The study first obtained direct estimates of the CPR and then compared them with the indirect estimates. Direct estimation of contraceptive prevalence rate (CPR) was defined as the ratio of the weighted number of

women who were using contraceptive methods in an area to the weighted number of currently married women of age 10-49. All the methods considered in this study provided consistent estimates (the larger the number of PSUs in the area, the better the estimate). Of the three methods considered to obtain the CPR, the regression method was found most suitable. It overcame almost all the difficulties of other methods of small area estimation. Most of the regression estimates have smaller relative errors than that of direct estimates. Unlike the synthetic estimation procedure, no auxiliary data were needed in regression approach and the assumption of homogeneity was not required. In this approach, more than one auxiliary variable i.e. all the variables related to the study variable can be used at time. This has introduced one more advantage to regression method. Another advantage of regression method is that in this method there is no scope of baseness. The regression method allowed for estimates of sampling errors while the standard synthetic method did not allow. So, finally the findings declared of the three methods used to estimate contraceptive prevalence rates for districts (small area), the regression method was found most suitable.

**098. Jasim-uddin M; Ashraf A; Sirajuddin AKM; Mahabub-ul-Alam; Tunon C. Incorporation of community's voice into Health and Population Sector Programme of Bangladesh for its transparency and accountability. Dhaka: ICDDR,B, 2001. (ICDDR,B working paper; no. 148).**

The study was intended to assess the implementation processes of stakeholder committees, an effect of the committees, especially participation of ESP users in incorporation of community's voice into HPSP to establish transparency and accountability in the programme. Four of 9 Thana and six of 16 union committees from three divisions of Bangladesh were purposively selected. Data were collected through in depth interviews of committee members, Thana managers, and service providers of MOHFW, focus group discussions (FGDs), interviews of ESP users and review of records. Four teams, each with four trained researchers including one female, collected data in October 2000. The findings of the study stated that the members of the stakeholders committees themselves developed the terms of reference (TOR) and seventy percent of the members were aware of the major issues of TOR. All the members considered the TOR appropriate. Over 90% of the planned meetings of committees were held with 90% attendance. Ninety two percent of the committee members reported that they had an equal scope to get themselves involved in activities of the committees, and the opinions of members were respected. Most health service uses in FGPs reported that there were improvements in cleanliness, waiting arrangement, waiting time, and service providing hours at the health centers after the formation of committees. About 60% of both male and female members were aware of the HPSP, and half of them could explain the NID. The female members were knowledgeable about the EPI sites as a place for vaccination of children aged less than 5 years and tetanus toxoid (TT) for pregnant women and satellite clinic (SCs) as a place for serving pregnant mothers. Seventy-eight percent of the male members and 23% of the female members reviewed sexually transmitted diseases (STDs) as a bad disease. Sixty-percent of Thana committee members had higher secondary grade education, and it was 22% among the union committee members. The MOHFW has to develop a mechanism how the CGs can be merged with the stakeholder committees. The baseline information of comparison area issues need to be considered in designing futures interventions, and also the role of NGOs in facilitating the stakeholder committee activities need to be well defined.

**099. Kamal N. Inter-spousal communication on family planning as a determinant of the use of modern contraception in Bangladesh. *The Journal of Family Welfare*. 1999; 45(1): 31-42.**

This paper attended to investigate the effect of inter-spousal communication on the use of modern contraception in Bangladesh and other socioeconomic and demographic variables. Data used for the study was obtained from the 1993-1994 Bangladesh Demographic and Health Surveys (BDHS). This was a two-stage survey. In the first stage a total of 304 primary samples were chosen and in the second stage, 25 households from urban clusters were selected. Bivariate and multivariate analyses were used in this study. The findings showed that the respondent's age, number of living children, educational level, possessions, type of residence and mobility showed significant associations in relation to the use of both modern reversible methods and sterilization. It also showed that users of modern reversible methods showed a significant association with both satellite clinics and health centres after controlling for selected socioeconomic and demographic variables, inter-spousal communication was the most significant determinant of the use of modern reversible methods in Bangladesh. Women who had at least one child were also more likely to use modern reversible methods as compared to those who had no children. The age pattern of use was also an inverted U-shape. Young women below 19 years of age showed low use of modern reversible contraceptives and those between 20-40 years of age showed higher use, which declined after the age of 40. The findings of the study suggested some recommendations, e.g. i) Targeting couples for discussions instead of the wives alone may enhance male involvement in family planning; ii) Male clubs may be set up where satisfied users can narrate their experiences and male family planning workers can conduct motivational campaigns; iii) The services of the health centres and satellite clinics need to be improved; iv) The emphasis on female education and empowerment needs to be obtained; v) The infrastructure in remote areas needs to be strengthened; vi) The special measure may set up by the govt. to promote the use of male methods specially reversible method, and their roles need to be further assessed in detail; vii) Finally, it may be introduced a system similar to that of Indonesia - the Govt. may take steps to have the prospective bride and groom visits the health workers before the marriage documents in registered.

**100. Kamal N. The Influence of husbands on contraceptive use by Bangladeshi women. *Health Policy and Planning*. 2000; 15(1): 43-51.**

The objectives of the study were to investigate the role of husband's approval of family planning (as perceived by the women) on a woman's contraceptive use in Bangladesh and other socioeconomic and demographic factors. The study used data from the 1993-94 Bangladesh Demographic and Health Survey (BDHS). This was a two stage nationally representative survey. This study evaluated the woman's perception of her husband's approval of her family planning on her current and future use of modern contraception, after controlling for selected socioeconomic and demographic factors. While most husbands support family planning, contraceptive use among those whose husbands do not approve of family planning is much lower. In some areas of Bangladesh, however, husband's disapproval for family planning is still a major deterrent factor for women's fertility control. In this study, among those who are currently not using any method, 74% reported that their husbands approve of family planning. However, when husband do not approve, women are unlikely to use modern contraception in the future. As husband's approval does appear to be a major determinant of contraceptive uptake in similar developing countries in the region, more

effective male targeting may be necessary for maintaining the success of the family planning programme in future.

**101. Karim AM; Ahmed S; Sobhan F; Faisal AJ. Developing strategies for improving the quality and performance of clinical contraceptive services: a review. Dhaka ICDDR,B, 1999.**

The study was carried out to assess the strategies for improving the quality and performance of clinical contraceptive services. The study data were collected through field survey, interviews and seminars and discussions across the country. The study found that the contraceptive prevalence rate had rose six fold from 8% in 1975 to 49% in 1996-97 while the total fertility rate had declined from 6.3 to 3.3 during this period. Over the past three years Bangladeshi couples in the reproductive age group had been relying more on short term method such as pills and injectables. The unmet need is 13% among the married women aged 30-49 years. The method discontinuation rate remained still high. The studies conducted in Bangladesh revealed that both supply and demand side factors were largely responsible for the poor performance of rational family planning clinical services. On the demand side, certain social barriers to clinical contraception exists in rural Bangladesh where family planning is considered to be some ways sinful on the supply side, the specific barriers to clinical contraception include: poor staff motivation, weak supportive supervision, lack of technical competence, proper screening, counseling and supplies and ineffective behavioral change communication (BCC). Safe sterilization procedure was not still widely available. Availability of Norplant services is limited and now under gradual expansion to all the thanas of the country. The government culminated fixed targets for the field workers and per case payments to referral agents, and made temporary methods more easily available to improve client choice and promote volunteerism. Also there were perceived side effects of male sterilization, and many couples still believed that vasectomy causes loss of weight, sexual desire and the ability to work. The future measures should be needed to develop strategies to remove the existing barriers to solve the problem of method discontinuation, improve side effects management and referral linkage with high level institutions. Religious beliefs and social norms should also be addressed. Availability of technically competent staff and modern medical supply facilities should also be ensured.

**102. Karim SMJA. Review of the activities of family welfare/population control in the fifth five year plan: role of planned population in development. *Bangladesh Lok-Proshashon Patrica*, 2002; 6<sup>th</sup> Years Issue.**

This article intended to highlight the concept planned population growth, and economic developments, significance or implication of population growths, aims and objectives related to policies, strategies and programmes regarding family welfare and population control, in the light of the FFYP, roles of non-government organizations to build a planned family have also been discussed in this article. In order to intensively understand the problem, analysis of all available relevant documents and review of the Report of FFYP were the main methodological tools to come up with a comprehensive analysis and drew conclusion. In this article, the future challenge that may have to face to build a small family and also probable way of overcoming this challenge was also discussed in this article. By reviewing FFYP, this article showed that over population leads to serious adverse consequences for the overall development of Bangladesh. For preparing a wealthy economical development plan, it is much needed the projection of total population and theirs needs. According to the study mostly adverse effects

of increasing population take place in social aspect, then followed by health sector, for the increasing density of population will implies extra pressure on land. Population sector policy option and strategies of FFYP has given the population and family welfare program as top-most priority, followed by reproductive health services, contraceptives uses, initiatives to include NGOs, decentralized of power, encouraging community in participation, planning, and in implementing process, for population control process local government and leader including religious leader will be included. In this article, it had described how the strategy could be achieved. In FFYP the population activities had been divided into seven criteria such as RH for mother and child's perspectives, IUEC, training and HRD, infrastructure development, research, evaluation and training etc. The article also had described the specific activities to implement the program. The FFYP recognized the role of NGO sector and private sector for contributing in population control program. The study findings recommended that only Government can overcome the challenges with out the participation of all citizens of the country.

**103. Khanam R; Hossain SAS; Sarker S; Musa SAJ; Routh S. Meeting additional health family planning needs of clients by addressing missed opportunities: an urban experience. Dhaka: ICDDR ,B, 2002. (ICDDR, B working paper; 152)**

The result of the evaluation indicated that the intervention succeeded to meet about 45% of the unmet needs of the clients relating to family planning, reproductive tract infections (RTIs)/STDs, expanded programme on immunization (EPI)/acute respiratory infections (ARIs), diarrhoeal diseases, and tetanus toxoid (TT). Most clients (90%) were satisfied with the new service-delivery approach and behavior of the providers. The screening algorithm helped detecting up to 18% of the cases of missed opportunities during the study period, and about 45% of them were tapped in the clinic. The success of the one-stop service-delivery system largely depends on the availability of integrated services in a facility and their optimum use by clients. The result of this study showed that it was possible to optimize the delivery of integrated essential health and family planning services in the urban primary healthcare clinics through introduction of an effective strategy for tapping the missed opportunities. All the concerned managers opined that it must be included as an integral part of the ESP service-delivery strategy. The results of the present study suggested that the need for further research on other important question on urban ESP delivery, such as an ideal package of services and logistics that could support identification and tapping of missed opportunities, an appropriate management information system (MIS) to record and report additional services, effective mechanisms for supervision and coordination to support identification and tapping of missed opportunities.

**104. Khan MA; Khanum PA. Influence of son preference on contraceptive use in Bangladesh: future fertility would decline if son preference were diminished at the earlier stages of family formation. *Asian-Pacific Population Journal*. 2000; 15(3): 43-55.**

The objective of the study was to examine the effect of son preference, if any, on contraceptive use in order to gain an understanding of how it affects the fertility behaviour of Bangladeshi women. The data for this study were obtained from the 1996-97 Bangladesh Demographic and Health Survey (BDHS), which was the most recent and most comprehensive of all the national surveys conducted in Bangladesh. The BDHS is part of the world wide demographic and health surveys BDHS programme which collects information on a number of areas such as demographic characteristics, reproductive history and family

planning. The survey was conducted during the period from November 1996 to March 1997, under the authority of the National Institute of Population Research and Training (NIPORT), Bangladesh. The study revealed that the socio-demographic characteristics of currently married women aged 12-49 years (N=6,996) who had at least one child and were not currently pregnant. On average, the study participants were 30.3 years old and had 3.1 children. The overwhelming majority of them were Muslim (88.3%) and from rural areas (82.2%). Almost two thirds of the participants did not have any cultivated land. More than half of them did not have any formal education (54.1%); however, less than half of the husbands had no education (43.6 percent). Although all currently married women reported that they knew about at least one method of contraception, only 57% of the study participants who had at least one child were currently using contraceptive methods. Contraceptive use was significantly associated with the number of surviving children and demonstrated a curvilinear relationship. Multivariate logistic regression analyses were conducted to assess the net effect of son preference on the use of contraception by currently married women after allowing for potential cofounders. The most important policy implication from the findings of this study is that future fertility would decline if son preference were diminished at the earlier stages of family formation. As son preference is largely socio-cultural, its effect should not be underestimated in a traditional, poor society such as in Bangladesh where women are considered to be of low status.

**105. Khan ME; Hossain SMI; Rahman M. Introduction of emergency contraception in Bangladesh: using operations research for policy decisions. Dhaka: Population Council, 2004.**

The study was initiated to assess the acceptability and feasibility of providing emergency contraceptive pills (ECP) as a back up support to existing family planning methods. The study was implemented in 12 health clinics in two districts of Bangladesh. Among the 12 clinics, eight were interventions clinics, while the remaining four were control clinics. The intervention, which consisted of the provision of information and services on ECP, was provided for nine months from March 2001 to November 2001. The study tested the relative effectiveness of two alternative service delivery models for providing ECP. Two deliveries were: i) first study group (on-demand); ii) second group (prophylactic). The study demanded high acceptability of ECP. About sixty-five percent of the women, who were aware of ECP, did not want any children in the immediate future and had unprotected intercourse, reported use of ECP. Among the two delivery models tested, the model providing ECP as a prophylactic was far more successful in meeting the needs of the clients for ECP than the model which provided ECP on-demand after unprotected intercourse occurred. In the former case, 75% of the clients in need, reported use of ECP as compared to 47% in the latter case. Logistic regression showed that the chance of ECP use was five times higher in the prophylactic area than in the two on-demand area. This multivariate analysis further revealed that programmatic variables were the key factor in determining the use of ECP. The study also revealed that if ECP was used correctly, the success rate in avoiding unwanted pregnancy was extremely high (99%). It dropped to 90% if ECP was used incorrectly. Among those who did not do anything after unprotected intercourse, 13.4% became pregnant. Thus, correct use of ECP was found as the key factor in avoiding pregnancy from unprotected intercourse. It was also estimated that ECP could reduce abortion by 37%. The positive findings of the study have helped the MOHFW, Govt. of Bangladesh, to approve introduction of ECP in the National Family Planning Program. It has been decided that all the providers including out reach



workers will dispense the method and the client will be charged Taka 8 per on packet of two pills of ECP.

**106. Levin A; Caldwell B; Barkat-e Khuda. Effect of price and access on contraceptive use. *Social Science and Medicine*. 1999; 49: 1-15.**

This article was written to examine the importance of current prices and travel cost on contraceptive -seeking behavior in rural areas of Bangladesh. Two data sources were used in this analysis: (1) a cross-sectional survey on contraceptive use of May and June of 1996 from two rural sites of Bangladesh. Baseline surveys that collected information on socio-economic variables and women's status in 1993 and 1994. The total sample of the contraceptive pricing survey consisted of 5942 married women between the ages of 15-49. The sample selection was based on a systematic household sampling procedure. The effect of economic constraints, such as cash price and access to services on contraceptive method use, the choice of contraceptive method and provider choice, has been analyzed, taking into account the socioeconomic factors that influence decision-making for individual family members. The family planning in Bangladesh has been very successful. The contraceptive prevalence rate (CPR) has increased from 13% in 1979 to 49% in 1996. Now the program had matured and demand for family planning had been created, the Ministry of Health and Family Welfare (MOHFW) of the Government of Bangladesh was concerned with increasing its financial sustainability. Options to increase financial sustainability include cost sharing and a gradual transition from doorstep to static clinic delivery of contraceptives. Many of these alternatives would involve additional travel time or charges for consumers, and it is important to estimate the effect that this additional process would have on the use of contraception. The result indicated that there was, on average, a 10 -years age difference between spouses; a family has, on average, three living children; the mean educational level between two and for years and about half of the households had a nuclear, rather than extended family structure. The regression results of use of any contraceptive method are also presented. After age of the mother, parity and fertility preferences were controlled for in the analyses cash prices of pills and condoms were not found to be significant predictors of contraceptive use of any method. Access (travel time to the H&FWC) however, did have negative effect on the probability of contraceptive use. A couple was a quarter less likely to use contraception if the travel time to the FWC was more than 30 min away from their home and a fifth less likely to use if it was between 15 and 30 min away. No effect of cash prices was found on the probability of use of any contraceptive method, but clients were to a limited extent responsive to price in making choices about contraceptive methods and providers. It was observed that the health counselor was more responsive to follow the algorithm. Over 90% of the exit clients expressed their satisfaction for the new approach. The findings showed that the pill users belonging to the lower wealth groups did not based on their contraceptive decision making as matter of the opportunity cost of their time, as they do on the cash prices required for travel to the providers.

**107. Mannan HR; Beaujot R. Readiness, willingness and ability to use contraception in Bangladesh. *Asia-Pacific Population Journal*. 2006; 21(1): 45-64.**

This study attempted to measure Estelline's notion of motivation or readiness to control fertility and Coal's two preconditions decline-willingness, and ability. It examined their impacts on the fertility regulating behavior of women in view of the rapid fertility decline in Bangladesh. It was observed that with the expectation of women without living children, most women want to control their reproduction. For most women fertility regulation was found

acceptable on normative and health-related grounds. This is an important finding considering that it has been not examined before. In addition, for most women family planning methods are available, accessible and affordable. It is not possible to know from this study whether and when those conditions have directly played roles to decline fertility in Bangladesh. However the study implied that the socio-cultural changes which are favorable to fertility transition have already taken place in Bangladesh. Regardless of controlling for the background variables, logistic regression analysis indicated that a like readiness and ability, willingness to regulate fertility also leads to significantly higher contraceptive use. The three variables are the principal determinants of contraceptive use and are acting as intervening variables between most of the background. However changes in the background characteristics are key changes in the readiness, willingness and ability to use contraception.

**108. Mercer A; Ashraf A; Huq NL; Hossain F; Nowsheruddin AH; Reza M. Use of family planning services in the transition to a static clinic system in Bangladesh: 1998-2002. *International Family Planning Perspectives*. 2005; 31(3): 115-123.**

The study was intended to assess ESP service use during the transition to a static clinic system in two ICDDR,B surveillance areas. Longitudinal data on use of family planning services and contraceptive methods were collected quarterly in 1998- 2002 from married women in about 11,000 household in two rural surveillance areas- Abhoynagar and Mirsarai, Cross-sectional surveys were conducted among women and service providers in 2003 to gather detailed information about the transition to static clinics and women's response to the changes. Quarterly time series graphs of selected indicators were plotted for areas served by community clinics. The study revealed in a time of considerable changes in service delivery and sources of contraceptive supply, contraceptive prevalence remained constant in Abhoynagar and increased in Mirsarai. Community clinics quickly became the sources of supply for one third of contraceptive users in Abhoynagar and one-fifth in Mirsarai, in wards where community clinics became operational (Mostly in 2001-2002) three-quarters of women had used one at sometime. Results indicated that women in two surveillance areas of rural Bangladesh have not become dependent on home delivery of family planning supplies. The transition to a static clinic system was largely achieved in several wards of two surveillance areas. About half (56%) of planned community clinics become operational in the surveillance areas, a slightly higher proportion than in the country as a whole. The study findings suggest that women need direct access to family planning information, advice and follow-up services. It is important to assess further development of the service delivery system.

**109. Mizan S; Rahman MA; Islam MN; Moni MA. Pregnancy planning among married pregnant adolescents. *JOPSOM*. 2006; 25(1):85-92.**

This study was carried out to estimate the proportion of planned and unplanned pregnancy among the married pregnant adolescent and to find out the underlying factors related to unplanned pregnancies. This was a cross sectional study. One hundred and fifty married pregnant adolescents who visited MCHTI at Azimpur, Dhaka for antenatal check up from May to June 2005 were selected. Purposive sampling technique was followed. A pre-tested questionnaire was used for data collection. The study results were indicating that a total of 150 adolescent married pregnant girls were studied. The mean age of the pregnant adolescent was 18.05 years. Most of the respondents were housewives and 47.3% had secondary level of education. The mean age at marriage of adolescents was 15.98 years. Only 33.3% respondents used contraceptives and among those 88% was oral pill. About 55.3% of the respondents of

present pregnancy were wanted and 44.7% pregnancies were unwanted; among them, the proportion of planned pregnancy was 36%. Planned pregnancy was more among the 18-19 years age group than that of 15-17 years age group. It was statistically significant. It was found that the proportion of planned pregnancy was low among the young adolescents. Tendency of planned pregnancy was more with increase of husband's age and education of the respondents. The study recommends maternal education highlighting the negative and positive effects of planned and unplanned pregnancies.

**110. Piet-Pelon NJ; Hossain SMI. Success stories of Bangladesh & future directions for the country programme. Dhaka: UNFPA, 2001.**

The major objective of this study was to focus on the MCWCs and gather case information that would determine factors influencing the quality of services. To compare recently upgraded MCWCs with the previous one, population council team visited seven MCWCs in Sylhet and Rajshahi divisions and also visited BGMEA and RHI program in Dhaka, Sylhet and Rajshahi Division. The main problem of the MCWC concerns staffing. Some MCWC were close to an overload. So it needed additional staff to manage all the cases. Based on the team's observations, interview and field visits, the study had made some recommendations and future directions for the programme. UNFPA should prioritize its focus on policy development, safe motherhood, BCC, family planning, HIV/AIDS, HRH and gender. Team's principal recommendation was safe motherhood programs (implemented in the MCWCs or through RTI) must continue and be strengthened. It was recommended that UNFPA and its government counterparts devote the first half of 2002 to studying several aspects of the MCWC program for gather information that would feed in to the next program. So research / in-depth discussion should introduce with both ANC clients who will have home delivery and clients who attend for delivery. The scope of work included six elements. The balance of the teams recommendations were based on these elements such as conduct case studies to determine the factors influencing the quality of services at MCWCs, comparing the two groups of MCWCs, success should be documented, would undertake field visit to different categories MCWCs. In the time prior to the next country programme UNFPA could embark on several important activities to work on achieving a balance in services that would ensure women receiving the best possible care during their pregnancy, delivery and postpartum period.

**111. Rahman AKMS; Begum J; Jahan N. Contraceptive use among doctors. JOPSOM. 2006; 25(1): 8-14.**

The study made an attempt to determine the use of contraceptives among doctors of Mymensingh Medical College Hospital. A cross sectional study was carried out among the doctors of Mymensingh Medical College Hospital irrespective of sex. Information was collected from 106 doctors who were willing to give interview by a pretested structured questionnaire. The study was conducted from 15<sup>th</sup> March to 15<sup>th</sup> June 2001. The result of the study indicated that the mean age of the respondents was 34.3 years and mean duration of married life was 8.8 years. Mean number of children was 1.4. Mean age difference between 1<sup>st</sup> and last child was 5.8 years. In this study 67% respondent were using contraceptives. Among various contraceptive methods the majority 56.3% of users preferred condom followed by oral pill 23.9%, copper T 7%, safe methods 7%, coitus interrupts 5.6% and combined method (condom safe period) 1.4%. The best contraceptive method as stated by the respondents was oral pill 68.4% followed by copper-T 60.2%, condom 57.1%, sterilization 28.6%, Norplant

6.1% and injection 4%. It may be drawn up the conclusion that doctors are practicing contraceptive for a long time effectively and cautionary without any harmful effect on health. The study population is highly educated and they are specialized in medical education, which gives emphasis or contraception use. The main cause of successful use of contraceptive among the doctors is their education and professional attitudes.

**112. Rahman M; Al-Sabir A; Latif AHMM. Comparisons of the high and low-performing regions: an analysis of socio-demographic, economic and programmatic factors associated with performances. In: BHDS 1996-97 special analysis. Dhaka: NIPORT/Measure DHS+. 2000:38-62**

The present study carried out to examine the extent to which the regional variation of reproductive and child health behavior was explained by inherent demographic, socioeconomic and programmatic differences between regions. BDHS 1996-97 data set has been used in the analysis. The survey also collected information on the background characteristics of women, children and husbands. In this study reproductive and health- are utilization behavior has been observed to follow a distinct regional pattern. The study was found the differences in some practices in between the divisions. Results indicated that contraceptive and health care use is highest in western region namely Khulna and Rajshahi divisions and lowest in eastern region namely Sylhet and Chittagong division. Visits by FWAs were also highest in Khulna and Rajshahi and lowest in Sylhet, followed by Chittagong. Dhaka and Barisal also had significant lower FWA visitation than Rajshahi. In the context of childcare, fully immunized of child under the age of five, 24% in Sylhet and 33% in Rajshahi infant and child mortality was highest in Sylhet. Infant mortality was lowest in Rajshahi and Chittagong while child mortality was lowest in Khulna. The study expressed that the lower rate in FP, RH or the lower FWA visitation etc. in particular region or divisions than from others was clear indication of program weakness. The low child immunization might associate with the low attendance at the EPI center. The study suggested that there two programmatic ways of increasing family planning service in the current low-performing areas. The first was to improve program management, and the second one was demand creation, related to program activities. The people in the low performing areas should be empowered with information about the idea of a better life style and about how they could achieve a better life. It could remain a challenge for the Bangladesh health and family planning programs to increase utilizations of their services. Special emphasis should be given at low performing areas. In general, to increase the services, it might be needed to make more awareness of the people and services should be available.

**113. Rahman MM; Kabir M. Knowledge of adolescents on contraception and dynamics of its use. *Health and Population Perspectives and Issues*. 2005; 28(4):164-177.**

Adolescence is a critical period, especially for married female adolescents as they have to enter early into marital life which pushes them to a situation to bear consequence of childbearing. Although adolescents have knowledge on contraceptive, but their use of contraceptive is low. Quantitative data on 1881 married female adolescents revealed that almost cent per cent of the married adolescents are aware about at least one contraceptive method. But the current use rate is low. Multi-variate logistic regression analysis revealed that current age, attitude of the family members towards contraceptive use, marital duration and husband-wife communication appeared to be important predictors of contraceptive use. To meet the family planning and other reproductive health needs of adolescents field workers

need to make greater efforts to extend their services to relatively younger and childless couples. Efforts on behavioral change communication (BCC) are needed to ensure the participation of young spouses in family planning and other reproductive health services. Another important action to be undertaken for the development of supportive structure at the community and also at the family level is enhancing the educational attainment of females which would help discourage the pattern of early marriage and childbearing.

**114. Razzaque A; Islam MM; Alam N. Contraception among limiters and spacers in Matlab, Bangladesh, *South Asian Anthropologist*. 2000; 21(1): 49-58.**

This study examines contraceptive use and its continuation (in the treatment area) among those who wanted to cease child bearing (limiters) and those who wanted to space births (spacers) in the treatment and comparison areas of Matlab. The in-depth (84) and 'KAP' (90) survey data from both areas and service statistics from the treatment area were analyzed. The analysis revealed – during 1984-90, contraceptive use was increased by 27.1% points among limiters and 23.3% points among spacers in the treatment area compared to 19.4% points and 13.5% points respectively in the comparison area among limiters in 1990, 65% of non-users in the treatment area and 50% in the comparison area could not do so due to either side effects or postpartum amenorrhea compared to 45% in each area among spacers. Contraceptive method mix among limiters and Spacers had changed overtime in the treatment area and to a lesser extent in the comparison area. This study suggests for different programme strategies for limiters and spacers and greater emphasis to improve continuation, particularly amongst limiters, in order to enhance fertility decline.

**115. Routh S; Jahan SA. Shifting away from doorstep distribution of contraceptives in urban Bangladesh: effects on discontinuation and acceptance of family planning. *Journal of Population and Social Studies*. 2000; 8(2): 17-33.**

This study was designed to develop alternative strategies for cost-effective delivery of maternal and child health and family planning (MCH-FP) services in the urban areas. The analysis followed a quasi-experimental non-equivalent control group design with before (baseline) and after intervention (end-line) analysis of the cohorts of pill/condom users supplied through doorstep CBD and modern family planning method nonusers. Dropout among the cohort of contraceptors under investigation and acceptance rate of modern contraceptive methods among the targeted non-users served as the key indicators. Data for the analysis came from service records of the field workers and community-based surveys. It was assumed that CPR in the intervention areas could go down because of the possible dropouts among the users who were to be directly affected by the shift from the doorstep distribution strategy. Logically two outcomes were possible to take place with the home supplied pill and condom users. At first, despite the discontinuation of the doorstep supply they could still remain to continue as pill/condom users, obtaining their required re-supply from the out-of-home sources (pharmacies, shops, PHCC/CCPS, other clinics). Secondly, obviously a part of these users could simply dropout and become non-users of FP, for not getting the persuasion and supply from the field workers at home. During the intervention, 11% (57 users) of nonusers and 5% (7 users) of slum, i.e. 10% (64 users) of the cohort of 669 users, who before the intervention were dependent on doorstep supply of pill/condom by the field workers, dropped out at the Hazaribag intervention area. 66% (344 users) of the non-slum and 64% (95 users) of the slum users, i.e. 66% (439 users) of the entire cohort were found to continue using FP methods at Hazaribag. Of the 439 continued users, 8% (35 users) were found to have

switched to clinical methods. In the CSP strategy at Gandaria, the usage relation rate was 59% (324 users) for the non-slum and 45% (60 users) for the slum users, i.e. 56% (384) of the entire cohort. The proportion of switch to clinical methods at Gandaria was lower by 3% points (18 users) in contrast to that of Hazaribag. Switch to clinical methods among the related cohort at both the comparison areas was found to be around 2%. Provision of a broader range of reproductive and other essential family health services can be more conducive in supporting continuation of contraceptive use, and switching of the contraceptors to more sustainable methods of family planning clinical methods as well.

**116. Saha UR; Khan MA; Begum M; Bairagi R. Determinants of pill failure in rural Bangladesh. *J Bio-Social Science*. 2004; 36: 39-50.**

The study was attempted to know the reasons for the high failure in pill use in rural Bangladesh. Data for this study came from a case control study in Matlab. A pill failure was considered a case, and no failure was considered a control. The study included 167 controls. In addition, five focus group discussions were conducted to supplement the data collected from the cases and control to gain a deeper understanding of pill failure. Results of the analysis of both quantitative and qualitative data suggested that the following were the risk factors for pill failure: no mobility of women, poor knowledge of women about the effectiveness and consequences of drop-out from pill use. Weak confidence in the pill, a gap between the use of subsequent pill cycles delay in starting the pill after menstruation for the first use, not taking any measures consistently for missing the pill, and not following the around sign given on the pill cycle. Extensive training of field workers and pill users covering the reasons for pill failure identified in this study and strong supervision of the work of field workers is likely to reduce the rate of pill failure in Bangladesh. Also, information, education and communication services for users, and management of side effects, may be helpful in reducing pill failure.

**117. Sarker S; Routh S; Islam Z; Bakat-e-Khada; Nasim SMA; Khan ZA. Orientation on Health and Population Sector Programs and Essential Services Package: issues for consideration. Dhaka: ICDDR,B, 1999. (ICDDR,B special publication; no.105).**

The study was carried out to: (i) document the operational process of community clinics, under the major element of the Essential Services Package (ESP) delivery system of GOB; (ii) monitor, analyze, and evaluate the performance of the new system; (iii) identify problems encountered in implementation of the new system; (iv) suggest probable solution to address the problems that may be encountered. Accordingly, the ORP in collaboration with the MOH &FW and its two Directorates and Management Change Unit (MCU) and Program Coordination Cell (PCC) of MOHFW, initiated this research at three of its project sites, namely Abhoynagar Thana of Jessore and Mirsarai and Patiya Thanas of Chittagong district. With the notion, orientation workshops were organized for the concerned thanas' and districts' managers to sensitize them and generate ideas from them for implementation of the program. The orientation activities included: (i) orientation workshops for district and key Thana Managers, (2) orientation workshops for union supervisors and community-level providers, and (3) orientation for community leaders (UP Chairman) and Community Group Members. The concept of the HPSP, ESP, Community Clinics and operational issues of ESP delivery were the focus of discussion in those workshops. The rationale behind the concepts of HPSP and ESP was also vividly discussed in those workshops. The workshops conducted at the district, thanas and union-levels, provided a good opportunity for the managers, providers and community members to get an understanding of the reorganized service delivery strategy in he

rural health systems. The important lesson learned is that orientation of managers and providers was essential for their conceptualization of the programme and motivation for subsequent activities. It helped the staff to be equipped to assist in forming the community groups and subsequent selection of sites by the Community Groups. The orientation of the community leaders and members contributed to their motivation and active participation in the process of establishing community clinics.

**118. Siddiqua SA; Begum R; Rahman A; Khan AW. Change of menstrual pattern among the Copper-T and Norplant users. *JOPSOM*, 2002; 21(1): 75-85.**

The article intended to assess the type of changing pattern of menstruation among the women using Cu-T and Norplant. This descriptive cross sectional study was conducted among 75 Cu-T users and 75 Norplant users. Data were collected through face to face interviews using structured questionnaire. Clinical records and clients record cards were also used. The study was conducted at the Model Family Planning Clinic of Dhaka Medical Collage Hospital during April and May 1998. The study results revealed that the Mean $\pm$ SD age of the respondents was 27.0 $\pm$ 3.3 years. More than 80% respondents were housewives, low and mid socio-economic group. More than 50.0% had primary to secondary school level of education. Mean age at marriage was 18.6 $\pm$ 1.7 years. About 85% of the respondents accepted Norplant and 90% respondents accepted Cu-T after having two or more children. More than 50% of the respondents experienced some problems within three months of their insertion/ implant. The 21-30 year age group of both users suffered more. Among the Cu-T users, 29.3% experienced irregular vaginal bleeding, 29.3% excessive menstrual bleeding, 19.0% dysmenorrhoea, 10.34% spotting, 10.34% prolonged menstruation, 52.5% lower abdominal pain, and 26.3% white vaginal discharge. In case of Norplant users, the common complain was amenorrhoea (33.34%), irregular vaginal bleeding (30.43%), excessive menstrual bleeding (17.4%), prolonged menstruation (7%) and only (4.4%) complained of dysmenorrhoea. In addition, weakness was the most common complaint (50%). Thirty four percent respondents complained of anorexia, lower abdominal pain and pain at the implantation site. Two third of the respondents experienced some sorts of menstrual problems within three months of their insertion/implantation which disappeared gradually. Therefore, the clients should be counseled properly prior to insertion/implantation of the device and proper attention as well as assurance should be given when any client comes with problem after taking the method

**119. Sobhan F; Islam A; Quaiyum MA; Barkat-e-Khuda; Ahmed S. Clinical contraceptives: situation in rural Bangladesh. Dhaka: ICDDR,B, 1999. (ICDDR,B working paper; no. 160).**

The study was undertaken to assess the situation of clinical contraceptives in rural Bangladesh and to assess knowledge and practice regarding clinical contraceptives. Data were collected from 9,861 currently married women during November 1998 -May 1999 living in four rural thanas, Abhoynagar, Keshobpur, Mirsarai, and Satkania of Bangladesh. To estimate the discontinuation rates of pill, condom, injection and IUD, data were taken from the surveillance system of the Operations Research Project of the ICDDR,B which selected data on a three monthly round. Results of the study showed about 90% of women could name any clinical method of contraception, but knowledge regarding Norplant and male sterilization was low. More than half of the women who mentioned a clinical method had some kind of misconception about the disadvantages of the method. Misconceptions were highest for IUD (66%) and lowest for injectables (57%). Religious prohibition for using permanent methods

and also fear of surgery for permanent methods and also fear of surgery for permanent method and Norplant were mentioned. The CPR was found to be 47% and was highest in Abhoynagar (63%) and lowest in Satkania (31%). The pill was the most widely used method, and only a few women were on Norplant. Switch to clinical methods was found to occur mainly from pills to injectables. The first year discontinuation rate was highest (69%) for condoms and lowest (30%) for IUD. Social barriers, desire for children, breast feeding and health concerns were the main reasons for non-use of contraceptives. Intention to use contraceptives was positively associated with advice from the field workers, education and the number of living children. Findings of the study suggested that these were policy to remove the barriers to clinical contraception with emphasis on removal of misconceptions prevailing in the community. There should also be needed to address the high discontinuation rates.

**120. Sobhan F; Islam A. Clinical contraception in a rural NGO area in Bangladesh: findings of baseline study. Dhaka: ICDDR,B, 2000. (Working paper; no. 141).**

This study was carried out to assess: (a) knowledge including misperceptions, regarding clinical contraceptives among currently-married women and their husbands; (b) the status of contraceptive use, problems faced, and subsequent care-seeking behavior; (c) reasons for non-use of contraceptives and the switching pattern; and (d) the existing promotional activities for clinical contraceptives in the study area. Data for this study were collected from 1,652 currently married women aged 15–49 years were interviewed. The data were obtained from a baseline survey conducted during July–October 1999 in 6 unions of Chagolnaiya Upazila in Feni district. A total of 9,588 women, aged 15–49 years, were identified after enumeration. After preparing the sampling frame, every sixth women was interviewed to get the required sample. Results of the study showed that over 90% of the women and 70% of the husbands could name a clinical method, but mention of Norplant and male sterilization was low. More husbands mentioned permanent method for females than permanent method for males. A large portion of the women and husbands who had heard of a clinical method had misperceptions regarding its disadvantages. For example women reported upward displacement of IUD from the uterus to the chest, inability to do hard work after female sterilization and weakness and cancer of hands for using Norplant. Husbands reported breakdown of health and loss of sexual ability and desire after male sterilization. Discrepancies were observed in reporting by husbands and wives about the status of contraceptive use (wives 31.5%, husbands 52.2%). Both, however, reported pill to be the most widely used method, followed by injectables. Switching to clinical methods occurred mainly from pill to injectables. Forty-one percent of the women never used modern contraceptives. Of them, about two-fifths had husbands, living away from home and 11% were pregnant. Desire for more children, social barriers of health concerns and fear of side effects were the main reasons for non-use of modern contraceptive, suggesting that there is a scope for the program to raise the demand for contraceptives. Findings of the study recommended that regarding the barriers of clinical contraception and prevalent misperceptions of the community peoples should be given up from the society and also there should be needed to strengthen promotional activities for longer acting and permanent methods to raise the demand for modern contraceptives among the non-users and then emphasis on participation and involvement of males also should be needed.



**121. Steele F; Diamond I. Contraceptive switching in Bangladesh. *Studies in Family Planning*. 1999; 30(4): 315-328.**

This report examined patterns of switching among users of modern methods and focuses on one aspect of used methods switching and the concern contraceptive behavior after discontinuation. This report used calendar data from the 1993-94 Bangladesh demographic and Health Survey to examine contraceptive behavior following discontinuation of modern-method used and method-related difficulties with previous contraceptive use and education. A large amount of unexplained variation in switching rates remains, however, largely at the individual level, but also at the community level for certain types of transition. The present report provided an in-depth analysis of switching that considered the effects of cultural factors specific to the Bangladeshi context. Switching between modern methods may be, in fact, reflect a wide range of options that enable women to change to the method that best suited their individual needs. Low rates of switching between modern methods might indicate a restricted method choice. Any switching between methods potentially may lead to an increased risk of unwanted pregnancy. However contraceptive failure rates were typically highest during the initial months of use when a couple may not be using the new method correctly or efficiently. A total of 620 women or their husbands had been sterilized before the start of the observation period. These women were excluded from the analysis because they could experience no further changes in contraceptive use. Furthermore, 36 used episodes that ended in sterilization were excluded, although any episodes contributed before the sterilization was retained in the analysis. Two main reasons for the small number of using episodes ending in sterilization were apparent. First, most sterilization cases were performed immediately after child-birth. Second, sterilization rates among contraceptive users were considerably lower in the 1990s than in the 1980s. No evidence of inter district variation was found within administrative divisions, and the only evidence of community level variation found was in transitions from pill use to non use among women at risk of experiencing an unintended pregnancy or in transitions to use of another modern method. The multilevel effects were different from those relating to current use and method choice found in other studies of contraceptive practice in Bangladesh. Although no district-level variation occurred in transition rates, some large differences was found in switching behavior between administrative divisions, Citation, in particular, experiences high rates of switching between modern methods. Finding showed that pill users were more likely to abandon contraceptive practice altogether when they experience difficulties, whereas other modern-method users were more likely to switch to a traditional method if they had problems with the method they had been using.

**122. Sultana S; Choudhury S; Choudhury SAR. Effect of combined oral contraceptives on bone mineral density in pre and postmenopausal women. *Mymensingh Medical Journal*. 2002;11(1): 12-14.**

The objective of this study was to evaluate whether there was any non-contraception benefits of oral contraceptive prevalence (OCP) such as postmenopausal osteoporosis by increasing BMD. This study was a retrospective urban-based cross-sectional study selected randomly a sample of 100 healthy women aged in between 35 to 55, who were referred from medical colleges and medical centers of Dhaka city. Among them 50 were controled of nonuser and 50 were case of user of OCP. They were further subdivided into pre and postmenopausal groups. BMD was measured in  $\text{gm/cm}^2$  by single photon absoritometry (SEXA)- bone densitometer DTX-100 in the Department of Obstetric & Gynecology of Mymensingh Medical College

Hospital. The study findings indicated that in the study mean BMD was significantly higher in the case group than the control group both in the pre and postmenopausal women. Relationship of mean BMD with different age group was studied and observed that within the age group there was decrease of mean BMD with advancing age in both case and control group. Relationship between duration of OCP use and mean BMD was done in the OCP users and it was observed that mean BMD increased with the increase in duration of taking OCP. BMD was found highest in both pre and postmenopausal women who used OCP for more than 05 years. Bone loss probably starts in both sexes after attaining the peak bone mass at the age of 35-40 years. The study showed that postmenopausal use of OCP is beneficial for preserving bone mass. Thus it can be said that statistically significant higher bone mineral density (BMD) was found in oral combined OCP users than non-users, both in pre and postmenopausal women. However, it could be concluded from the study that the most important non-contraceptive benefit of OCP might be positive effects on bone mass and thus reduced risk of postmenopausal osteoporosis and osteopathic fracture.

**123. Wahed T; Bhuyan MSA; Rahman MZ. The role of women in decision making on family planning among the slum women in a selected area of Dhaka City. *JOPSOM*. 2006; 25(1): 33-41.**

This research program intended to find out the role of women in decision making on family planning among the slum women in a selected area of Dhaka city. A cross sectional study was taken to carry out among a total of 120 even married women of reproductive age who had at least one child and who were not pregnant. Data were collected purposively through face to face interview by using a semi structured questionnaire. The study was conducted during the period of April to June, 2005. The study result showed that the mean age of the respondents was 27.1+7.9 years and majority of them were within the age group of 15-20 years. The literacy rate was 68% from where 32% could only sign their name. The mean duration of marriage was 10.6 years. Many of them were housewives and rests were employed in programmatic jobs. The study revealed that on the aspect of contraceptive method choice women were the she program maker. More than one third of the total women had self confidence to take such decision in spite of their husband's disapproval. One of the important findings is that a large proportion of slum women (45%) would like to decide jointly about the number of children they should have. But they could not place birth. Nearly half (48.4%) of their first Childs were born accidentally. The study found a significant relationship between respondents' age and in deciding family size. Duration of marriage of the respondent also emerged as one of the important determinants of deciding family size. It can be told that programmatic efforts alone will not be enough to expedite improvement of the position of urban slums women. The study findings finally recommended that efforts should be made to enough grater participation of women with their husbands in all family decisions.

### **2.3. REPRODUCTIVE HEALTH**

**124. Afsana K; Rashid SF. The challenges of meeting rural Bangladeshi women's needs in delivery care. *Reproductive Health Matters*. 2001; 9(18): 79-88.**

This paper was written to explore rural women's needs and expectations in relation to delivery care, and their experience of delivery care at one of BHCs. In order to improve rural women's access to maternity care, in 1996 BRAC instituted services for birthing women in 21 health facilities in each Thana. This paper reported on research conducted three years later, based on interviews with women who gave birth in one BRAC Health Center (BHC) and women who gave birth at home, interviews with staff of BHC and observation of provider-patients relations. Fieldwork was carried out between November 1998 and January 1999. A qualitative approach was adopted which stressed listening to what rural women had to say. In depth interview was the principal method of data collection but participant observation, FGDs and informal discussions were also used. Hierarchies of power at home played a central role in determining where women gave birth. Acceptance of delivery in a health facility by rural women was still minimal. Most women only attended the BHC due to complications, yet the BHC was unable to handle most complications and referred women to the district hospital, where they received poor quality care. Cost, fear of hospitals and the stigma of an 'abnormal' birth were also important constraints. Female paramedics who attended normal deliveries were praised for being caring, but made women deliver lying down, did not always use aseptic procedures and were too busy to give information, making birth a passive experience. The study paper recommended that it should be provided a comprehensive emergency obstetric care at the BHC and upgrade staff-skills by introducing rural health insurance and others which already began to implement. It also suggested that for increasing women's access to high quality of delivery care would require a serious and long term commitment.

**125. Ahmed F. Anaemia in Bangladesh: a review of prevalence and aetiology. *PublicHealth Nutrition*. 2000; 3(4): 385-393.**

The objective of this study was to provide a comprehensive review of the changes in the prevalence and the extent of anemia among different population groups in Bangladesh up to the proper time and it also focused on various facts in the etiologies of anaemia in the country. All the available data have been examined in details including data from national nutrition surveys, as well as small studies in different population groups. Study result showed that over the past three decades a number of studies including four national nutrition surveys (1962/64; 1975/76; 1981/82 and 1995/96) had been carried out to investigate the prevalence of anaemia among different populations groups in Bangladesh and had demonstrated a significant public health problem. Since the 1975/76 survey, the average national prevalence of anaemia had not fallen; in 1995/96, 74% were anaemic (64% in urban areas and 77% in rural areas). However, age-specific comparisons suggested that the rates had fallen in most groups except adult men: in preschool children in rural areas it had decreased by about 30%, but the current level (53%) still falls within internationally agreed high risk levels. Among the rural population, the prevalence of anaemia was 43% in adolescent girls, 45% in non-pregnant women and 49% in pregnant women. The rates in the urban population were slightly lower compared with rural areas, but were high enough to pose a considerable problem. It appeared that severe anaemia in the Bangladeshi population was less frequent, possibly present among only 2-3% of the population. The data on the etiology of anaemia reveal; that iron deficiency might be a substantial cause of anaemia in the Bangladeshi population. Other dietary factors in addition

to parasitic infestations might also precipitate the high prevalence of anaemia. The study confirmed that the overall prevalence of anaemia among Bangladeshi population was still very high, but the rates of severe anaemia were almost non-existent. A large population of anaemia could be attributed to iron deficiency. Thus the study recommended that there was a need for a comprehensive strategy for the prevention and control of anemia in Bangladesh.

**126. Ahmed S; Wirzba H; Hakim JA; Barkat-e-Khuda; Khatun R. Disease patterns, treatment practices and drug requirements in rural Bangladesh: a review of five studies. Dhaka: ICDDR,B, 1999. (Working paper; no.153)**

A good number of studies have been conducted to examine the number of and types of patients who visited the H & FWC and the Satellite Clinics (SCs) and to assess the knowledge of the service providers about diagnoses and treatment. This paper reviewed five of these studies with the aim of providing information for a more rational use of drugs with its hope that this paper would be a reference for disease pattern and treatment practices in rural MCH-FP government facilities of Bangladesh. Data for the first study were collected from four month records for each union from the General Patient Registers used in the H & FWCs and in the SCs. Data for the second study were collected from 48 H & FWCs and 34 SCs of 12 unions in four Divisions (Dhaka, Rajshahi, Khulna and Chittagong). Data for the third study were collected from the General Patient Registers used at the H & FWCs, MCH Units at the THCs and MCWCs. The fourth study's data were collected from the registers used at the H & FWCs; as well as from the monthly reporting forms filled out by the SACMOS and FWVs. The fifth study comprised of a literature review and situation analysis of 16 SCs, in Khulna and Rajshahi divisions was conducted in July 1993. It consisted of taking an inventory of SC facilities, observation, client exit interviews and interviews of FWVs and FWAs. Information on services was available from four of the five studies reviewed. The two ICDDR,B studies observed the monthly variation in the number of clients attending the SC and the H & FWC where as the other two studies (MDU & URC) did not reflect any seasonal or other temporal variations regarding clients. Information on the distribution of clients between the providers was available from the two ICDDR,B studies and the MDU study. One out of the two ICDDR,B studies and the study conducted by the Directorate of Family Planning collected information on the disease patterns. Broad categories of diseases were, however reflected by giving a reasonable picture of disease patterns in rural Bangladesh. Information on treatment by location and service provider was available both ICDDR,B study and MDU study. In both these studies, it was seen that where there was reasonable variation in the number of clients and diseases, the supply of drugs was constant and might not, therefore, always be appropriate. The analysis indicated that the disease profiles were different at the H & FWCs and at the SCs. The service providers had limited knowledge about diagnoses of common diseases and their treatment practices and they did not follow any accepted guidelines.

**127. Ahmed S; Islam A; Mitra DK; Khanum PA; Barkat-e-Khuda. Use of a sub-district hospital of management of obstetric complications in rural Bangladesh. Dhaka: ICDDR,B, 1999. (ICDDR,B working paper; no.156.)**

This study was carried out to assess the care seeking behavior of pregnant women with complications, and to examine the characteristics of women who sought care at the sub-district hospital, aiming at designing effective programmes for improving the quality of maternal health services in rural Bangladesh. During October 1994 – August 1995, information was obtained from 145 patients who came with obstetric complications to a sub district hospital

(THC) in rural Bangladesh. A structured questionnaire was used for collecting relevant data from the women in their homes. Information on the diagrams made and the types of services provided at the THC were taken from the women and from the hospital register. Another 275 women, who had complications during pregnancy and childbirth, but did not visit the hospital, served as the comparison group. The findings of the study showed that only 2.9% of the total number of pregnant women in the area used the hospital facility. More than four-fifth of the 145 patients who came to the Upazilla hospital were admitted, while about one-fifth had to be referred to a higher-level facility due to lack of services, such as blood transfusion, caesarian section, or any other surgical manipulation. Forty-one percent of the women who came to the hospital were from the higher socioeconomic group, and almost three-quarters had received some education. In the comparison group 22% were from higher socioeconomic status, and 55% had no schooling. Thirty-eight percent of the women, who had complications but did not go to the hospital and did not know about it or about the services provided there. Over two-thirds of the patients who came to the hospital had received some antenatal care. About three-fifth (59%) clients came from a distance place of more than seven kilometers. The decision to go to a hospital was made mostly by the husbands or the health care providers. The findings of the study recommended that there was a need for awareness raising efforts in the community regarding the danger signs of pregnancy and childbirth. Also health care providers need to be trained and made aware of the complications, so that they could identify the complicated cases and make timely referral of women to the appropriate facilities.

**128. Ahmed SM. Morbidity, health-seeking behavior and life style characteristics of the adolescents. Dhaka: BRAC, 2006.**

The goals of this survey were to assess the morbidity, health seeking behavior and life style characteristics of adolescents. The data for the adolescents (10-24 years) survey were collected using a pre-tested structure questionnaire during April-August 2005. A total of 361 primary sampling units (PSUs) or clusters were surveyed, 277 in rural areas (village), and 84 in urban areas (mahallas). The study found that morbidity prevalence among the adolescents was found to be quite high compared to national average of 19% (BBS 2006). Female adolescents were found to resort to less costly health care. In rural Bangladesh, women (including adolescent women) also require taking permission from husbands or in laws and also find someone to accompany them before seeking out care from qualified providers though this situation is changing for better in recent years. The expenditure on illness was found to be very modest in this population. The greater level of knowledge and awareness about the addicting and consequences observed among the males is plausible, given the greater exposure of the male adolescents to outside world compared to the females in the context of Bangladeshi society. The importance of TV as a prior source of information to this age group besides friends and relatives over-riding print media is revealed in this study. Adolescents who have positive role models are more likely to do good school and have greater self esteem. Viewing cinema and TV appeared to be the major source of entertainment for the adolescents in this survey. Interesting thing was noticed that the observation of a very small proportion of adolescents enjoyed by reading the books. The proportion was much less among the females (5.5%) than the males (22.6%) Female adolescents were found to reside less frequently with their parents, as a large proportion of them get married by this period. And the traditional family norms are changing from extended to nuclear one. Also the adolescents displayed a more liberal attitude in terms of having friends from opposite sex or religion. The study recommended that policy makers and implementers should be cognizant of this knowledge while designing relevant

interventions for the adolescents. The optimum use of media for communicating on issues related to health and other matters should be brought under useful consideration.

**129. Akhter HH; Hossain MM; Akhter M; Desai SN; Rahman MH. Report on need assessments on reproductive health information and care among adolescents in Paurashava schools and colleges. Dhaka: BIRPERHT, 2000.**

This study was conducted to help develop an IEC package through assessing needs for information and services on reproductive health among adolescents. This was a cross sectional descriptive and exploratory study conducted among the adolescents of Rangpur Paurashava schools and colleges between April and July in 1989. A self-administered questionnaire consisted both open and close ended was used as instruments. The study population included students from classes VI to college level. The study findings indicated that 70% of the students were between the ages of 12-16 years and approximately 98% of adolescents (both male and female) were unmarried. Findings showed that knowledge about reproductive health was not clear to the adolescents; about 43% of female did not know what reproductive health was. Usually radio/TV, textbooks, peer etc were main sources from where they could get information on reproductive health. Majority (84% male and 76% female) stressed the need for inclusion of reproductive health information in text books, and should start from class VIII or earlier. They showed negative attitude and opinion about childhood marriage; a large number of them had no knowledge about contraceptive methods and about STDs. But most of them have heard about HIV/AIDS and its causes. Reviewing the findings, an information package was developed and disseminated later on. It is apparent that there was a lack of information and misunderstanding about reproductive health issues among adolescents. Comparatively female adolescents were less informed about the issues than their male counterparts. The study recommended that adolescents need more information on reproductive health and that should be disseminated using multiple methods including written formats such as text book, a leaflet, mass media such as TV, radio etc.

**130. Akhter HH; Rashid M; Siddiqua Y; Akhter M. Report on assessment of knowledge, attitude, practice and perspectives for postpartum health care among the clients. Dhaka: BIRPERHT, 2001.**

The specific objective of the study was to make an assessment of knowledge, attitude and practice of mothers on the issue of postpartum health care and contraceptive information and were sought an issue such as the need for postpartum contraception timing of initiation of contraceptive even during or without lactational amenorrhoea in the postpartum period and the quality of postpartum care and advices. This was a cross-sectional survey using multi-stage simple random sampling technique. Data were collected with structured questionnaire from Akhaura union of Brahmanbaria district during the period of September to November 1994. A total number of 457 currently breast feeding mothers within 24 months from date of interview consisting of 322 rural and 225 urban mothers were interviewed by trained female interviewers for collecting data. The findings of the study showed that higher proportion of urban women expressed the need for ANC. Nearly 70% of rural mothers did not receive antenatal check-up for their index pregnancies. Ninety-seven percent of rural mother (56.3%) had home delivery as compared to 63.5% urban mothers. Untrained TBA delivered majority of the rural mothers, while doctors attended about a quarter of deliveries in urban mothers. Most of the women (80%) perceived that consultation was needed during pregnancy, half of rural and majority of urban mothers (91%) reported hearing about postpartum care on health

care of mother and baby, food intake etc. from different sources such as relatives, mothers and in-laws doctors, neighbors etc. Only 3% of the mothers knew that lactational amenorrhoea was due to breast-feeding, whereas over half of them did not perceive any relationships. Most of the mothers indicated that they were aware about appropriate contraceptives and they have to use contraceptives if there was a risk of pregnancy.. Resumption of sex within 40 days was found in higher proportion of rural women. Higher proportions of rural mothers were found to remain amenorrhoeic at lactation than urban mothers. The mean desired birth interval was longer among urban women and majority of them indicated using contraceptives to achieve their desires. Mothers opined that mass media had a role to play to advice on birth interval. Over 74% of rural and 80% of urban mother reported that no health worker visited them during 42 days of their postpartum period. Sixty-three percent mentioned that mother; grandmother or elderly women could help most during postpartum period. The findings would be helpful to develop specific IEC program and postpartum contraceptive service delivery guidelines.

**131. Akhter R; Chowdhury MS; Ahmed BN; Akhter S. Clients' satisfaction on emergency obstetric care in selected community of Bangladesh. *JOPSOM*. 2001; 22 Suppl.; 14-18.**

The objective of the study was to assess the satisfaction of the clients regarding basic and comprehensive aspects of emergency obstetric care (EOC). It was a descriptive cross sectional type study and it was carried out in 3 health centers providing both emergency and comprehensive EOC. The centers were Tangail District Hospital, Tangail Maternal and Child Welfare Center. The sample size was 97 selected purposively from the admitted pregnant women who delivered at the health centers. A structured questionnaire was used for data collection from hospital records and client interviews. The study results indicated that the 72.2% client's impression was positive about the service provided at the centers. Although 68.8% respondents took antenatal care from the centers, only 33.3% and 18.6% know about complications associated with pregnancy and delivery respectively. In 83.5% of cases, the mothers gave birth to live healthy babies. Out of 91 respondents, 81.4% were satisfied with the service. Of the 18.6% dis-satisfied respondents, 77.2% held lack of cleanliness and poor standard of diet responsible as the causes. In 22%, the dissatisfaction was due to expense of service, while in 5.5% cases, inadequate attentions from the physicians. About 84% clients wished to recommend their friends and relatives to come again to the same centers for taking health services. The study also revealed that more than 80% of the clients were satisfied with services provided at the health centers. The study suggested that attention should be given for improving the quality of food specially its cleanliness.

**132. Al-Sabir A; Khan MSH; Rahman APMS; Nasrin T. Baseline survey on health community-operated reproductive health project. Dhaka: ACPR, 2001**

The survey was designed to assess the overall demographic situation in the project areas, and reproductive health status of women, availability of the ESP components and settle some indicators that could be utilized for the final evaluation of the project. This baseline survey employed a representative, tow-stage sample that was selected from the list of FPAB for the implementation of survey. The FPAB list consists of 27 primary sampling units (PSUs)- in the unions and the PSU was the Mouza. Two types of questionnaires- a household questionnaire and a woman questionnaire. The survey found- tow-fifth of Panchdona men (39.7%) have never attended school compared with one-fourth of Dahlia men (25.2%). The differences are

also striking for women- 47% of Panchdona women have never attended school, compared with only 38% Dahlia women. Electricity is much more common in Panchdona union (59.2%), compared with 29.3% of Dhalia households. One-third of women have no access to mass media. Women of Panchdona union are more likely to be received skill, training and micro credit loan than women in Dahlia union. Overall, 49% of currently married women in project areas are using a contraceptive method. The vast majority of currently married women want no more children (61% women of Panchdona and 63% of Dhalia). Almost 52% of Panchdona and 42% of Dhalia non-receiver of ANC services do not feel necessity of ANC services. Majority of births (62% in Panchdona and 72% in Dhalia) are assisted by traditional birth attendants (TBA: dai) checking of birth within 2 months of delivery coverage is very low 38% in Panchdona and 50% in Dhalia children under five were reported to have been ill with a fever during two weeks preceding the survey. 65% of children under five had received at least one capsule of vitamin A in the six months before the survey. 60% currently married women have heard of AIDS. A wide range of effective and affordable contraceptives should be made readily available to them, together with comprehensive information. Behavioral change communication (BCC) activities are to be strengthened to address STIS, AIDS and gynecological problems.

**133. Anonymous. Report on dialogue on adolescent reproductive health in Bangladesh: a challenge. Dhaka: South-South Centre, Bangladesh, 2000.**

The objective of the dialogue was to reach at a consensus on appropriate strategies to activate and strengthen the current Adolescent Reproductive Health (ARH) activities of Government and NGOs. The specific objectives were to sensitize policy makers, program managers, Government and NGO officials, representatives of the media and development partners on the issue of adolescent reproductive and sexual health; solicit recommendations from the participants to address adolescents' health needs and improve adolescents' health; Mobilize media-both print and electronic to create public awareness about the issue; and publish findings for wider dissemination. The dialogue was organized through introduction, inaugural session, business session, group discussion and concluding session on 9<sup>th</sup> May of 2000 at BRAC Centre Auditorium, Dhaka. The dialogue was attended among others by policy maker, program managers, Government officials and representatives of NGOs, Inter-Governmental bodies, UN and bi-lateral agencies, media representatives, demographers and experts. Adolescent reproductive health situation in Bangladesh can not be denoted as "satisfactory" both in terms of programme efforts and actual performance. Adolescent health was a new sphere of thinking and a strong agenda in the Health and Population Sector Strategy of Bangladesh. The deplorable situation of adolescent's reproductive health with all its associated dimensions. In the field of population and health sector development, which forms the basis for human development, the most significant and critical challenges were: the population programme itself, maternal health, adolescents health and education, and programme sustainability. The current adolescent size would be about 30 million or 23% of the total population that was expected to rose to around 35 million in the year 2010. About 50% of the female adolescents are illiterate. The proportion of teenage women who began childbearing rapidly rose with age from 14% to 58%. Those teenage women residing in rural areas are more likely than those in urban to have begun childbearing.



**134. Anonymous. Post evaluation of community education on maternal and neonatal health care: final report. Dhaka: TBA Training Project, DFP, 1999.**

The objective of the study was to provide feedback to the policy makers and program managers for taking necessary measures on training and IEC to reduce maternal and neonatal morbidity and mortality in Bangladesh. Data were collected from a sample of 676 respondents from all over Bangladesh. Out of the sample 596 were lactating mothers and 80 NGO workers. Simple random sampling procedure was adopted to draw the sample. Face to face interview with structured questionnaire was conducted to collect data. Two quality control teams were employed for on-the-spot random checking of the filled in questionnaires so that the quality of data was ensured. The data was collected during April-May 1998. Coverage of Tetanus Toxoid has significantly improved (96 percent) in the intervention areas by the established working groups (both government and non-government); Colostrums use rate was found to be 87% which is at par of the national colostrums use rate; EPI coverage against six killer diseases in the intervention area (84%) seemed to be much more higher than the national coverage (54%); Awareness on vitamin-A capsule was also high (80% of mothers know about Vitamin-A capsule). The health care practice of the members of the established working groups has increased many folds than those of the baseline survey. More over, established working groups on the intervention areas were found more active in educating rural mothers on maternal and neonatal health than the trained and untrained TBAs. But for conduction of delivery mothers prefer TBAs than the members of the established working groups. Therefore, it was recommended that the community education program should be replicated in other Thanas of Bangladesh for educating mothers on preventive and primitive health care, but not for conducting delivery. With their own benefits of the established working group as well as their role as catalysts they would be able to motivate their clients and other mothers of the community. Thus, their credibility and acceptance in the society would be increased vis-à-vis coverage of the community education on maternal and neonatal health would be enhanced.

**135. Anonymous. IEC materials on reproductive health in Bangladesh: a catalogue. Dhaka: UNFPA & VHSS, 2002.**

The prime objective of this report was to develop a catalogue of present IEC materials on reproductive health in Bangladesh. This catalogue was developed under a project named "Strengthening Communication on Reproductive Health Project under VHSS funded by UNFPA. The Government and NGOs developed a lot of IEC materials, many of these materials remained scattered and used by the organization which developed it and there fore provided less opportunity to share and interact with other fellows. Considering this VHSS prepared a catalogue of those materials. For this purpose it was contacted with 75 organizations and collected reproductive health related IEC materials from 53 organizations of both government and NGOs. To collect the materials at first a list was prepared of organizations that are working in RH either using or developing IEC materials. Then made contact with them. In these processes, in earlier phase 733 materials were collected, after a thorough scrutiny, 484 materials were found appropriate and included in the revised catalogue. To make more user-friendly consultation with different IEC experts, discussion with different groups including experts, sharing workshop etc. were held. Analysis from the catalogue showed that most of the collected materials were in printed forms (89.26%) and a few were audio-visual materials (10.33%). A significant number of materials cover only one issue i.e. family planning (29.75%), followed by issue on infertility (0.41%) and male involvement (2.89%). It was identified that 44.21% IEC materials developed or published within the period

of 1996-2000 where only 1.24% were before 1985. At about eighty percent materials are in Bangla, 14.46% in English and only 4.75% were in both language, also 1.44% materials were in both Bangla and Arabic. A significant number (22.42%) of IEC materials were developed for service providers and 4.10% for trainers only. However, this catalogue was a compilation of audio, audio-visual and printed materials, which indeed helped to serve as a quick reference guide to health professional, organizations, providers, researchers, policy makers and interested individuals as well as for easy access to these materials. It was suggested that this catalogue should updated regularly.

**136. Anonymous. Adolescent reproductive health communication midline assessment 2004. Dhaka: BCCP & ACNielsen, 2005.**

The objective of the study was to reduce maternal mortality, increase age of first sexual experience and pregnancy, delay age at marriage, reduce maternal malnutrition and reduce STI/HIV transmission. ACNielsen Bangladesh (ACN) carried out the present study which was quantitative in nature. Trained interviewers interviewed two types of respondents using two different structured and pre-tested questionnaires. A total of 4,822 adolescents both boys and girls between the ages of 10 and 19 years from selected rural ad urban areas and 1750 were interviewed during the months of November and December 2004. The study found that one tenth of all adolescents were married and the average age of marriage was 14.6 years. Parents make most of the decisions for their children's marriage. Adolescents showed a positive attitude towards delaying their marriage and marriage without a dowry. Only a small proportion of adolescents had sexual inter course, although those who were sexually active became active at a young age (14.5 years). One-third of the users (adolescents) were found to be contraceptive users. Adolescents are vulnerable to different sexually transmitted disease (STDs) not only due to their early stage of physical growth but also to the fact that they initiate sex at an early age. They are also more likely to change their partners in future. Adolescents aged 10-12 years were found to process limited awareness on reproductive health issues as compared to those aged 13-14 years. HIV/AIDS and STDs are the most discussed topics among adolescents. Information on the ways of transmission and prevention reflected that adolescents possessed some what correct knowledge. However, knowledge about STIS is less prevalent among the study group. Social and household environments play crucial role in making reproductive health education a success among adolescents. Adolescents were more likely to discuss RH issues with their peer groups rather than their parents or any other elder. Peers need to be more informed on different RH issues. Additionally, parent-child communication should be encouraged. The government in collaboration with other partners may take immediate, coordinated effort to disseminate the Adolescent Reproductive Health Communication package more widely.

**137. Anonymous. Baseline survey of adolescent reproductive health interventions in Bangladesh. Dhaka, ACPR & BCCP, 2003.**

The study was intended to monitor and evaluate the impact of adolescent reproductive health intervention from 11 January to 12 March 2002 to establish benchmark status to the extent to which adolescents have contact with major media outlets, their knowledge about a range of reproductive health issues, and their access to reproductive health information and services. Weighting factors (considering different selection probabilities for males and females, married and unmarried adolescents' sample) were applied to the data to obtain the overall national estimate. Data were collected by interviewing randomly selected adolescents using a

structured questionnaire. Radio seems to be an important medium and source of information for rural adolescents compared to urban adolescents. A culture of silence exists in Bangladesh- both at home and at the policy level- that inhibits open discussion regarding reproductive health issues. Adolescent seem to be aware of the ideal age for marriages, the ideal age for having the first child and other fertility related issues. A major group of adolescents in the study reported that they don't use contraceptive methods for the reason of either wanting a child or being pregnant or lactating. Only about 5% of males and 4% of females know of STIS. Knowledge about modes of transmission and ways of preventing STIS is even lower. Utilization of reproductive health services is found poor among adolescents as noted in other studies. Condoms as a method of contraception and condoms as a device of prevention of HIV/AIDS were known to four-fifths of the adolescents interviewed. A significant proportion of the adolescents didn't know dual preventive role of condoms. The female were less aware of condom use than males. BCC activities should be undertaken in order to provide information as well as to dispel myths and misperceptions. Seminars, exchange of dialogues and conversations and meeting with gate-keepers may be arranged. A youth friendly health service system should be clearly defined and developed.

**138. Anonymous. Development of curriculum on reproductive health related issues for class six to class twelve of secondary and higher secondary level in Bangladesh. Dhaka: IEM Unit, DFP & Eusuf and Associates, 2006.**

The objective of the study was to develop a suitable curriculum for the students of class's six to twelve for creating awareness on reproductive health related issues which will be incorporated into the National curriculum and textbooks of schools and colleges on the specific subjects. The study was accomplished by using appropriate strategies and approaches as twin activities. The strategies were documentary analysis and field activities/survey. For needs assessment survey: Purposive sample approach was employed and for focus group discussion, stratified sampling approaches were used. The study team used suitable and appropriate methods and tools for collecting data for developing curricula for students and teachers. Analysis and interpretation of data and the findings of the study reveal that the study team could not locate any substantial number of studies on 'Development of Curriculum on Reproductive Health Related Issues for Classes 6-12 of secondary and Higher Secondary level in school and colleges. It was also observed that only population education and its related issue had been included in the curriculum and in the test books but there is no information on reproductive health and its issues. A Secondary review report tells about educational program for the enhancement of enrollment and empowerment of women. This provides a base for induction of reproductive health education in formal education stream, particularly at secondary stage of education. Review of population education training materials provided opportunities for conceptualization of teacher training activities leading to achieve the goals of reproductive health education. The participants opined that the RH education issues should be included in our curriculum maintaining cultural and religious values, there should not be any type of explanation in RH education issues so that the boys and girls may divert to bad consequences, the teaching methodology should be in such a way that the learners will be benefited and bring happiness in their family and society. To conclude, it is important today to develop a curriculum on RH education for the young future citizens to fulfill the changing needs of the society.

**139. Anonymous. Baseline survey of reproductive and sexual health knowledge, attitude and practices of adolescents of Nasirnagar 2004. Dhaka: Save the Children, USA, 2004.**

The objectives of the survey aimed to assess benchmarks for selected indicators related to knowledge, attitude and practices of adolescents Nasirnagar area about reproductive and sexual health at the onset of KAISHAR program. The survey had two components: household listing operation in the 13 unions of Nasirnagar to conduct sampling frames and then collection of information through sample survey using structured questionnaire. The survey was based on representative samples of male-female and married-unmarried adolescents aged 10-19 years parents and key adults. Parents sample included both mothers and fathers and key adults included religious leaders such as imams, public representatives, teachers and traditional birth attendants. Adolescents constitute an important socio-demographic group because of their sheer numbers and significance in the reproductive health status in Bangladesh. Perception among adolescents about reproductive health and problems is found generally low, not precise and vary greatly by sex and marital status. As perceived by majority adolescents, reproductive health means wet dreams, menstruation and physical change during adolescents, marriage and pregnancy. One third of married female aged 10-19 years and unmarried female aged 15+ did not receive any tetanus toxoid injection. Only about 8 percent of female adolescents have correct knowledge of age and for TT injection. KAISHAR program is essential as a new initiative. All the unions of Nasirnagar could not be brought under the program by the time of the survey. Save the Children needs time to consolidate its service efforts. Since education is related with the practices of reproductive health care, it is important to keep adolescents in schools, formal or informal. As parents and key adults are in favor of providing information about reproductive health through schools. However further study is needed to decide at which age of adolescents and what level of schooling ARSH information should be provided.

**140. Anonymous. Report on community trial of skilled midwifery services for improving safe motherhood in urban setting. Dhaka: UPHCP, 2004.**

Bangladesh is a density populated country in South East Asia burdened with high maternal mortality. Globally it has been considered that ensuring skilled attendants at delivery is the most critical intervention for safe motherhood. The community based safe motherhood study has designed and implemented an intervention program of skilled midwives to serve at urban primary health care setting. This was a community trial using quasi experimental design. Situation analysis was done by household survey and conducting focus group discussions and in-depth interview. A task-based curriculum on skilled midwifery had been modulated and ten diploma nurses were trained for one year according to the curriculum to develop as skilled midwives. The skilled midwives served for one year in selected centers and in the community. Both intervention and control centers were provided with essential medicine, instrument and related logistics for normal delivery. Group meeting video show, leaflet distribution and counseling session were organized regularly in intervention areas for promoting use of services. A total of 6077 eligible mothers were interviewed. There was significant improvement in the utilization of ANC services in the intervention area. The proportion of mothers with 5 times or more antenatal visits were found significantly higher and the quality of ANC services in terms of performing physical examination and provision iron tablet were significantly improved in intervention area than control. The experience of this study has

gained evidence that skilled midwives are effective and acceptable program for improvement of selected indicators of safe motherhood in urban context

**141. Anonymous. Report on RCT on modified syndromes approach for RTI/STI management at UPHD centers. Dhaka: OGSB, ICMH and UPHC, 2003.**

The general objectives of the study were to develop an effective and acceptable syndromic management system for control of RTI at Urban Primary Health Care setting in Bangladesh to evaluate the cost effectiveness of syndromic management of RTI. Five urban health care centers with facility of management of RTI/STEs patients were selected randomly from health centers in Dhaka city. Out of 2561 patients presented with either VD syndrome or LAP syndrome 2488 were enrolled for this study. Of the total patients with VD syndrome 49.5% was assigned to the management protocol of WHO algorithm and rest 50.5% assigned to the OGSB algorithm. The age and other demographic characteristics of the patients between two assigned groups were almost similar. The study revealed that algorithms used by WHO and modified one by OGSB did not have significant difference outcome in terms of cure rate among both patient groups complained of vaginal discharge and lower abdominal pain. But in terms of diagnostic accuracy, the modified one had higher sensitivity and specificity than the WHO algorithm. The approach proposed by the OGSB also showed to be cost effective and more compliance friendly than WHO. Moreover, over treatment was minimized by using OGSB algorithm because it could identify about 19% of physiological discharge cases, which were managed by only counseling without drug whereas WHO algorithm could not identify physiological discharge and thus treated by drugs. It was assumed that if all patients of VD and LAP syndrome of Bangladesh were measured by using OGSB algorithm about Tk. 25 crores (6 million US\$; 1\$=60BDT) would be saved. So, it was concluded that OGSB algorithm could better be used in the management of RTI/STI by the paramedics not only in the urban areas but also in the rural communities where RTI patients had limited access to sophisticated laboratory facilities.

**142. Ashraf A; Kane TT; Shahriar A; Khuda B. Male Involvement in reproductive health services in Bangladesh: a review. Dhaka: ICDDR,B, 1999. (Special publication; 94).**

The study focused attention on men as important candidates for reproductive health services warranted the need for reviewing the past experiences in relation to male involvement initiatives. The data were collected from published national and international literatures. Field visits were made to projects on different male involvement initiatives under taken by govt. and NGOs. Besides, informal discussions were held with program managers, male front line supervisors, and selected males. The results of the study show that the use of strictly male family planning method such as condom vasectomy and withdrawal as an indicator of male involvement in family planning, does not show much promise in the relative share of male methods has rather declined steadily from 22 percent of all method use in 1975 to only 14 percent in 1996-97 in Bangladesh. The awareness about AIDS is higher among men than women it is still quite low with only about one third of men even heard of AIDS and much lower proportion knowledge how it is actually transmitted. Some sexually transmitted diseases such as syphilis and gonorrhea are prevalent among men. The review also shows that men are unaware of their role as a supporting partner on reproductive health issues. Men's use of reproductive health services from the government and NGOs facilities is low. They rather prefer to use private sources for their health and family planning needs. What ever efforts

made to far by the government and NGOs under the name of male involvement have addressed only part of the problem. Documentation, monitoring and evaluation of male involvement efforts are also insufficient. The findings suggests appropriate strategies aiming at improving men's knowledge about reproductive health issues and services, increasing the use of reproductive health services by men, increasing supportiveness among husbands for the reproductive health of their wives and preventing STDs/AIDs in Bangladesh

**143. Ashraf A; Tunon C; Hussain Y; Reza M; Saha NC; Barkat-e-Khuda. Knowledge of men about reproductive health issues and services in Bangladesh. Dhaka: ICDDR,B, 2000. (ICDDR,B working paper; no. 135).**

The study was carried out to assess the knowledge, perceptions, and practices of married men regarding selected reproductive health issues. The ORP maintains a longitudinal surveillance of approximately 24,000 married woman of reproductive age (MWRAs). During April–June 1999, the trained male interviewers collected data from the spouses of 12,197 rural and 2, 619 urban MWRAs. The study was conducted in several rural unions of Jessore and Chittagong districts and 2 urban location of Dhaka City. A two–stage cluster-sampling design was used for identifying the respondents. Results of the study showed that more than 90% of the rural and urban men had knowledge about menstrual hygiene, need of antenatal visits, and immunization during pregnancy. A little more than half of them could mention about the benefits of antenatal care visits and immunization with TT. The majority (87%) of the men accorded little importance of postnatal visits. Although all man were aware of, at last, one symptom of pregnancy, but 55% of the men were not aware of complications associated with pregnancy and post delivery with a notable difference between rural and urban areas.. Surprisingly, 68% of the men in both rural and urban areas had knowledge about delivery-related complications. Eighty-five percent of the urban and rural men considered postnatal care contracts with health staff as, probably harmful to both mother and children. Men reported a high rate (over 90%) of health care attention for themselves and for their children (60%) compared to their spouses (50%) during the last sickness episode. Sixty-eight percent of the men in both rural and urban areas favored at last 2 years as waiting time to have a child after marriage. Ninety-percent of the men in both rural and urban areas had access to mass media. Electronic-print media and interpersonal communication were the main sources of knowledge. Findings of the study recommended that the role of men in decision-making must be considered while designing any interventions or reproductive health issues to increase the use of services, particularly in the case of obstetric complications. The health workers should be given specific assignment of targeting specific group females in a clearly defined setting and the performance must be measurable. In addition to there was a need to the orient service providers about the role of men in improving family health, to increase their knowledge of prevention and management of reproductive health problems and to prepare the service providing facilities for offering reproductive health services simultaneously.

**144. Ashrafunnessa; Khatun S; Shamsuddin L; Rahman AJEN; Kamal M; Kabir S. Cervical dysphasia among women attending gynecological outpatient department of a teaching hospital. *Bangladesh Journal of Medical Science*. 2002; 8(1): 39-42.**

The aim of this study was to assess the prevalence of CIN identified by cervical smear study in women of different ages attending the Gynecological Outpatient Department (GOPD) of Bangabandhu Sheikh Mujib Medical University (BSMMU) hospital. In this prospective study 4200 cervical smears were collected during July 1997 to June 2000. The included women

were married, separated, divorced or widowed. Non-pregnant women without any growth in the cervix were recruited irrespective of their age. The patient who had previous history of abnormal cervical smear was not included. Relevant facts from the history were recorded in a pre-designed proforma, which included information about personal history along with clinical information and socio-economic status. Five percent of the smears were dyskariotic. Though smears were collected from apparently normal cervixes, ten of them showed malignant cells, 3.1% of the smears were unsatisfactory. About four-fifths of the women were between 21-40 years and about 90% of them were housewives. Majority of the women with abnormal smears presented between 21-50 years of age. Two women developed invasive squamous cell carcinoma in the 21-30 years of age group. Both were of stage in cervical carcinoma. One of the patients was 25 years and the other was 27 years of age. CIN and cancer were more common among women of poor and lower middle class. Dysphasia was more prevalent among women of poor and lower middle class and all then cases of cervical cancers occurred among the same income group. Majority of the dysphasia and all cases of invasive squamous cell carcinoma occurred among the women who had first intercourse before 20 years of age and majority of them were sexually active for more than ten years. Among the ten invasive carcinomas, two occurred around 25 years. This indicated that cervical cancer could occur at an early age in this population. Studies in United Kingdom also showed a high incidence of cervical cancer among women between 25-29 years. All these findings indicated that cervical screening programme should be started by 25 years of age or before that. Also age, age of marriage, duration of marriage all should be considered together to make the programme cost-effective during developing a screening programme. Dysphasia was prevalent among women of all socio-economic condition, but invasive squamous cell carcinoma occurred only among women of poor and lower middle class. So an effective screening programme should ensure inclusion of women of low income group. Majority of the women who had invasive squamous cell carcinoma was sexually active for more than 20 years.

**145. Barkat A; Ara R; Rahman M; Majid M; Mohiuddin G; Uddin MT; Sabina N; Poddar A; Hoque S. Baseline study on increasing access to maternal health services for poor women in rural Bangladesh. Dhaka: HDRC & FPAB, 2006.**

The objective of this study was to conduct a baseline study on access to sexual and reproductive health and maternal health service for poor women in the safe motherhood project areas. The project areas are in Chittagong and Sylhet. The specific objectives of the baseline study were: (i) To map the SRH service agencies and assess their infrastructure, (ii) To find out the knowledge, attitude and practice among SRH service providers and community members, (iii) to get the opinions of stakeholders and leaders. In most of the areas, the number of medically competent or skilled health personnel is adequate to provide quality sexual and reproductive health service. Altogether there are 62 facilities with only 109 doctors, 126 paramedics and 205 nurses providing SRH services in project area to serve 1.8 million populations. The service providers are not aware about various components of SRH services. About 10% of the service providers are found not aware about ANC, 49% safe delivery and 17% PNC. Only 17% of the service providers are found to be aware about all of the three components of obstetric first aid. About 29% of the service providers do not know prevention of unsafe abortion. The estimated knowledge score shows a large extent of overall skill gap. Thoughtfully formulated policy skill improvement will enable the project to strengthen access to quality SRH services including safe delivery and EOC services, mount up innovative programs to promote and encourage women's access to sexual and reproductive

health information and education, strengthen access to quality sexual and reproductive health service including safe delivery, promote women's right for social justice and human rights.

**146. Barkat A; Khan SH; Majid M; Sabina N. Adolescent sexual and reproductive health in Bangladesh: a needs assessment: Dhaka: IPPF & FPAB, 2000.**

The objectives of the studies are: To identify the current sexual and reproductive health needs of adolescent and youth in Bangladesh, to assess current youth and adolescent program IEC materials and activities in light of the findings of the needs assessment for the purpose of re-designing the IEC component of the program, to provide inputs necessary for the appropriate redesigning the future projects and to prepare a draft project proposal on adolescent/youth reproductive health in collaboration with relevant FPAB staff. This needs assessment survey covered both FPAB project sites and non-project sites and thus the study falls under quasi-experimental design. A multi-stage sampling procedure was followed. First the sample areas were selected, and then the sample respondents were drawn. A total of 12 out of 71 project sites were chosen using random sampling procedure. The 12 project sites selected represent 12 districts. Primary data were generated by means of interviewing, focus group discussion (FGD) and checklist for interview. The FPAB has been serving since 1953. Adolescents, like all individuals should be empowered to make fully informed contraceptive choices. A curriculum can be developed for school going adolescents which gives them age-appropriate information about reproductive health, arrange training and support school teachers so that they can teach about reproductive health, help parents so that they can give accurate information and guidance on talking with their adolescent children.

**147. Begum A; Nilufar S; Akther K; Rahman A; Khatoon F; Rahman M. Prevalence of selected reproductive tract infections among pregnant women attending an urban maternal and childcare unit in Dhaka, Bangladesh. *J Health Popul Nutr.* 2003; 21(2): 112-116.**

A cross-sectional study was conducted during May-December 2000 among pregnant women attending an urban maternal and childcare-delivery unit in Dhaka, Bangladesh, to assess the prevalence of bacterial vaginosis, *Trichomonas vaginalis*, and syphilis. All pregnant women at 16-24 weeks gestation attending the clinic for antenatal check-up irrespective of symptoms were enrolled. Socio-demographic information and obstetric history were obtained from each enrolled subject. High vaginal swabs and serum samples were tested for bacterial vaginosis, and *T. vaginalis* and syphilis respectively. In total, 284 pregnant women were enrolled. Of them, 17.7% had bacterial vaginosis, 1.4% had *Trichomonas* infection, and 3% had syphilis. The prevalence of bacterial vaginosis was higher in women with low socioeconomic status. Proper attempt is needed to catch up the problems with possible solution & well of the total situation.

**148. Begum F; Shamsuddin L; Hussain MA; Chowdhury TA; Rahman M; Das TR. Effect of oestrogen replacement therapy on bone mass in post-menopausal Bangladeshi women. *BMRC Bulletin.* 2001; 27(3): 103-111.**

The objective of this study was to determine the rate of bone loss and to assess the preventive role of estrogen therapy on bone mass in post-menopausal women in our country. A total of 106 post-menopausal women who attended the gynecological out patient department of Bangabandhu Sheikh Mujib Medical University Hospital were included in this study. This was a prospective case-control study, the period of the study was March 1997 to December



1999 and the duration of menopause was from less than 1 year up to 10 years. None had a history of metabolic bone disease or had any co-existent disease known to affect bone mineral metabolism and all were non-smokers. Bone mineral density (BMD) was measured using single photo on absorptionmetry at distal third of radius of non-dominant hand at the beginning of the study and thereafter at three-month interval up to 1 year. The female population comprised 48.66% of total population, of which 10.30% were above the age of 49, many of them were post-menopausal. Out of studied 106 patients, 60 were cases and 46 were controls. Of the cases 23 (38.3%) had natural menopause and 37 (61.7%) had surgical menopause. Of the controls, 24 (52.2%) had natural and 22 (47.8%) had surgical menopause. Baseline BMD was similar in both groups. Mean BMD showed significant difference between cases and controls at the end of 1 year. There was increased in bone mineral density in cases who gained 4.29% bone mass at the end of 12 years whereas the control group showed linear loss of bone density and lost 5.26% of their bone mass. The women in the first group were given either in conjugated equine estrogen alone (surgical menopause group) or conjugated equine estrogen plus cyclical progesterone (natural menopause group). Results showed that there was 4.29% increased in bone mineral density in women who received hormone replacement therapy (HRT). This increase was 5.23% in early and 3.56% in late menopause group. Women with natural menopause gained more bone mass (4.22%) than women with surgical menopause (3.9%). Our results also showed that women who denied HRT lost bone mass (4.26%) the loss was more in those with surgical menopause (6.24%) than those with natural menopause (4.87%). Therefore it could be concluded that post-menopausal hormone replacement therapy prevents bone-loss. However, to evaluate the beneficial effect of long-term HRT, further studies with larger samples should be recommended.

**149. Begum RA. A Review of reproductive health situation in Bangladesh. *JOPSOM*. 1999; 18(1): 66-73.**

This article was attempted to review the reproductive situation of Bangladesh. Here the writer collected data and information from a lot of articles and from statistical organization. The concept of reproductive health (RH) is comprehensive which includes all health events related reproduction in the life cycle. The RH situation in Bangladesh still remains unsatisfactory despite some improvement in some aspects of health. The unacceptably high rates of maternal and child mortality and morbidity compared to other countries reflects the situation. A remarkable success has been achieved in the declined of fertility and increase in contraceptive prevalence rate (CPR); however, the population growth rate is still high. The high rates of abortion, maternal malnutrition, RTIs, STDs are indicators of poor RH. Adolescent reproductive health is a major concern. The percentage of teenage mothers is quite high (33%) and teenage motherhood is more prevalent in rural areas than in urban areas, 34.8% and 20.2% respectively. Early marriage and teenage pregnancy contributing significantly to maternal malnutrition and low birth weight babies.. The maternal mortality rate is 4.5 per 1000 live births according to BBS. The HIV/ AIDS situation is still under control, but there exits potential threat of spreading the fatal disease rapidly. The government of Bangladesh has officially adopted the ICPD (International Conference on Population and Development, Cairo, 1994) definition of RH and developed a comprehensive plan of action in light of the recommendations of the conference. Concerted efforts should be given in improving the existing situation. Standardization of the service delivery system is of utmost importance. The health care providers need to improve their skills and knowledge regarding RH. The monitoring and supervisory and logistic supports require strengthening. Malnutrition, the root

cause of maternal and child deaths and diseases should be given top priority. Preventive health care should be emphasized rather than clinical care. People's awareness regarding RH will have to be increased through information, education and communication.

**150. Bhuiya I; Rob U; Chowdhury AH; Rahman L; Haque N; Adamchak S; Homan R; Khan ME. Improving adolescent reproductive health in Bangladesh. Dhaka: Population Council, 2004.**

This research project was launched in north-western Bangladesh with the objective of preventing adverse outcomes and promoting healthy lifestyles among adolescents by providing reproductive health education and services. The population Council, in collaboration with Urban Family Health Partnership (UFHP) and its three non-governmental service delivery partners, working in urban sites of Pabna (Site A), Dinajpur ( Site B), and Rangpur (Site C) carried out the study. Sites A and B were intervention sites while Site C served as a control. A Quasi-experimental design with pre-post measurements and two experimental strategies were used. Two population based surveys among about 6000 adolescents were carried out; the baseline and end-line data were collected during February to April 2000 and April to June 2002 respectively. Bi-variate and multi-variate analysis were done to measure the effects of the interventions. The knowledge of contraceptives improved in both intervention and control sites, with the greatest improvement seen in Site A. The effect of the interventions on knowledge of the fertile period and potential health risk of early pregnancy was also clearly observed with greater improvement in Site B than Site A and no improvement in the control site. The analysis also revealed a more positive attitude towards health facilities for contraceptive and STI services compared with pharmacies a source of supplies and services. While few unmarried males reported having ever had sex, the proportion increased significantly in the control area which it remained statistically unchanged in the intervention areas. The use of condom also increased in the intervention sites compared with the control with greater improvement in Site B than Site A. The Study findings recommended that a combination of reproductive health intervention at the school, community and health facility levels, accompanied by community sensitization, is needed to effectively respond to adolescents reproductive health needs and future interventions should be designed focusing on unmarried sexually active adolescents.

**151. Bhuiya I; Rob U; Chowdhury AH; Khan ME; Rahman L; Adamchak S. Improving sexual and reproductive health of female adolescents in Bangladesh by providing information and services. *Population Review*. 2006; 45(2): 60-71.**

The study was carried out to assess the feasibility of providing sexual and reproductive health (SRH) information and services, and to assess its impact on knowledge, attitude and service utilization. A quasi- experimental design with pre- post measurements was used. Interventions included training of teachers, facilitators and service providers for providing SRH information and services to adolescent in schools communities and health facilities respectively. Interventions resulted in a significant increase in the level of SRH knowledge among adolescents compared to the control site. Adolescents who were exposed to the interventions showed more favorable attitudes towards the use of health facility for contraceptive services and use of condom by unmarried sexually active adolescents than the not exposed in the experimental site. This was also translated into the increased used of health facilities for SRH services. Privacy and less waiting time are the determinants of SRH service utilization of adolescents. The study findings also provide strong evidence for the need of targeted SRH

education among adolescents, as the fewer adolescents were aware of SRH issues. A small proportion of adolescents were about the risk associated with teenage pregnancy. The Bangladesh Government should take steps its huge education and health infrastructures for imparting SRH information and services by equipping providers of services to effectively impart SRH information and services to adolescents.

**152. Bhuiyan RH; Rahman S; Rahman QM; Kabir H; Hossain M. Knowledge and behaviour of ANC, delivery and PNC service users and non-users. Dhaka: NIPORT, 2006.**

The objectives of this research is to ascertain the level of awareness about ANC (Anti Natal Care), deliver care the PNC and its importance among the users and non-users, reasons for not using existing ANC, delivery care and PNC, formulate policy recommendation to increase the knowledge and change the attitude of the mothers for increasing the use rate of ANC, delivery care and PNC. Study population has been considered all the service providers, Medical Officer, FWVs, SACMO/Mas, Nurses, pregnant women and post-delivery women of areas are selected as study population and non-users. Moreover, relatives of mothers/community members are also considered as study population. The data of the study have been collected from primary, secondary and tertiary sources. The primary data were collected from interviewed to the selected responds, the secondary sources are from Bangladesh Maternal Health Services and tertiary source is the published report, newsletter, journals etc. Socio-economic differences between users and non users were not very evident. Nationally in the country Muslims form about 85% and Hindus form the 15%. But present study shows, out of 15% of Hidus, 33.8% use the service center while 63.7% Muslim use them. Analysis of the response it seems that 45% users expressed that within one year of marriage first child should be taken while only 2% non-users spoke in favor of this. About 54% on non-users of services and 85% of users had discussion with some one, on planning of their first pregnancy. Seventy-seven percent of non-users and eighty-six percent of the users knew about service available in different clinics. The field workers and clinic personnel be encouraged to visit the clients on regular basis and inform beneficiary on benefit of utilization service clients. They should give detailed information of benefit of care during antenatal, post natal and delivery by trained person. Village health committee and community may be formed for motivational work. Necessary steps should be taken to supply proper medicine and improvement by the service providers.

**153. Biswas DK; Siddiqua SA; Hossain S. Knowledge and attitude of husbands of eligible couple regarding antenatal care and safe delivery in a selected rural area of Bangladesh. *JOPSOM*. 2005; 24(2): 15-25.**

The purpose of the study was to determine the level of knowledge and attitude of husbands of eligible couples towards antenatal care and safe delivery in a selected rural area of Bangladesh. The study carried out with the cross-sectional method to conduct among 142 husbands of eligible couples. Samples were taken by systematic sampling method. A structured pre-tested questionnaire was used and data were collected by face to face interview. The study was conducted in the villages of Tabra and Kamalprotap of Bansgram Union in Narail district from March to June 2002. The results of the study revealed that mean age of the respondents was 40.5 years with SD  $\pm$  12.25 years, of them 43.66% had primary education, 58.44% were cultivator. About 90% respondents themselves were the principal decision-makers in family. Regarding antenatal care 75% had poor knowledge. About five danger signs

of pregnancy and safe delivery 81.70% had no knowledge. Seventy one percent and 65.49 percent had positive attitude towards antenatal care and safe delivery respectively. Fifty percent respondents ensured little care about ANC in case whose wives were pregnant, 85.72% of them had an intention to conduct delivery of their wives at home and 14.28% intended to conduct delivery in institution. The respondents' level of knowledge about antenatal care and safe delivery were not satisfactory but their attitudes were favorable regarding ANC and safe delivery. Dissemination of proper knowledge among the family leaders and to increase awareness is necessary to success for safe motherhood intervention. Proper implementation of IEC and BCC program is very important in this regard.

**154. Choudhury KN; Rashid M; Haque MA. Occupational physical activity and pregnancy outcomes among primiparous women in Bangladesh. *JOPSOM*. 2005; 24(2): 1-8.**

The study was initiated to look into the relationship between physical activity and pregnancy outcome among primiparous women in Bangladesh. A total of one hundred and forty-nine mothers and newborns were included in this study. The Global Physical Activity Questionnaire (GPAQ) was used for collecting information from mothers. The pregnancy outcomes were measured after their delivery. The study was conducted in The Maternal and Child Health Training Institute (MCHTI) Azimpur, Dhaka from 1<sup>st</sup> January to 31<sup>st</sup> December 2004. Occupational physical activity of the mothers showed that 60.4% had sedentary occupation and 39.6% had non-sedentary occupation. Physical activity influenced the pregnancy outcomes between sedentary and non-sedentary mothers ( $p < .05$ ). The sedentary mothers had babies weighing comparatively more ( $3198.44 \pm 323.54$  gm vs.  $2883.22 \pm 429.70$  gm), prolonged labor period ( $8.20 \pm 2.52$  hrs vs.  $7.15 \pm 2.12$  hrs) and longer length of gestational age ( $39.05 \pm 1.23$  wks vs.  $37.05 \pm 1.28$  wks). The mean birth weight of the babies increased with sedentary physical activity, but no effect was seen in birth length of the baby. Physically active mothers delivered more normal vaginal delivery than sedentary mothers ( $p < .05$ ). The study also indicated that active mother had comparatively normal weighing babies and shorter labor period, but no effect on length of babies. They had more normal vaginal delivery than the sedentary mother. The mean birth weight of the babies increased with sedentary activities. Appropriate physical activities in terms of maternal weight control and fitness have significant long-term public health benefits.

**155. Chowdhury AMR; Mahbub A; Chowdhury AS. Skilled attendance at delivery in Bangladesh: an ethnographic study. Dhaka: BRAC, 2003. (Research monograph series ;no.22)**

In Bangladesh, the health services are extremely inadequate. Maternal and neonatal health is serious public health concerns. According to government statistics, maternal mortality rate stands between 4.2-5.0 per 1000 live births or approximately 28,000 deaths per year (UNICEF 1999). A most recent survey based on a large national sample estimated the material mortality to be in the vicinity of 320-400 (NIPORT 2002). According to the former estimate, almost 50 mothers die each day during delivery, orphaning a large number of children at least as large as this. Of the children born to mothers die in childbirth in Bangladesh, 95% die within one year. The study explores the situation of delivery care together with ante partum and postpartum conditions from a comparative perspective in rural and urban Bangladesh. Identify the barriers and opportunities in seeking delivery care from users' perspective, experiences and views of the providers with regard to barriers and opportunity for the poorest women in accessing their

services. In the recent past Bangladesh has made tremendous progress in many of its development parameters. Various estimates suggested that the maternal mortality ratio was somewhere between 4.3 and 6.1 per 1000 live births (GOB 1998). A recent study has, however, found it to be between 320 and 400. The challenge for a country like Bangladesh is how to increase this proportion further and faster. This study has looked at the use of skilled attendance at birth in Bangladesh. There is a serious equity problem in accessing obstetric care in the country and this study thus paid special emphasis on the perspectives of the poorest women in this regard.

**156. Chowdhuty S; Ashrafunnessa; Khatun S; Sarkar NR. Comparison of bone mineral density between premenopausal and postmenopausal women in Bangladesh. *BMRC Bulletin*. 2001; 27(2): 48-54.**

This study was aimed to compare the bone mineral content of pre-menopausal and postmenopausal women in a group of study population of Bangladeshi women. This cross sectional study was conducted in the Department of Obstetric and Gynecology of BSMMU, Dhaka during July 1997 to June 1998. Two hundred and twenty Bangladeshi pre-menopausal and post menopausal women aged from 35 to 55 years were studied to compare the effect of age, parity, socioeconomic status and nutritional status on bone mineral density (BMD) of distal and ultra distal ends of radius and ulna. A bone densitometer (single photo X-ray absorption entry, DTX100, USA), was used to measure the BMD. BMD was calculated by taking the mean of the two sites and is expressed in g/cm<sup>3</sup>. Bone mineral density in post menopausal women was significantly lower than pre-menopausal women. Parity and number of family members were significantly greater in post menopausal women compared to pre-menopausal women. Height was significantly lower in post menopausal women. After adjustment of various biological factors in multiple linear regressions, body mass index showed negative relationship with age and positive relationship with weight. Peak BMD was observed upto the age of 40 years and there after declined and dropped after menopause. The study said in its conclusion that bone mineral density is greater in pre-menopausal women than post menopausal women and remains high up to 35-40 years of age, and declines to older age. BMD was positively correctable with weight of women. Pre-menopausal women have higher height than menopausal women though height does not have correlation with BMD in this study.

**157. Chowdhury S; Chowdhury TA; Nessa A; Ali S. Impact of age, parity and menopause on bone mineral density in a group of Bangladeshi women. *Bangladesh Journal of Medical Science*. 2002; 8(1): 30-33.**

The objective of this study was to determine the peak age of BMD and to evaluate the influence of age, parity and menopause on BMD in a group of Bangladesh women. This was a cross-sectional study done at the Institute of Post-Graduate Medicine & Research (IPGMR, Now BSMMU). A total of 400 Bangladeshi women were randomly selected as a sample after fulfillment of the selection criteria of this study. The client who had bone-related disease, hysterectomy, current pregnancy, or more than 6 months and also on steroid medication was excluded from this study. The mean age of the study population was 41.91±14.6 years, median 39 and the range was 20-81 years. The mean age of menopause was 48.8±3.2 years. The mean age at menarche was 12.7±1.0 years, median 13 and the range 10-15 years. The mean age at first pregnancy was found to be 18.8±4.0 years, median 18 and the range 14-37 years. The parity and mean family members were found to be 4.5±2.9 SD and 6.4±2.6 SD respectively.

The mean weight in kg of the subjects was  $49.2 \pm 9.8$ SD, median 48, the range 28.77. The height in cm was  $151.4 \pm 6.2$ , median 252 and range 130-172. The peak BMD was observed at 20-30 years of age and declined after 45 years. BMD was significantly and negatively correlated with age ( $r=0.87, p<0.001$ ), parity ( $r=0.71, p<0.001$ ) and menopausal women had lower BMD than pre-menopausal ( $p<0.001$ ). It also showed that women with moderate physical workload had significantly higher BMD than those with light physical workload ( $0.43 \pm 0.05$  vs  $0.37 \pm 0.09, p<0.01$ ). In post-menopausal women's BMD were significantly lower than that of pre-menopausal women ( $0.60 \pm 0.05$  vs  $0.48 \pm 0.10, p<0.001$ ). BMD of distal radius and ulna reached the peak at 20-30 years of age and declines after menopause and with grand multiparity. But moderate physical workload and mid arm circumference got a definite bone protective effect in women. This study found that one mineral density peaks between 20-30 years and remains at plateau up to 40 years and then declines after menopause with advancing age in a sample of Bangladeshi women standard. It also found that BMD was lower in post-menopausal than pre-menopausal women, grand multiparity was negatively related to BMD, moderate physical work load had positive effect on bone mineral density and mid arm circumference and age remain as strong determinant of BMD when other variables were controlled.

**158. Chowdury SB; Nasrin B. Perinatal outcome of rhesus negative isoimmunized pregnancy in Bangabandhu Sheikh Mujib Medical University (BSMMU). *Bangladesh J. Obstet & Gynaecol.* 2003; 18(2): 51-55.**

This article was attempted to see the peri-natal outcome and evaluate the management of Rh-negative isoimmunized pregnant cases admitted in Bangabandhu Sheikh Mujib Medical University (BSMMU). It was a cross sectional study conducted in the Department of Obstetrics and Gynaecology, BSMMU during the period of July 1998 to June 2002. All the rhesus negative isoimmunized pregnant cases admitted during this period were included in this study. After admission, they were observed and monitored clinical examinations, by performing weekly Rh-antibody titer and ultra-sonogram. In total 52 Rh-isoimmunized pregnant cases were admitted between 29-40 weeks of gestation. Exchange transfusion was needed in 46 (88.46%) neonates and other 5 (9.61%) responded to phototherapy. None of the neonates developed kernicterus. One (1.92%) neonates, with features of hydrops foetalis before 28 weeks of pregnancy died of 30 minutes after birth, two (3.84%) died due to prematurely and one (1.92%) died due to septicemia. In concluding remarks, it may be said that raised Rh antibody titre alone is not an indication of termination of pregnancy. Within the case study, up to antibody titre 1:64 (the critical level) no neonatal death occurred due to jaundice or kernicterus. A preterm baby management is very limited but also it is an expensive in this country. It is although better to continue pregnancy up to 34 weeks with close monitoring if Rh antibody titre remains below or at critical level and USG showed no feature of foetal affection. Timely referral to a center where facilities for exchange transfusion and management of pre-maturity are available will improve peri-natal outcome.

**159. Chowdhury SNM; Alam SMN. Beyond reproductive years: an exploratory study on women's health after menopause. Dhaka: Population Council, 2000.**

That main objective of the study was to build an in-depth understanding of the transition into the menopause and how women's reproductive health changes through the menopausal years and their health concern need and support seeking behavior. Three villages of Bhawal Mirzapur Union of Gazipur district were selected for the study. A sample of 43 women whose

menstruation has stopped completely for more than a year was selected randomly from a different group. In-depth interviews, FGD and key informant interviews were used for collecting data. The findings expressed that most of the informants were illiterate, belonging to middle and lower economic strata had no income and two-third of them were fully dependent on husband's and son's income. Early marriage (two-third of them) before puberty was common. Most informants were high parity women with an average of seven pregnancies and had all their deliveries at home by untrained personnel. More than half of the informants (27 out of 43) had all live births and some (16 out of 43) given history of still births. Miscarriage and induced abortion in addition to live births, most of the respondent aware of menopause that happened when one grew old. Reaction towards menopause was varied and no definite pattern was found. The reaction can be described as one of relief, anxiousness, sadness and surprise. A variety of health problems (inability to lead an active life and also inability to perform daily course etc.) sometimes linked with menopause. A common belief was in the community that one's eyesight was affected with the onset of menopause. Most women (38%) mentioned they were currently suffering from reproductive health problems. Most commonly mentioned that was vaginal discharge. From the summary of the findings it could be concluded that women were in poor health after menopause, and that they attributed that fact to menopause itself. However, there were not very precise about their health needs. There was a lack of awareness regarding menopause and its sequel. Thus, women or their husbands sought cures for the problem. The study endeavored to get an in-depth understanding of women's health through this exploratory study indicated that the need for large-scale studies on aging women to validate the findings. Efforts should be undertaken to sensitize the policy makers, program planners, researchers and donors to give greater emphasis aging women while also undertaking a life cycle approach to reproductive health.

**160. Datta AK; Bairagi R. Improvement in female survival: a quiet revolution in Bangladesh. *Asia-Pacific Population Journal*. 2000; 15(1): 19-40.**

The objectives of the study were to examine the time trends of mortality and make a relative comparison of the mortality change between males and females in different age groups in a rural area in Bangladesh. Cohort approach was followed in this study to calculate mortality. But it was necessary to inform that this method was not followed here strictly. Rather for a calendar year, it was defined as the ratio of the number of deaths of children less than 1 year of age at the time of death in the year to the number of births in that year. Data for the study came from the Matlab Demographic Surveillance System (DSS) of ICDDR,B. The study results revealed that the female mortality was still high than male mortality for the age groups 15-34, although a higher mortality rate for males in the age group 35-49 was likely to be a reflection of biological as well as higher occupational hazards for males. The mortality situation improved in both areas in every age group during the study period 1970-1995. However, the improvement was much greater for females in infancy and in the years 1-4 and 5-14 in comparison with other age groups. The gains in life expectancy over the study period were greater in females than males. But before 1985, life expectancy was higher for males than for females. The study suggested that the planners and policy makers need to find ways and means for promoting a more egalitarian attitude towards females, in addition to improving health care interventions to maintain the trend of improvement in female survival and to eliminate excess female child mortality.

**161. Dey SK; Sobhan S; Rahman MH. Maternal hydronephrosis in pregnancy: an ultrasound study of 414 patients. *Bangladesh J. Obstet & Gynaecol.* 2003; 18(2): 67-69.**

This study was aimed to evaluate kidneys in 414 pregnant women during prenatal ultrasound examination to assess the prevalence of maternal hydro-nephrosis and if present, its side and grade of involvement, as well as its relation to gestational age, parity and amount of liquor. A total of 414 patients were purposively studied who had undergone ultra-sonography in Nuclear Medicine Center, Faridpur for pregnancy evaluation between June and October 2002. Details of pregnancy as well as maternal kidneys were examined using 3.5 MHz curvilinear transducer in supine as well as lateral position of mothers. The three trimesters were calculated for the evaluation. A pregnancy extending beyond the 42 weeks were considered a post-term gestation. Gestational age was determined by measuring crown rump length (CRL) and biparietal diameter (BPD). Parity of the mother was noted in 370 patients by history taking (Prime=146, Multipart=224) and its relation with maternal hydronephrosis was correlated. It was found in this evaluation that two patients had solitary left kidney showing grade 1 hydronephrosis in each. Among the rest 412 patients, maternal hydronephrosis was found more in the right side, both in prevalence and grade of involvement. Hydronephrosis increases along with the advancement of gestational age. It was relatively more in primi than multiparas and in patients with ployhydramnios than in oligohydramnios. Hydronephrosis in mother during pregnancy is the result of smooth muscle relaxation by hormonal effect as well as pressure on the uterus by the enlarged uterus.

**162. Dhar B; Mowla G; Kabir DME. Newborn anthropometry and its relationship with maternal factors. *BMRC Bulletin.* 2003; 29(2): 48-58.**

The study was aimed at examining the relationship between birth weight and maternal socio-demographic anthropometric and hematological factors. A cross sectional study was conducted in a public maternity hospital, Dhaka Bangladesh on 316 pregnant women and their new born. The study revealed that about 15% of babies were of low birth weight. The mean birth weight was found to be 2889+ 468g. The LBW was more common in younger (<20 years) and odder (>30 years) mothers low income group, day laborer and those with little education. The mean birth weight of male babies was on an average 138 gm more than that of female babies (P<0.032). The babies of the mothers who had at least three antenatal visits found to be 191 g. heavier than those who had less than three or no visit. The study also showed that birth weight increased linearly as gestational age increased. The mean birth weight of babies of primi para was 107g. The incidence of LBW were found to be 23.3% and 10.4% respectively for maternal hemoglobin level of <9g/dl and >12g/dl. It was revealed that higher maternal anthropometric means were associated with higher birth weights. Logistic regression analysis supports that gestational age at birth, maternal hemoglobin level and post partum weight were the important determinants of low birth weight. The study recommended that earlier caesarian operation should not be followed if not needed. To improve the maternal hemoglobin status, strategies to be developed for iron supplementation to all pregnant women, dietary improvement, fortification of food and helminthes control.



**163. Elahi M; Chowdhury K; Nahar L; Rashid M; Akthar S. Collaborative reproductive epidemiology research: patterns and predictors of caesarean sector in Bangladesh. Dhaka: BIRPERHT, 2004.**

The study was designed to determine the caesarean section rate in hospitals setting to compare the complications rates of vaginal, elective and emergencies CS, to determine average costs to the patients for vaginal, elective and emergencies Cs deliveries; and to identify predictors for elective and emergency Cs for socio-demographic characteristics of the patients as well as the providers. This was a prospective study by surgical section at maternal and child health training institute (MCHTI) during April 2002 to April 2003. Among the inpatients in MCHTI, 272 elective and 386 emergency CS deliveries were systematically selected. Complications of delivery were recorded at two follow –up visits. Two physicians trained on basic interview technohird and physical examination of subject. The physical examinations of mothers and the newborns were done bedside by the research physician who was assisted by a hospital attendant. A total 8733 deliveries were conducted with an overall CS rate of 32 %. The incidence of major maternal complications rate among vaginal deliveries was over 9% as and when needed to about 5 % for each of elective and emergency CS. Neonatal complications were 22 % in elective 36% in emergency and 14 % in normal vaginal delivery cases. The key indicators of elective CS were over dated pregnancy (54 %) and cervix (40%). Indicator of emergency CS were uterine inertia (28%), prolonged labor (25%) rupture (22%) and failed medical inductions (21% ). Among socio and demographic predictors, the likelihood of both elective and emergency CS consistency increased with increased maternal age and decreased with increased parity. Women in regular service underwent CS 3 times more than the housewives. Both emergency CS (48%) and elective CS (54%) were excessively utilized in this study. The study findings recommended that multi-center studies should be undertaken in different setting.

**164. Elahi ME; Chowdhury K; Akhtar S; Begum R. Influence of tobacco use on reproductive outcomes. Dhaka: BIRPERHT, 2003.**

The study was conducted to assess the distribution of birth weight of children born to mothers who use tobacco during pregnancy and those who do not and to investigate the influence of tobacco use during pregnancy or other reproductive outcomes such as stillbirth, live birth, and neonatal (within 28 days of delivery) morbidity and mortality and to evaluate the impact of tobacco use by mother or neonatal loss with 28 days of delivery. In a community based cohort study among pregnant women (>20 weeks gestation), 267 consumers of smokeless tobacco and 488 non-consumers were followed up to compare height-weight of their newborns. The subjects were randomly selected from among 307 consumers of smokeless tobacco (chewers or users of tobacco preparations as dentifrice) and 1107 Non- consumers of tobacco, identified in a door to door survey, in 92 slums in Dhaka city. A team of and female interviewers and 32 traditional birth attendants followed up the subjects at home during August –December 2002. The study showed that a large fraction, 105 (40.9%) said about the use of tobacco leaf and 56 (21.8%) informed to take ‘gool’ (Tobacco powder). Only 9 women (2.2%) reported to do smoke. Higher proportion of tobacco consumers were 30 years of age and had above 3 life time pregnancies as compared to non-consumers. About 45% tobacco consumers did not seek any antenatal care as compared to 32% of non-consumers. In both groups, home delivery was almost universal (over 96%) and about 80% of the deliveries ware attended by traditional birth attendants, there was a significantly higher proportion of low birth weight (<2.5 kg) among consumers than among non-consumers (39.18+/-3.50 vs. 24.52+/-1.99%, p<0.05). Tobacco,

particularly smokeless tobacco consumption during pregnancy was common among the slum dwellers in Dhaka city. The tobacco consumption habit of mothers during pregnancy had effect on increased still birth and low birth weight babies. There is a need to buildup awareness in the community about harmful consequences of using tobacco including smokeless tobacco during pregnancy. Further studies with larger samples may be carried out in the community before implementation.

**165. Gani MS; Ahmed SM. Growing up and reproducing: knowledge and practices of young people in Bangladesh. Dhaka: BRAC, 2006.**

This study carried out by BRAC attempts to fill in the knowledge gaps by collecting data from a nationally representative sample on different aspects of adolescent and youth lives including socio demography and economy, education health including reproductive health and sexuality, life-style, social capital, time use and work, and gender and role model. The data were collected employing a two stage sampling procedure in 2005. A total of 361 primary sampling unit or clusters were used, 277 in rural areas and 84 in urban areas using two types of questionnaires: the household and the individual adolescent questionnaire. The results of the study are that almost 60% of the population was below 25 years of age and less than 6% of the population was aged 60 years or older. The urban population showed greeted literacy level (63% vs. 46%). The rural population married early (57%) compared to their urban counter parts (53%). Adolescents (10-19) were more knowledgeable about visible physical characteristics such as increase in height and weight and appearance of beard and moustache (males more than females), but not such characteristics as increase in breast size. Above 80% of the respondents reported that they had already started menstruation or experienced nocturnal emission. Around 67% of them were aware about emotional changes occurring during this period of adolescence, males significantly more than the females. The prevalence of marriage, increased with age, especially in case of females. In youth (20-24) around 69% of the females married in contrast to only 30% among the males. First marriage at 18 years was mostly reported for the females (70% vs. 3%). At least one modern family planning method was known to almost all respondents and at least one traditional method was known to 23% of them. Overall 18% of them were using at least one method, with 17% a modern method and only one percent a TM (traditional method). Pill was the most used method among the respondents (12%). Data showed that in early two third of the even married young females had already begun childbearing at 19 years or below with a median age of 17 years. The government hospital, health centres and clinics were identified as the most reliable antenatal check-up by the study population (91.3%). About 78% of the respondent received two or more TT injections during her first pregnancy while another 12% received one injection. It is recommended that extra attention needs to be given to improve the situation identifying specific areas and interventions should be informed by this knowledge and designed according to their felt (and un-felt) needs.

**166. Gazi R; Mercer A; Khatun J; Islam Z. Effectiveness of depot holders introduced in urban areas: evidence from a pilot project in Bangladesh. *J Health Popul Nutr.* 2005; 23 (4): 377-387.**

This evaluation study was carried out to: (i) establish a baseline for measuring the impact of activities of depot holders on a comprehensive evince of indicators in the long term, (ii) make a preliminary assessment of the impact on the use of selected services of the essential services package (ESP) and other indicators at the end of the part of phase, (iii) assess the cost of

introducing depot holders and running their activities for a year. Data were collected from the baseline and end of pilot household surveys, together with service statistics from the intervention and comparison areas, were used for assessing the changes in clinic use and commodity distribution. The results of the study evidence that the depot holders transferred knowledge to women in the community, provided services, and referred women to clinics run by non-governmental organization (NGOs). The household surveys showed that the proportion of women who had considering from a depot holder about family planning, had received information on antenatal care, tetanus toxoid (TT) vaccinations and ARI, had been referred to a satellite clinic for child immunization, or supplied with ORS and contraceptives was also the highest in Sherpur. There was a large increase in the distribution of pill cycles and ORS package in Brahmanbaria and in Dhaka. In all cases a decrease in clinic supply was more than offset by the new distribution by the depot holders. The proportion of condoms pill cycles and ORS packets distributed by the depot holders in the intervention years were 55%, 37% and 22% respectively in Sherpur, 41%, 25% and 97% in Brahmanbaria and 37%, and 84% in Dhaka. In fine, the study suggested that further evaluation should assess the quality of their services, a wider range of indicators of use and coverage of services, poverty focus and cost effectiveness.

**167. Haider SJ; Ali MN; Anwar T; Rahman M; Talukder AKMLR; Akhter R. A Study on behavior change communication (BCC) strategy for urban reproductive health. Dhaka: BCC Unit, DFP, 2001.**

The study carried out to develop appropriate BCC strategies aimed at the urban/floating population and to outline/suggest interventions based on the strategies. The study was focused as qualitative study introducing the methods of document analysis; intensive interviews with relevant stakeholders, FGD, participatory rapid assessment and peer review workshop conducted in the six Divisional towns in Bangladesh. The study showed that family planning especially services for the poor and disadvantage were more organized and efficient in the rural areas than it was for urban poor. The 1991 census estimated 22% of country people were in urban with annual incremental growth rate of 4.67%. About 61% of the urban population of the country living under poverty line, there were reportedly 44 large slums and 2000 small or pockets slums in Dhaka. These slum dwellers were victims of extremely poor environment and unhealthy health conditions, facing various social hazards also. Violence was common features in there. Illiteracy rate in the slum was 70%. Forty-percent children did not attend any school. Leisure and recreation scope was negligible. There was also a numbers of floating people who had no fixed jobs or dwelling place. Ill health with lack of public awareness, unhygienic habits and sanitation were resulted in high rates of morbidity and mortality. Coverage of EPI was lower than national coverage among hardcore poor. About three-fifth of slums populations were below 20 years and average age of marriage was 15 years for women and 23 for men. At least 50% slum women did not know whom and where would go for treatment/advice remedies of side effect of oral pill or others. The study was also discussed with garbage disposal. Integrated development program of the urban slum was providing services for them. Many mothers were working outside the house for keeping a contribution. Read consultants reviewed and examined the media productions (Radio/TV), currently on air in order to assess the current status of information and services on RH of urban poor. The study recommended that the program should be some sort of a combination of sports and discovery channels with health programs added to it. It should have to encourage GO-NGO

and private sector partnerships for BCC program implementation; have to involve media experts and opinion of leaders in the design and planning of BCC.

**168. Haleem N; Begum R; Siddiqua SA; Sabeka MM. Reasons for seeking menstrual regulation among primi gravida attending Mohammadpur Fertility Services and Training Center (MFSTC). *JOPSOM*. 2003; 22(2): 28-32.**

This study aimed to find out the reasons of seeking menstrual regulation (MR) among the primi-gravida attending a fertility clinic. The study was conducted from March to June 2000 at the Mohammadpur Fertility Services and Training Center (MFSTC), Dhaka from the RCH Department of NIPSOM. This cross sectional study included 39 primigravida who was attending the center for menstrual regulation. Data were collected by face to face interview using a structured pre-tested questionnaire. The study results found that most (46%) of the respondents were teenaged (15-19 years), literate (66.70%), housewives (71.89%) and newly married (79.50%). Only ten respondents (25.6%) were found to use contraceptives. Many of the respondents came for MR after 6 weeks if amenorrhoea. The reasons for seeking MR were recent marriages (30.8%), abandoned/divorced (15.4%), husband/the couple does not want (18%), studentship (5.2%), infidelity (7.80%), and being a single mother (5.20%). The study also found many of the respondents were not aware of correct timing and complications of MR. Unless properly informed, these newly married women would seek repeated MR in their future pregnancies. Therefore proper counseling and education programs as well as awareness raise through mass media are desirable to combat the situation.

**169. Hasan KZ; Pathela P; Alam K; Podder G; Faruque SM; Roy E; Haque AKMF; Haque R; Albert MJ; Siddique AK; Sack RB. Aetiology of diarrhoea in a birth cohort of children aged 0-2 year (s) in rural Mirzapur, Bangladesh. *J Health Popul Nutr*. 2006; 24(1): 25-35.**

The objective of the present study was to investigate the etiological roles of a vast array of diarrhea including ones discovered relatively recently, in the context of a rural community based birth cohort study. As research methods, stool specimens or rectal swabs were collected from diarrhoeal cases over two years and routinely on a monthly basis stool samples from children with diarrhea were compared with stool samples from children without diarrhea to calculate rates of isolation and pathogen city of agents. In total 1,750 stool specimen from diarrhea patients and 5,679 stool specimen from children without diarrhea were tested. The findings of the study reflect the problem of diarrhoeal diseases at the community caused which has implicated for health planning. The most commonly isolated pathogens from all specimens were interotoxigenic. ETEC (ST and LT ST toxin) enterotoxigenic Bactericides fragile shigella and shigella and rotavirus were associated more with disease than with asymptomatic infections. Antilogy specific infections were associated with acute episopes. The isolated enter pathogens were diarrhea only the same as those found in other tropical rural settings. Entarotoxigenic B fragile was also identified as a pathogen. Ongoing diarrhea efforts focusing on shigella, rotavirus and ETEC would be useful. In addition to ongoing vaccine efforts and use of oral dehydration therapy remain important for reducing the burden of diarrheal acute diarrhea in rural Bangladesh.

**170. Hashima-e-Nasreen; Cash K; Chowdhury M; Bhuiya A; Ahmed SM. Reproductive and sexual health promotion in a sensitive socio-cultural environment: developing module for the grassroots. Dhaka: BRAC, 2000.**

The goal of the study was to improve the sexual and reproductive health of rural women, men and youth in Bangladesh. The target population was a representative sample of the rural population. Initial qualitative in-depth interviews with 65 different women, men, boys and girls revealed significant sexual health problems and experiences and little knowledge about treatment and prevention. Data from these initial interviews was transformed into a series of flip charts that contained both sex education information and picture stories that mirrored risk behavior. Because of the sensitive nature of the topics, only those who had perceived and 1890 community people were trained. It was observed that the qualitative evaluations of health providers revealed significant changes in their knowledge and beliefs about sexual health and diseases. Health providers integrated the program into their ongoing work. Furthermore, they reported improvements in their self-confidence, business, and personal interactions with their family members and with their clients due to this programme. The study confirmed in conclusion, this programme demonstrated that a gender-sensitive sexual and reproductive health initiative could be a positive force for change in rural Bangladesh settings.

**171. Hossain MI. Mapping DBRHC project site Raipur. Dhaka: NIPORT, 2006.**

This study was an initiative to create a database aiming to provide user friendly information on Raipur Upazila a DBRHCP site. This will facilitate coordination among the implementing partners involved with DBRHCP and reduce the gap between implementing partners and stake holders and targeted community people. From 5<sup>th</sup> to 10<sup>th</sup> August 2006 one program Associate from RTM international visited Raipur to collect data of that Upazila in connection with the DBRHCP. The program Associate met and interviewed UNO, UFPO, UHO, DDFP-Lakshmipur UEO and UNFPA project officials during that period and collected data on Raipur purshava and Raipur sadder union. Three local data collectors were asked to visit every pharmacy at each union and collect necessary information on pharmacies and RMPs. The study findings are that Raipur, the smallest upazila of Lakshmipur district in respect of population, came into existence in 1977. Nothing is definitely known about the origin of the upazila name. According to UFPO office record, it comprises a total area of 201 Sq. Km. with a total 2, 46,193 populations which 1, 21,238 are male and 1, 24,955 are females. The sex ratio of the upazila is 104 males per 100 females against of 102 males per 100 females. The literacy rate (%) is 42.08. It may be noted that Raipur is a conservative and low performing area in family planning under Chittagong Division. Though the socio cultural environment in the area is not remarkably different from that of other parts in the country, yet there are visible differences in CPR, maternal and infant mortality rates, TFR and health seeking behaviour. Discontinuation of contraceptive use is believed to be a major contributor to the stagnation of the TFR in these areas. The study suggests that we should plan to strengthen the capacity of the health service provides both from the public and NGO sector to enable them to provide better health service delivery that will play a vital role to meet the project objectives.

**172. Hossain S; Akter SFU; Islam MN; Rahman MA; Rahim A; Siddiqua SA; Pacheun O. Maternal factors related to foetal outcome at Dhaka Medical College Hospital, Dhaka, Bangladesh. *JOPSOM*. 2003; 22(2):33-39.**

The purpose of the study was to determine identifiable maternal factors related to foetal outcome. The study data was collected from 188 pregnant mothers by a structured questionnaire to determine their knowledge and attitude about antenatal practices. Maternal obstetric information and babies' information was obtained from the history sheet. The study was conducted from 1<sup>st</sup> February to 21<sup>st</sup> February, 2000. The results of the study revealed that the mean age and height of the respondents were 23.3 years and 147.8 cm respectively. About 37.8% respondents were illiterate, 78.7% were housewives, 53.7% had a family income of less than Taka 6000 per month. Of the respondents, 76.6% were delivered normally, 18.1% of the babies were low birth weights and 5.3% were stillbirths. A little more than half (53.7%) of the mothers had poor knowledge about antenatal practices while 54.8% showed unfavorable attitude towards antenatal practice. Abnormal foetal outcome was associated with education, family income, height, ANC visit, obstetric complication, knowledge and attitude ( $p < 0.01$ ). Significant association was found with occupation and gestational age ( $p < 0.05$ ). The study recommended that the factors related to abnormal foetal outcome should be borne in mind while providing health care in any setting so that necessary intervention measures can be initiated to reduce abnormal foetal outcome.

**173. Hossain SMM; Shuaib M; Abdullaha-Al-Harun; Khandker L. Study on urban adolescents: knowledge, attitude and practice related to reproductive and sexual health in Bangladesh. Dhaka: Save the Children, UK, 2002.**

The study was conducted to collect data on the knowledge, attitude and practice related to reproductive and sexual health of the adolescents aged between 14-19 years in the selected districts. For the study, a cross sectional KAP survey was conducted in four areas (Khulna, Kurigram, Moulvibazar and Cox's Bazar) during June and July 2001. A stratified systematic random sampling was adopted for the survey. A questionnaire was developed to collect data. A total of 1190 adolescents were included in the survey of which 47% were male and 53% were female. The survey revealed that adolescents did not have proper information on many important issues related to reproductive health such as physical changes while growing up, pregnancy, transmission of STIs and HIV/AIDS etc. There was a demand for information as 65.5% of them wanted to know about sex related issues and they wanted to have the information from books, magazines, video films, friends etc. The majority of the adolescents were aware of someone involved in pre-marital and/or extra-marital sexual activity. Many adolescents did not seek treatment for RH related problems. Some times they received treatment from traditional practitioners, 86% of adolescents expected better and efficient services from health care facilities. The study suggested that there was a clear need to deliver reproductive health related information to adolescents. The report recommended that NGOs should conduct awareness programmes in response to the needs of the adolescents and they should also try to make the health facilities adolescents friendly. Policy makers should give emphasis on this matter in national policy options.

**174. Huq NL; Nahar Q; Larson CP; Haseen F; Quaiyum MA. Strategies to improve reproductive health services for adolescents in Bangladesh: a community-based study. Dhaka, ICDDR,B, 2005. (Working paper; no. 164).**

The study aimed at determining the relative benefits of an integrated adolescent development programme that combined reproductive health education, community sensitization, livelihood skill training (ST) and a saving and credit scheme. This quasi-experimental study began in September 2000 and it was completed in 2002. A total of 900 female and 900 male adolescents aged 13-19 years, whether is or out of school married or unmarried living in urban and rural sites were brought under the survey. The results of the study showed that school enrollment among the adolescents were high. In proper sites, 58% of boys and 7% of girls were still in school. Twenty two percent of urban and 31% of rural girls who participated in the survey was married. Most of the girls were married at the age of 13-15 years, and 13% of rural girls were married below the age of 13 years. A very low level of knowledge was demonstrated among adolescents about fertility. A high proportion of married rural females are using a modern contraceptive method. Oral contraceptive pill was the method of choice in both urban and rural areas. In urban areas, one-fifth of the populations were condom users. Desire for a child was commonly cited reason by the married females for not using any method. Although a large proportion of boys considered wet dreams as a normal phenomenon. Sometime, they believed that they required treatment. Seventy-five percent of urban and sixty-four percent of rural boys and more than one-third of girls were aware of sexually transmitted infection (STIs), but when they were asked to recall the names of various STIs, knowledge of adolescents was mostly limited to AIDS. Persuading and working with the community was seen as a challenging and critical element of intervention. In each selected community, group meetings were held for education sessions. Prior to implementing a reproductive health intervention in a community setting, the complexity of following up adolescents needs to be considered carefully. Regular seminars on family planning and reproductive health issues should be held to make the adolescents much more aware about reproductive health issues.

**175. Hyder SMZ; Persson LA; Chowdhury AMR; Ekstrom EC. Do side-effects reduce compliance to iron supplementation?: a study of daily and weekly dose regimes in pregnancy. *J Health Popul Nutr.* 2002; 20(2): 175-179.**

The objective of this study was to compare side effects of iron supplementation, compliance, and impact of side effects on compliance among pregnant women assigned to either weekly doses to 2x60 mg iron or a daily dose of 1x60 mg iron. The study was conducted among pregnant women in rural areas of Mymensingh district of northern Bangladesh. Side effects of iron supplementation led to poor compliance. A weekly-dose schedule of iron supplementation rather than a daily dose regimen had been suggested to produce fewer side effects, thereby achieving a higher compliance. This study compared the side effects of iron supplementation and their impact on compliance among pregnant women in Bangladesh. These women were assigned to receive either weekly dose of 2x60 mg iron (one tablet each Friday morning and evening) or a daily dose of x60mg iron. Fifty antenatal care centres were randomly assigned to prescribe either a weekly-or a daily-supplementation regimen (86 women in each group). Side effects were assessed by recall after one month of supplementation and used for predicting compliance in the second and third months of supplementation. Compliance was monitored using a pill bottle equipped with an electronic counting device that recorded date and time whenever the pill bottle was opened. Of five gastrointestinal side-effects (heartburn, nausea, vomiting, diarrhoea, or constipation) assessed,

vomiting occurred more frequently in the weekly group (21%) than in the daily group (11%,  $P < 0.05$ ). Compliance (ratio between observed and recommended tablet intake) was significantly higher in the weekly-supplementation regimen (93%) than in the daily-supplementation regimen (61%,  $P < 0.05$ ). Overall, gastrointestinal side effects were not significantly associated with compliance. However, the presence of nausea and/or vomiting reduced compliance in both the regimens but only among women from the lower socio-economic group. In conclusion, weekly supplementation of iron in pregnancy had a higher compliance compared to daily supplementation of iron despite a higher frequency of side effects. The findings supported the view that gastrointestinal side-effects generally had a limited influence on compliance, at least in the dose ranges studied. Efforts to further reduce side effects of iron supplementation would not be a successful strategy for improving compliance and effectiveness of antenatal iron supplementation.

**176. Hyder SMZ; Persson LA; Chowdhury AMR; Lonnerdal B; Ekstrom EC. Anaemia and iron deficiency during pregnancy in rural Bangladesh. Dhaka: BRAC, 2000.**

The objective of the study was to assess the prevalence of anemia, iron deficiency and iron deficiency anemia (IDA) among pregnant women in rural Bangladesh. Data were collected from central part of Bangladesh, in a rural area of Mymensingh district between May and November, 1997. In this study, baseline data on 215 pregnant women of 2<sup>nd</sup> trimester, selected from 50 antenatal care center who were invited to participate in an iron supplementation trial were used. Hemoglobin (Hb) concentration of venous blood samples was measured by Hemo Cue system and also serum was collected for assessment of ferritin by immuno-radiometric assay and transferrin receptors by immunoassay double sandwich method. The study showed that mean (SD) of Hb was 110g/L (14 g/L), while median serum ferritin, TFR and TFR/serum ferritin was 13.7 µg/L, 6.2 mg/L and 458 respectively. The prevalence of anemia was 50%, iron deficiency 54% and high TFR/serum ferritin 48%. It was significant that none of the study women had severe anemia. The prevalence of IDA was 33%. Among the anemic women 66% had iron deficiency and 64% high TFR/serum ferritin. The study recommended both anemia and iron deficiencies were highly prevalent. About two thirds of the anemia cases were associated with iron deficiency. Thus, anemia during pregnancy could be prevented and treated by provision of iron supplements and providing available information on etiology of anemia and severity of iron deficiency to the pregnant women in Bangladesh

**177. Hyder SMZ; Persson A; Chowdhury AMR; Ekstrom EC. Anaemia among non-pregnant women in rural Bangladesh. *Public Health Nutrition*. 2000; 4(1): 79-83.**

The objective of this study was to estimate the prevalence and severity of anemia among non-pregnant women in rural Bangladesh and describe its social distribution. The study was designed as a cross sectional study and carried out in February- March 1996. Hemoglobin concentration was measured on a capillary blood sample by cyanmethanoglobin method. A systematically selected sample of 179 non-pregnant apparently healthy women from twelve villages of Fulbaria Thana of Mymensingh district were randomly selected for performing the study. The study results showed that anaemia was highly prevalent (73%; 95%CI 67-79%). Most of the women had mild (52%) or moderate (20%) anemia, but a few of them suffered from severe anemia (1%). *Ascaris* was common (39%) while hookworm was not (1%). The anaemia prevalence had no statistically significant association with age, parity or *ascaris* infestation ( $P > 0.05$ ). Women with less than 1 year of schooling, who were landless or who



reported having and economic deficit in the household had significantly higher prevalence of anaemia ( $P < 0.05$ ). There was a significantly increasing trend in anaemia prevalence with decreasing socio-economic situation (SES). However, anaemia was common in all social strata. Although the overall anaemia prevalence among non-pregnant rural women was high, only a few women suffered from severe anemia. Women of all SES groups irrespective of their age and parity were affected by anemia. Thus it was important to identify the causes of anemia so that the problem could be addressed in the most effective way.

**178. Islam F; Rahman F; Cowdhury S; Begum N; Ahmed S. Is there any co-relation of whole blood zinc level of pregnant women with zinc level in colostrum and mature breast milk? *Bangladesh J Obstet. Gynaecol.* 2002; 17(2): 43-47**

This exploratory study was conducted to find out the correlation between maternal zinc status during pregnancy and the zinc level of colostrum and mature breast milk. One hundred pregnant women at a time got admission in the Department of Obstetrics and Gynaecology of Institute of Child and Mother Health (ICMH) were randomly selected. Their whole blood, colostrums and mature milk zinc level was estimated by atomic absorption spectrophotometer with the mean-age (+4.18). Most of the pregnant women (96%) and their husbands (97%) were literate. Majority of the pregnant women were house wife (91%) and from income status of self-rated surplus category (71%). More than 50% of the husbands of the pregnant women were business man. The whole blood zinc level of pregnant women ranged between 1.53 to 42.46 mg/with a mean age of 6.23 Mg/ 1.16% of these pregnant women had zinc level below normal page (3.41 mg /). The colostrums Zinc level varied form 40 to 30.40 mg/1 with a mean of 5.6 mg /1. The zinc level in mature breast milk ranged from 40- 7.68 mg /1 with a mean of 2.38 mg.1 mean zinc level in mature breast milk (2.3 ) was lower than recommended daily zinc intake (3-4 g /day). There is no correlation of whole blood zinc with colostrums and mature breast milk zinc. Although not significant, there was a positive correlation of colostrums zinc and mature breast milk zinc. Zinc deficiency has been identified among pregnant women who were from well-to-do family and well nourished. Besides, zinc level of mature breast milk of there lactating women was lower than the recommended daily zinc intake exposing the exclusively breastfed infants to zinc deficiency. The findings of the study recommended a large scale study might be taken to find out the zinc status of pregnant women and effect of zinc supplementation to lactating women of Bangladesh or milk zinc concentration.

**179. Islam MM. Adolescent childbearing in Bangladesh. *Asia-Pacific Population Journal.* 1999; 14(3): 73-87.**

The objectives of the study were to examine the levels, trends and differentials of adolescent childbearing in Bangladesh. The data for the study came from the 1996/97 BDHS, the details of which were available elsewhere. Although the 1996/97 BDHS was not designed especially for surveying adolescents, it did collect information through a nationally representative sample of 9,127 ever-married female aged 10-49. Out of them 1,418 were aged 10-19, whom the study recognized married adolescents group. To study adolescent fertility, only the adolescent 15-19 years were considered. The result of the study demonstrated a very high incidence of teenage childbearing in Bangladesh, which was detrimental to national efforts to produce a further decline in the overall fertility rate in order to achieve the replacement level of fertility within a short period of time. According to the study, Bangladesh had the highest rate of adolescent childbearing among the Asian countries. The findings showed that the median age

at first birth was between 17 and 18 years. Overall 31% of female adolescents became mothers by age 19 years and another 4.6% became pregnant by that age. Rural and illiterate females were more likely to become mothers during adolescence. On an average, each currently married female aged 15-19 had 0.78 births. The annual-age specific fertility rate for adolescent aged 15-19 was 147 births per thousand females. It was evident from the 1996/97 BDHS that the contraceptive prevalence rate among teenage married females was relatively low (31.4%) compared with adult women aged 20 and older (52.6%). As a result, childbearing starts at a very early age in Bangladesh, with the large majority of women becoming mothers during adolescence. The findings of the study would have important policy implications for further reducing fertility.

**180. Islam MN; Begum NN; Rahman MA; Hassain MA; Chowdhury SA. Adolescent pregnancy: is it a planned affair? *JOPSOM*. 2002; 21(1): 67-74.**

The objective of the study was to estimate the proportion of adolescent planned pregnancy and the background characteristics influencing to get the pregnancies. The study was carried out among 246 adolescent pregnant women aged from 15 to 19 years attended for first antenatal visit to Maternal and Child Welfare Center (MCWC), Kishoregonj District. Face to face interview was carried out with a pre-tested structured interview questionnaire. The study was guided by the faculty of Medicine, Chulalongkorn University, Bangkok in Thailand during the period of June 1999 to May 2000. The highest proportion of the adolescents (53.3%) was in the age group 18-19 years and 45.7% were in the age group 15-17 years. Most of the adolescents (80.1%) were literate and only 19.9% were illiterate (had no schooling). Overwhelming the age of marriage was 16-19 years among majority (67.9%) of adolescent and 32.1% were married at the age from 12 to 15 years. Most of adolescent (93.5%) were Muslims and 6.5% Hindus. The mean age of the adolescent was 17.4. Median age was 18.0 with standard deviation 1.18. It was also shown that only 6.9% of the adolescents said to give their consent of marriage herself and most of the adolescents (93.1%) marriage consent was given by their parents or relatives. Most of the adolescent (83.0%) had 1<sup>st</sup> ANC visit within 16-36+ weeks of gestation while only 17.0% visited within 6-15 weeks. Nearly 42% of the respondents opined that actually they wanted to have a baby and nearly 58% of adolescents did not want to have a baby. Among the respondents who wanted pregnancy (103); only 3 (2.91%) opined that they became pregnant at right time and 100 (97.09%) said that they did not become pregnant at right time. A total of 48% adolescent reported that they were pressured or forced to have pregnancy while 52% had never been forced or pressured to have pregnancy. Most of the adolescent pregnancies are unplanned. Some adolescent currently chose to place their babies for adoption but it was due to driven by circumstances which might be better corrected or altered by counseling. Adolescents participation in healthy reproductive behavior made them enable to take appropriate decision regarding pregnancy in a proper time which reduced unplanned pregnancies, morbidity, mortality and age specific fertility rate which would decline population growth rate.

**181. Jabbar MA; Parvin T; Haque MA; Akter SFU; Rahman A. Anaemia status of the pregnant women attending Dhaka Medical College. *JOPSOM*. 2005; 24(2): 73-78.**

This purposive study was undertaken to investigate the anemia status, socio-demographic pattern and pregnancy related information of pregnant women attending at Dhaka Medical College Hospital. It was a cross sectional study conducted among purposively selected 163 pregnant women attending at Gynae and Obstetric out patient department of Dhaka Medical

College Hospital. The study period was from September to March 2005. Data were collected through face to face interview using a pre-tested interview schedule and checklist. The results showed that out of 163 respondents the mean age was 25.28 years with SD  $\pm$  4.66 year and 95.09% were Muslim. Majority of them (80.37%) were housewives and maximum (79.75%) belonged to the middle class (Tk 3000-10000 per month) group. About 94% were anemia and 11.04% were severely anemic. Maximum anemic respondents were found to be in 2<sup>nd</sup> and 3<sup>rd</sup> trimester (47.71% and 46.40% respectively). Among 153 anemic women 69.38% were multi-gravid. Emphasis on nutrition education has been recommended and discouraging multiple pregnancies for maintaining the hemoglobin level of pregnant women within normal range. In conclusion, it may be commented that when our country is trying to develop; the physicians and experts must take appropriate measures to overcome this public health problems.

**182. Kabir A; Barbhuiya MK. Duration and differentials of post-partum amenorrhoea in Bangladesh. *JOPSOM*. 2001; 20(1): 1-5.**

The study intended to estimate the duration of post-partum amenorrhea among the Bangladeshi married women aged <50 years. Data from 1996-97 Bangladesh Demographic and Health Survey (BDHS) were analyzed using the prevalence incidence ratio technique. The study was carried out at the Department of Statistics of the Shahjalal University, Sylhet during the year 2000. The post-partum amenorrhea showed a fairly constant duration with age and the mean was 10.73 months, except an increase in ages between 35-39 years (13.29 months). It was found that women aged 29 years or less had significantly shorter means duration of post-partum amenorrhea than their older counterpart. This result suggested that the period of amenorrhea increased monotonically with increasing parity. The average duration of post-partum amenorrhea was influenced by some selected socio-economic characteristics. The results suggested that women with a rural background experienced a higher duration of post-partum amenorrhea than their urban counterparts. There was a distinct differential in the average duration of post-partum amenorrhea by educational level. Women with better education experienced a lower duration of postpartum amenorrhea. For instance, the average duration of post-partum amenorrhea among the women with primary education was estimated as 9.77 months, larger by 0.99 months than the women having secondary or above education and smaller by 2 months than those having no education. It was also observed that mean duration of post-partum amenorrhea remained fairly constant with religion and work status of women. Women with better education experienced a shorter duration compared to the women with less education, while religion and work status of the women did not influence the duration of post-partum amenorrhea. The duration of breast-feeding and hence the duration of post-partum amenorrhea in Bangladesh was fairly long, particularly among the more traditional groups of the population. Increasing age at marriage and increased use of contraceptives, and breast-feeding all played role. Post-partum amenorrhea had continued to have a major impact on child spacing; however, the decline in post-partum amenorrhea due to decline in breast-feeding was made it more difficult to reduce fertility.

**183. Khanam K; Akhter S; Begum A. Maternal outcome in eclampsia: a review of 104 cases. *JOPSOM*. 2005; 24(2): 9-14.**

The objectives of the study are to find out the risk factors and determinants of maternal outcome in eclampsia. This cross sectional descriptive study was carried out in eclampsia ward in the department of Obstetric and Gynecology, DMCH from April to September 2003. There were 346 women with eclampsia from 4539 obstetric patients in DMCH. Among the

cases 104 patients were randomly selected for study purpose. The study results indicated that out of 4590 patients, 67.3% patients were primigravida, 82.7% patients were in the age group between 15 and 25 years, 75.6% were illiterate or had only primary education, 53.8% came from low socio-economic group and 55.8% patients had convulsion after 37 weeks of pregnancy, 62.5% were unconscious at the time of admission, 96.2% patients were treated with Mg SO<sub>4</sub> as an anti-convulsant. Out of 104 cases, 62 patients were delivered by Lower Segment Cesarean Section and 42 had vaginal delivery, 5.8% patients expired and 94.2% patients were discharged healthy. Here, maternal mortality is 58/1000. About 89% patients had no complications but 10.6% patients had complications like, pulmonary edema; Hemolysis, Elevated Liver enzymes, Low Plated count (HELLP) syndrome, Disseminated Intravascular Coagulopathy (DIC), renal failure an obstetric shock. Those maternal complications were the primary causes of maternal deaths. In this study, it was found that the eclampsia patients were mostly primi, younger, illiterate and of low socio-economic status. In fine, it was seen that the common complications for these eclampsia patients were pulmonary edema, HELLP syndrome, DIC, renal failure and obstetric shock. The study findings suggested that further study can be done to find out the probable causes of eclampsia.

**184. Khandker MS; Chowdhury MZU; Ahmed BN; Begum RA. Vaginal discharge syndrome (VDS) among married women. *JOPSOM*. 2001; 22 Suppl.: 24-33.**

The main purpose of the study to find out the proportion of married women having vaginal discharge syndrome with their characteristics. The cross sectional descriptive study was done at Mohammadpur Fertility Services and Training Center of Dhaka city. The study was conducted during March to June 2001 under the supervision of NIPSOM. From the study population 120 respondents were selected as study sample. Data were collected by the researcher with the help of a structured questionnaire after pre-testing and following up their consent. The results found that the proportion of married women of reproductive age at MFSTC suffering from VDS was 10.59% with mean age  $28.0 \pm 7.04$  years. Cent percent of the respondents had reportedly complained of vaginal discharges. The most common reported symptoms with vaginal discharge were vaginal itching 56 (46.7%) and vaginal irritation 55 (45.8%). Vaginal itching was significantly associated with VDS ( $p < 0.05$ ). The type of vaginal discharge (watery, muca purulent, curd like) were significantly higher among the patients of virginities or cervicitis compare to mixed type of infection ( $p < 0.05$ ). It was found that friability if cervix significantly associated with mixed infection ( $p < 0.05$ ) including the proportion of servilities were to be higher among the mixed infection. More than half 67 (55.8%) of the respondents had watery vaginal discharge with more than half of the respondents 63 (52.5%) had moderate amount of vaginal discharge. The study results suggested that an adequate health care facilities for RTIs should be ensured by strengthening existing structure implementation of on going STDs control programs and monitoring their effectiveness be called for. Efficient follow-up mechanism for VDS clients needs to be developed for ensuring continuity of care.

**185. Khan MIH; Karim F. Effects of family life education in improving adolescents' knowledge and attitude on reproductive health. Dhaka: BRAC, 2000.**

The study was conducted to assess the effects of family life education meant for the adolescents (AFLE) in improving their knowledge and attitude on the fundamental elements of reproductive health vis-à-vis explored their pattern of sharing about the learning with the peers and identified further information needs on reproductive health. The study was carried

out in 5 Upazilla in Nilphamri districts and data were collected from 444 adolescents through one to one interviews (148 with BRAC AFLE and 148 without BRAC AFLE and 148 had never been enrolled in schools; in each group 50% were female) adolescents from BRAC schools (296) were chosen by multistage sampling method while the other (148) were selected conveniently. The study outcomes were compared among the above three groups, bivariate analysis showed that a majority of AFLE students had significantly higher correct knowledge on puberty (95.3%), menstruation (98.6%), marriage and pregnancy (99.3%), STD/AIDS (78.4%) and family planning (95.3%) compared to the adolescents without AFLE as well as those who never went school. Except in the case of correct age at first marriage of a girl, the adolescents with AFLE had higher level of satisfactory knowledge on most of the specific RH issues than those of other two groups. In the logistic regression analysis, the AFLE appeared to be the strongest influential predictor, followed by the respondents' age, TV-exposure, radio-exposure, and sharing of RH lessons with others. Thus it appeared that AFLE has played a positive role in improving rural adolescents' knowledge and attitude on RH issues. But it warranted sex inequality and involving peers and family. Thus AFLE curriculum on STDs/AIDS needed to further improvement, appropriate teaching approach should introduce.

**186. Khan MMH; Kabir M; Mori M. Unintended pregnancy in Bangladesh. *World Health & Population*. January 2006.**

This article investigated some of the socio-demographic factors that might have some influence over both unwanted and mistimed pregnancies among ever-married women of Bangladesh. A total of 717 pregnant women extracted from 10,544 currently married women of reproductive age of the Bangladesh Demographic and Health Survey (BDHS) 1999 –2000 were identified as eligible for this study. This study identified that unwanted pregnancy was significantly associated with higher numbers of living sons ( $p < 0.01$ ). Longer marital duration ( $P < 0.05$ ), exceeding desired family size ( $P < 0.001$ ), use of contraception ( $p < 0.001$ ), use of contraception ( $p < 0.01$ ), and breastfeeding practice ( $p < 0.05$ ), for mistimed pregnancy, higher age ( $p < 0.05$ ), breastfeeding practice ( $p < 0.01$ ), exceeding desired family size ( $p < 0.01$ ), pregnancy termination ( $p < 0.05$ ) and having last birth during last three years ( $p < 0.001$ ), were significant. The study found that 62.9% pregnant women belonged to the age category 10-24. The rate of mistimed and unwanted pregnancy was 27.3% and 14.6% respectively. The data indicated that longer marital duration, higher age and lower educational level of women are represented by higher number of living children or higher number of sons. Since the women with a higher number of living children or number of sons are more likely to exceed the desired number of children, further pregnancy would be more likely to be unintended. Therefore, unintended pregnancy was strongly associated with exceeding desired family, a multidimensional approach be needed through the family Planning, health and educational sectors in Bangladesh to maintain desirable family sizes.

**187. Khan RF; Akhter HH. Report on the impact of reproductive tract infections (RTIs) and women's health and lives in Bangladesh. Dhaka: BIRPERHT, 2001**

The objective of the report was to analyze information on data collected from reports, studies, and other materials (both published and unpublished) on RTIs and STDs and also of perceptions of reproductive health morbidity in treatment and prevention of RTIs at the different settings, in sexual practices and behaviour. Through reviewing literature and discussion (and also several consultation workshops) with researchers, women and health advocates, program managers and policy makers, the key issues related to key strategies for

the control of RTIs/STDs were identified. The report stated that there was no available data on iatrogenic etiology of RTIs. Review showed that a clinic based study found 60% of women sufferings from RTIs, including 4% with gonorrhea and nearly 1% syphilis while a rural study found 55% of women had RTIs of which 23% were STIs. Prevalence of RTI was significantly higher among women who were more (64.4%) mobile; whose husband stayed out for less than a month (60.3%) there was a significant relationship between the prevalence of RTI among women and their husband's genital problems. The treatment of the affected husbands was essential for the management of RTI. Recent data of urban-based study showed that syphilis was found in 5% of the 1,550 women. Therefore, a large portion of these infection was totally a symptomatic which an estimated 50% of youths practice premarital sex including heterosexual/homosexual, bisexual behaviours. A rapid urbanization led to high male to female ratio that often caused the loss of long-held traditional values/restrains on sexual activities. Economic and gender inequality contribute to the higher rate of RTI/STD among women. Awareness about RTI/STD was low among the people and knowledge among the providers about RTI/STD in sufficient. However, for preventions and control of RTI/STD/AIDS, the main focus would be on BCC and condom promotion. In addition government identified syndromic management for men and women with appropriate referral services as a strategy. Currently there was 116 NGOs in Bangladesh working in the area of HIV/AIDS. But there was lack of coordination among the NGOs and the government on their endeavors in reducing HIV/AIDS vulnerability on their target population. The study suggested that the steps should be taken for controlled the situation of RTI/STD, such as further studies on behavior prevalence would require for RTI/STD to pave the way for future program planning increased community awareness about RTI/STD through sexuality education that would be developed on a life- cycle basis and such education should start from a very young age, increase the quality of services, and effective law and policy should be introduced.

**188. Khanum PA; Quiyum MA; Islam A. Knowledge and use of Essential Obstetric Care service in a rural NGO working area: a baseline report. Dhaka: ICDDR,B, 2001. (ICDDR,B working paper; no. 145).**

This cross-sectional survey was conducted with the objectives to: (i) ascertain the knowledge of women and their husbands on obstetric complications and facilities for management of such complications, (ii) assess the knowledge of women on the necessity of antenatal care, TT vaccination, and postnatal care, (iii) assess the coverage of antenatal, postnatal, and delivery care, and (iv) examine the healthcare-seeking behavior of women regarding reported complications of pregnancy and childbirth. A total of 895 women with a history of pregnancy outcome during last one year preceding the date of interview and their husbands were interviewed. Two separate sets of a structured questionnaire having both closed and open-ended questions were used. The finding of the RSDP baseline survey showed that 76% of both women and their husbands were knowledgeable about prolonged labor as a complication of childbirth. Two-fifths of the women and 30% of the husbands knew about mal-presentation. Knowledge of severe bleeding during the postpartum period was higher among the husbands than their wives. However, knowledge of life threatening complications, such as bleeding during pregnancy and/or delivery, premature rupture of membrane, convulsion, retained placenta and postpartum infection was poor women and their husbands. The majority of women and their husbands were aware of the GOB facilities where essential obstetric care (EOC) services are available for the management complications. Only 19% of the women reported receiving information about taking assistance from TBAs during delivery. With

regard to antenatal care 58% of the women reported receiving such care from the trained providers, such as paramedics, nurses MBBS doctors and or visited institutional facilities. The coverage of postnatal care was also limited. Thirty-five percent of the women reported experience of their recent pregnancy and/or childbirth related-complications. The majority of the women consulted the village practitioners for the management of their obstetric complications. More than a quarter of the women did not seek care for pregnancy (27%) and/or delivery related complications (26%) and only 12% did so for postnatal complications. It might be conducted that enhancement of the knowledge of women and their husband on symptoms of obstetric complications which required care from the medically trained providers was essential. The study recommended that behavior change activities needed to strengthened and village practitioners who were consulted first for the management of obstetric complications needed to oriented in referring clients with complications to the appropriate facility.

**189. Khanum PA; Quaiyum MA; Islam A; Ahmed S. Complications of pregnancy and childbirth: knowledge and practices of women in rural Bangladesh. Dhaka: ICDDR,B, 2000. (ICDDR,B working paper: no. 131)**

The study was designed to assess women's knowledge and care seeking behavior regarding complications of pregnancy and childbirth and to assess women's attitudes and practices concerning birth attendants and place of delivery, an to assess the coverage of antenatal and postnatal case. The study was done in 7 unions of Mirsarai and 5 unions of Abhoynagar Thana in Chittagong and Jessore districts respectively. During October 1998 - May 1999, 1,566 women: 999 from Mirsarai and 567 from Abhoynagar who had a pregnancy outcome during the last one year of study period were interviewed at their homes. The trained interviewers used a pre-tested semi structured questionnaire for interviewing the women. Result of the study showed that more than 80% of the women in Abhoynagar and over half of the women in Mirsarai had knowledge about three and more types of pregnancy and/or childbirth related complications. The knowledge was higher among women in Abhoynagar than those in Mirsarai. Knowledge about postnatal complications was comparatively limited, more so in Mirsarai. The sources of services for the management of obstetric complications majority of the women mentioned that the Thana Health Complex; only one-fifth mentioned about the untrained village allopath physicians and homeopaths.. Deliveries of about one third of the women were attended by the trained providers such as trained traditional birth attendants (TTBAs), paramedics, nurses and doctors, and about 90% were delivered at home. Of the women reported to have experienced obstetric complications 61% women in Abhoynagar and 48% in Mirsarai had delivery related complications. Postnatal complication was found two times higher in Mirsarai than in Abhoynagar. Regarding the Thana management postnatal complications, 46% of the women in Mirsarai and 30% women in Abhoynagar consulted either the trained providers or visited the Government health facilities or the private clinics. With regard to antenatal care, 58% in Abhoynagar and 44% in Mirsarai sought care from trained providers/or visited health facilities. However, use of postnatal care was found to be limited. The findings of the study suggested that the behaviour change communication (BCC) activities need to strengthen with the involvement of different formal and informal groups in the community for making the women and their families aware about the complication of pregnancy and childbirth and motivate thus to use the appropriate facility without any delay.

**190. Khanam RA; Khatun M. Ruptured uterus: an ongoing tragedy of motherhood. *BMRC Bulletin*. 2001; 27(2): 43-47.**

The study aimed at determining the frequency of ruptured uterus, possible etiologic factors, foeto-maternal outcome and changes in obstetric care proposed to reduce this catastrophe. This retrospective cross-sectional study was carried out in Obstetrics and Gynecology Department of Dhaka Medical College Hospital. The records of delivery that occurred from September 1994 to September 1999 were reviewed. Within the six years 39,782 deliveries occurred. The result was compared with studies carried out in home and abroad. During the six years among 39,782 deliveries 424 cases were of rupture uterus with a frequency of 1/93 deliveries. Eighty three percent ruptured occurred in intact uterus and 17% occurred in uteri scarred by caesarian section. Common contributing factors were prolonged /obstructed labor, grand multiparity, and injudicious use of uterine stimulants, mismanaged labor by traditional birth attendant, and delayed referral to well-equipped centre, poor communication, poverty and ignorance. Frequency of rupture uterus was still very high in Bangladesh. To reduce the current trend the country should have to begin a more purposeful and goal oriented health education campaign. Emergency obstetric care should make available at remote area. All pregnant women must get good antenatal and delivery care. Government must increase funding of safe health care for maternity services.

**191. Meken J; Duffy L; Kuhn R. Childbearing and women's survival: new evidence from rural Bangladesh. *Population and Development Review*. 2003; 29(3): 405-426.**

The survey aimed at collecting detailed information prospectively over a three year period beginning in the late 1970s from nearly 2,500 reproductive age women. This determinants of natural fertility study (DNFS) was conducted in 14 villages in the comparison area of ICDDR,B. Maternal and child health – family planning program experiment, which began in 1978. Between January, 1975 and August 1979, all 2,441 married, fecund women who resided in the target villages were followed prospectively for three years on a monthly basis. Detailed information was collected on each woman's reproductive status (breast feeding, menstruation, pregnancies and their terminations, births etc.) her health and nutritional status (height, weight, body mass index and some blood testing), and health of her children. Limited information on socio-economic status (schooling, religious affiliation, husband's occupation) was also obtained at early into the study. The study results showed that the 2,031 women contributed 34,067 women-years in the reproductive ages. They bore 3,937 children and 100 women died; 540 women reached age 55 while under observation; an additional 34 deaths occurred during the 3,422 wham-years they contributed at age 55 and older. Over three-quarter of all women had no education, and among women observed at ages 55+ during the follow-up periods, 84% had no education. The women are an average quite short (148 cm), with older women differing little from all women. At the start of follow up, women averaged 29 years of age, had 4.0 children, and had a slightly faster pace of childbearing (1.14) than characterized 1979, the year from which the standard pace was taken. Women of under-55, averages 45 years of age and 5.9 children. Women reached aged 55 averaged 8 children. Odds are 86% higher for Hindus compared to Muslims and 82% higher for those with no schooling compared with those who attended school. Cumulative fertility, whether defined as parity or pace of child bearing did not affect survival. Women who gave birth recently had significantly higher odds of mortality compared to women who had no recent live birth. Especially, repeated rapid child bearing under poor conditions was detritus to women's health and



survival. Use of the full DSS dataset (or appropriate sub-sample) would permit studies of time trends.

**192. Naher L; Rahman M; Akhtar S. Assessment of maternal health care needs for safe motherhood and review of services provided at slum area of Dhaka city. Dhaka, BIRPERHT, 2006.**

This study was carried out to explore the perception of slum women of Dhaka city about parental care, high risk pregnancy, delivery care emergency obstetric care (EOC) and referral for complicated delivery and postnatal care. The study was conducted in four slums of two wards (No 515) in Zone-8 (Mirpur) of Dhaka city. A total of 423 mothers having children aged under-12 months were interviewed by trained interviewers by using a structured questionnaire. The data collection period was March to April, 2006. In the maternal health care need assessment study mothers reported about 36% antenatal, 23% intrapartum and 18% postpartum morbidities. The antenatal morbidities were remission 19%, weakness (19%), fever 11% and VTI 10% edema 10% and other reported complications were headache, eclampsia, APH and DM. The complications experienced by the women during intrapartum period were prolonged labour (12.3%), fever (5.2%) edema (4%), excessive bleeding (2.6%), eclampsia (2.6%) and other reported complications were high blood pressure, abnormal position of fetus and weakness. Three-fourths of the women (77%) reported that they had to pay excess money to get health care. About knowledge on danger sign of pregnancy 91% mothers mentioned fits or convulsions as danger signs of pregnancy; 63% reported excessive bleeding during antenatal period or at the time of delivery; 28% reported prolonged labour as a danger sign of pregnancy and 5% mothers could not mention any one of the danger signs of pregnancy, 73% of the mothers knew the appropriate place for management of delivery complications. Mothers' awareness about care needed after child birth; 83% mothers opined to take more food than usual after child birth, adequate rest for mothers was recommended by 74% women, 49% women perceived that mothers should not work hard after child birth. The findings suggest that special interventions focusing towards slum poor would be helpful to develop strategies to improve MCH services and to prepare IEC materials to create awareness of people regarding safe motherhood.

**193. Nahar Q; Tuhon C; Houvras I; Gazi R; Reza M; Huq NL; Barkat-e-Khuda. Reproductive health needs of adolescents in Bangladesh: a study report. Dhaka: ICDDR,B, 1999. (ICDDR,B working paper; no. 161)**

The over all objective of the study was to assess the reproductive health (RH) needs of adolescents of Bangladesh. This community based cross-sectional and descriptive study in nature was conducted in three rural and two urban areas of Bangladesh, using the Operations Research Project (ORP), Surveillance system. For the urban area, half of the sample was drawn from urban slums and half was from urban non-slums. The study used both quantitative and qualitative data-collection techniques. In total 3,961 adolescents' aged 10–19 years were interviewed using a structural questionnaire. The participatory learning and action (PLA) techniques using group activities, such as social mapping, Venn diagrams and free listing were used in the study. In total, 47 group activities and 57 in-depth interviews with adolescents, and 40 key informant interviews were conducted. The findings of the study showed that about one-fifth of the adolescents in the study did not have any formal education. The school drop-out rate was high in both urban and rural areas and for both boys and girls, and it was highest in the case of urban slum adolescents. Sixteen percent at the rural and 20 percent of the urban

slum girls were married and soon after marriage they became pregnant; more than half of them reported having had one or more children. Fifty-nine percent of the adolescent boys and about 30 percent of the girls in the urban slums worked for money. They had worked mainly as either housemaids or garment-workers. About 20% of both urban and rural boys were involved with clubs but a lower portion of girls (77% rural, 7% urban) was also involved with club activities. Both adolescents and adults for an early marriage included, difficulty in finding an eligible bride-groom, preventing premarital affairs, and maintaining social prestige. Most girls in the study reported that they did not have any knowledge about menstruation before they experienced it. Most of the adolescents (70%) had heard of family planning practices, mostly from TV and Radio, knowledge about disease of the reproductive organs and RH issues were low among the rural adolescents. The study recommended that adolescent friendly health services should be ensured by arranging special hours or special days for them, orienting and providing training to healthcare providers on how to counsel adolescents.

**194. Nahar Q; Amin S; Sultan R; Nazrul H; Kane TT; Khuda B; Islam M; Tunon C. Strategies to meet the health needs of adolescents: a review. Dhaka: ICDDR,B, 1999.**

This study was designed to focus recent attention on men an important candidates for reproductive health services warranted the need for a reviewing the past experiences in relation to male involvement initiatives. Data was collected from the published national and international literature reviews. Field visits were made to projects on different male involvement initiatives undertaken by government and non-government organizations. Besides, informal discussions were held with program managers male frontline supervisors and selected males. The results of the study showed that the use of strictly male family planning method, such as condom, vasectomy and withdrawal as an indicator of male involvement in family planning, did not show much promise as the relative share of male methods had rather declined steadily from 22 percent of all method use in 1975 to only 14 percent in 1996-97 in "Bangladesh. Limited data on other selected indicators of male involvement in reproductive health showed that means approval for family planning was very high and their family desired the quite similar to those of their wives. The awareness about AIDs was higher among men than women. It was still quite low, with only one third of men ever having heard of AIDs and much lower proportion knowing how it was actually transmitted. Some sexually transmitted disease such as syphilis and gonorrhea were prevalent among the reproductive tract infection (RTI) clients. Documentation, monitoring and evaluation of male involvement efforts are also insufficient. To change this scenario, appropriate strategies aiming at improving men's knowledge about reproductive health issues and services, increasing the use of reproductive health services by men, increasing supportiveness among husbands for reproductive health of their wives and preventing STDs/AIDs in Bangladesh should be undertaken immediately by the concerned authorities.

**195. Nasreen H; Imam N; Akter R; Ahmed SM. Safe motherhood promotion project in Narsingdi district. Dhaka: BRAC, 2006.**

The baseline survey was intended to analyze the situation of safe motherhood at Narsingdi district. This population based descriptive study collected data from three randomly selected upazilas of Narsingdi district (Sadar, Raipura and Monohordi) using both quantitative methods. A total of 1049 respondents comprising currently pregnant women and mothers of below one child were sampled. To get this number of respondents approximately 7000 households were surveyed. The study resulted that the use of any family planning method

among the study population (mothers of under-one children) was less than the national average of 58% (NIPORT, Mitra and associates, ORC Macro, 2005). The awareness level was higher for less severe pregnancy complications but much lower for severe, life threatening complications. Birth of last child among the study mothers was around 40% which is greater than national average of 13%. Majority of the intra partum and post partum bleeding remained in attended. Most of these hemorrhage cases were attended by unqualified providers at home. Similar differences were also observed with respect to the awareness about complication of neonatal period and the actual practices followed. The govt. medical doctors are not always available in the govt. hospitals. Instead they prefer to treat patients in private clinics because of their low salary. Those who provide services at the hospitals could not deliver quality services because of shortage of duty staff. The level of knowledge and practice on Safe motherhood and neonatal care among the health professionals was found to be reasonable but there is still room for improvement in some areas. There is little difference in staffing, equipment and services among govt. health facilities at different level. None, even the district hospital is able to provide EOC. In general the quality of MCH services in govt. hospitals is poor. The major barriers identified in utilizing govt. health facilities are the brokers, unavailability of doctors and the very high out of pocket expenditure. Despite govt. policy that the public services are free of charges the study showed that the expenditure for the normal delivery and cesarean operation were similar in public and private facilities. Therefore, the provisions of EOC services, upgrading existing health facilities, building functional network, provision of adequate number of health professionals reducing gap between knowledge and practices of the community people, and strengthening collaboration between the govt. NGO and private sector health facilities are essential to bring out a sizeable decline in maternal mortality and morbidity in rural Bangladesh.

**196. Nasreen SZA; Haq MS; Bari A; Rumi NF. Pregnancy outcome of gestational diabetic and non-diabetic mothers: a comparative study. *JOPSOM*, 2002; 21(1): 62-66.**

The objective of this paper was to compare the outcome of well controlled gestational diabetes mellitus (GDM) mother and non-diabetes pregnant mother. A total of 50 patients with GDM and 50 cases of non-diabetic pregnant women, attending the antenatal clinics and finally delivered, were included in this study. Respondents having medical disorder such as hypertension, heart disease, renal disease and multiple pregnancies were excluded from the study. During interview, socio-demographic history regarding age, occupation, income and level of education were recorded. The study was conducted in Bangabandhu Sheikh Mujib Medical University and BIRDEM during the year 1998. A total number of 100 cases were included in this study. Among 50 GDM cases 32 had well controlled diabetes i.e. FBS between 4 to 5.5 mmol/L. Of the GDM patients 50% were treated with diet only and rest with diet and insulin. Socio-demographic parameters were not significant. No maternal mortality and morbidity was found in well-controlled GDM group. But in uncontrolled group 2 cases of poly hydroamnious, 2 cases of pregnancy induced hypertension, 2 cases of PET and one case of UTI were found. No prenatal and maternal complication for well-controlled GDM women had been observed. But there were 7 cases of hypoglycemia 2 cases of IUHR (intrauterine growth retardation) and 4 cases of jaundice among the neonates of uncontrolled diabetic mothers. In addition to these there were 2 cases of polyhydramnios, 2 cases of pre-eclampsia (PET), 2 cases of pregnancy induced hypertension (PIH) and one case of urinary tract infection. On the other hand the controlled group had 2 cases of postpartum hemorrhage (PPH) and 2 cases of puerperal pyrexia. There had been one case of jaundice and umbilical

sepsis in newborn in the controlled group. The maternal and prenatal outcome of well-controlled GDM was normal and similar to that of non-diabetic pregnant women. If GDM could kept well controlled throughout the pregnancy the maternal and prenatal outcome was almost like that non diabetic pregnant women.

**197. Parvin T; Ali MH; Akter SFU; Haque MA; Jabbar MA. Reproductive health related complaints of adolescent school girls of Dhaka city. *JOPSOM*. 2003; 22(2):1-5.**

The purpose of the study was to find out the reproductive health related complaints and associated factors among adolescent girls of some selected schools of Dhaka city. This descriptive cross sectional study was conducted from March to June 2001 in three different girls' high schools of Dhaka city. A total of 240 female students of class VIII and class IX were included in this study. The school was selected purposively and the students were selected by systematic random sampling technique. A structured questionnaire and checklist were used to collect data through face to face interview. The study findings found that most of the respondents (83.4%) were middle class family and 54.2% of them were malnourished. Their mean age at menarche was 12.4 years. Majority of them (83.3) practiced unhygienic protective measures during menstruation. More than four-fifths of the adolescents (82.9%) suffered from reproductive health problems like dysmenorrheal (60.0%), vaginal discharge (39.2%), irregular menstruation (25.5%), menorrhoea (24.6%), soreness of vulva (24.6%) and scanty menstruation ((7.9%). Majority of them (53.8%) did not consult anybody; the main reason behind this was shyness (59.8%) statistical association between nutritional status and irregular menstruation and between soreness of high and unhygienic protective measures was observed. During menstruation old clothes were mostly used by the girls, dried in a dark place, there being little use of soap or disinfectant for cleaning. This unhygienic practice produced ill effects on the reproductive health of an adolescent girl. The study results recommended that this study demands awareness, motivation, education, and appropriate health care facilities to improve the reproductive status of adolescent girls.

**198. Rabbani M. A day in the life of a Bangladeshi adolescent: using time use data to identify differences in adolescent lifestyles. Dhaka: BRAC, 2006.**

This study was intended to take a close look at how adolescents of Bangladesh spend their time, and identifies questions for further research. Using time use data from a national survey of adolescents in 2005, this study presents their daily time use to understand the differences in their life style. About 15,000 adolescents were interviewed in this nationally representative survey conducted by BRAC in 2005. The study revealed that on average, a Bangladeshi spends 23% of his/her day for Leisure, 20% for education, 16% for housework, and 10% for work. Much of the leisure of boys is outside the house interacting with others. There is a limited social interaction and more leisure time alone within the house for a girl. The gender gap is striking although girls and boys of 10-12 years old spend equal time in school. The girls do house work and boys work outside after school girls, in both rural and urban areas spend most of their time inside the household, doing housework or watching TV. There is little scope for socializing on playing for girls. Education is the most important activity of the day for most boys while for girls it falls below housework and leisure in priority. The experience of adolescence varied largely between rural and urban areas. Rural adolescents have low exposure to media. Rural boy's work outside the household twice as much as urban boys exposing them to higher health risk. Urban adolescents grow-up with little or no scope to play. For rural boys, the transition to adulthood is defined by the replacement of full time school to

full time work. For urban boys, growing up also means more time spent on communicating. For girls, marriage is the turning point in their lives, when schooling disappears and socializing is restricted. Commuting and media seem to have a major presence in the lives of urban adolescents. Urban girls spend the most time watching TV or listening radio. The poor are working more than the rich. The boys are spending more time on education. Academics in other parts of the world have suggested policies to reduce time in commuting so that people can allocate their time on more enjoyable activities, facilities and easier access to engage in desirable activities, such as playing and socializing, in regarded to bring about better developmental outcomes.

**199. Rahman L; Kabir M; Rob U; Siddiqua Y; Mutahara MU. Mid-term review of GOB-UNFPA ARH Project: an initiative for improving reproductive health of adolescent girls in Bangladesh through peer education and personal social education. Dhaka: Population Council, 2003.**

This project aimed to develop new initiatives to address the unmet reproductive health needs of married adolescent girls. The study methods included review of documents, discussions, interviews and observations. In-depth interviews with married adolescent girls and focus group discussions with community leaders, peer educators and program managers of ARH Project conducted during an earlier research on the status of married adolescent girls by Population Council were also analyzed. The study was carried out in November and December 2003. A total of 7,810 adolescent girls and their husbands initially from twenty-three upazilas of three districts, mainly Sherpur, Chittagong and Chapainawabganj were primarily targeted. The needs assessment jointly carried out by UNFPA and in 1999. Both the study findings identified similar priorities and suggested that lack of education and income along with low social status render adolescents especially girls, powerless in society and family. Adolescent girls are frequently subjected to economic and sexual exploitation, including violence. Superstition and ignorance of reproductive health problems among adolescent girls and their environment make them vulnerable to many reproductive illnesses. Adolescent girls frequently suffer from RTIs and are potentially at risk of STIs. Moreover, fertility rate as well as the maternal mortality rate and infant mortality rate for adolescent mothers are extremely high. At the same time, they remain an invisible neglected group in society. There is an absence of adolescent friendly services; health service providers are neither capable nor aware of reproductive health issues of married adolescent girls. Furthermore, there is no promotion of delayed childbirth and spacing for which contraceptive use rate remains low among these girls. Thus, there is a need to address the rights to health, livelihood and protection of adolescent girls in Bangladesh.

**200. Rahman, M; Khan, AR; Nahar, L; Akhter, S. Rapid assessment of infection prevention and control practices in health care facilities. Dhaka: BIRPERHT & WHO, 2006.**

The main objective of the study was to assess current knowledge, attitude and practice of prevention and control of infection among the health care personnel working in different health care facilities and to make recommendations for the prevention and control of health care associated with infection in the various health care facilities. The survey was cross sectional and descriptive in nature. The terms of reference of the survey were undertaken an hygienic audit in sample clinical areas at sixty health care facilities throughout the country from tertiary to primary level hospitals during July and October 2006. A group of trained data

collectors were recruited to collect the relevant information on knowledge on hospital infection prevention and control, daily practice on prevention and control of hospital infection using observation checklist. The collected data were cross checked and verified by the principal investigator and then entered into the computer. Data were analyzed to set objectives using SPSS software packages. Analysis indicated only 1.5% hospital had Infection Control Committee (ICC), however their activities were few. There was no ICN (Infection Control Nurse) in the hospital. The respondents felt the necessity of in-service training on hospital infection control and prevention. The medical college hospitals maintained better management than other health care facilities. Bar cake soap was available in all health care facilities, but not liquid soap. In a very few hospitals, liquid soaps were utilized by physicians/surgeons by their arrangements. In most of the cases, they used needles and sharps which are dumped or burned in the hospital premises. About the staff management and supervision of the health workers, 83% in the medical college hospitals had duty rosters for the cleaners and were hanged in the ward master's room, in the hospital kitchens, floors and walls were not up to level. At the upazila level hospitals, there is no separate room for dead body and the majority of those, the dead bodies' are kept in the verandah. Better decontamination procedures of surgical appliances were maintained in the medical college hospitals followed by district hospitals, it poor decontamination practice was observed in the Upazila Health Complexes. The ICCS should ensure sufficient representation from the key departments of the hospital to oversee the work of the infection control. A multi-disciplinary approach to be adopted and that there is a forum in place for the exchange of experiences and best practices.

**201. Rahman M; Sulaiman M. Transition to labour market: what opportunities does it hold for adolescents in Bangladesh? Dhaka: BRAC, 2006.**

This study addresses the issues to reflect on what young people's work opportunities are in Bangladesh and their choice between work and school. The survey showed that very few young people begin with formal employment when majority would like a job with tenure and salary. Young people become active financial managers from young age. Men tend to borrow from friends and relatives whereas young women appear to have access to savings and loans through NGOs particularly in rural areas. For boys work is more routinely a part of their adult life. For girls, reporting that they work for paying in the least is relatively noble. The process of entering into work is very gradual. It begins with informal opportunities in the farm or in casual employment. With age the trajectories are quite different for boys and girls. The most majority of boys spend most of their time income earning activities by the time they are 24. A similar proportion of women are engaged in household work. Opportunities for income generating employment are slightly better in urban areas. The majority of which are casual wage workers. Returns to education are negative both for boys and girls. 20 percent of the day laborer adolescents wanted to be involved in own agriculture. Adolescent students were still living with the dreams of an ideal life, which is to get a good job. Over 80% cherished to be in services. Getting married was one of the key events that influenced the schooling and employment status of the adolescents. During adolescent attitude and behavior are likely to be shaped by role models. The study recommends that some very useful and effective steps may be needed to change the present scenario of transition to the labor market.

**202. Rahman MA; Siddiqua SA. Return of menstruation and its relation with breast-feeding status. *JOPSOM*. 1999; 18(2): 40-46**

The study was undertaken to explore the pattern of breast-feeding and its effect on lactational amenorrhea among Bangladesh women. This community based follow-up study was conducted on 516 mothers who underwent child delivery in two urban hospitals. Information was collected on their breast-feeding pattern and return of menstruation within 24 months following the recent delivery. The study was conducted during September 1993 to December 1995 in the suburbs of Dhaka city under the Department of Maternal Child Health and Family Planning (MCH&FP), National Institute of Preventive and social Medicine (NIPSOM). The study revealed that the age of the respondent mothers was between 14-40 years. The mean age was 23.9 years. It reveals that 29% of the mother were illiterate and 21.9% and 25.6% received primary and secondary level of education respectively and the rest 23.5% had high school or above level of education. Approximately half of the mothers (49.6%) were housewives and 31.4% were service holders. The mean age at marriage of respondents was 17.45 years with a range of 10-30 years. It showed that the distribution of the women as per age at first marriage. It is unfortunate that quite a large number of girls in our study (15%) were given marriage at very young age (<15 years). Antenatal record showed that during the last pregnancy, 58.8% of the mothers had 5 or more antenatal visits, and 96.5 % mothers completed 2 doses tetanus toxoid vaccination. It also revealed that the babies were given to the breast at birth, but the percentage of exclusive Breast-feeding continued for 5 months in only 8.5 % cases. The return of menstruation was positively associated with the duration of breast-feeding. The study results indicated that the mothers were not properly motivated about the importance of breast-feeding although all of them regularly visited the antenatal clinics and underwent delivery in the hospitals. It might be assured that the mothers were not aware about the benefit of breast feeding and they are not properly motivated. Efforts should be made to create awareness among mothers who were preparing themselves to welcome a new baby.

**203. Rahman MM; Barkat-e-Khuda; Reza MM. Determinants of safe delivery practices in rural Bangladesh: evidence from the Bangladesh Demographic and Health Survey 1996–1997. Dhaka: ICDDR,B, 1999. (Working paper; no 155).**

The objective of this paper was to investigate the selected demographic, socioeconomic, cultural and programmatic factors associated with safe delivery practices in rural Bangladesh. Data of this paper was drawn from the secondary analysis of the national level data of the BDHS 1996–1997. The sample for this analysis consisted of 6,160 ever-married women aged 10-49 years who had at least one delivery before the interview. Descriptive statistics and multivariate regression methods were employed in analysis data. A logistic regression model was used here. The data showed that almost all the deliveries (95%) took place at the homes of the women and most of them (84%) were assisted by untrained TBAs, relatives, neighbors in unsafe and unhygienic conditions. Only 16% of the deliveries were assisted by the medically trained persons, such as registered physicians, nurses, paramedics and trained TBAs. Multivariate regression results showed that the uneducated women are less likely to have safe deliveries. Exposure to television was positively associated with safe delivery practices. Conservatism and religious taboos were likely to affect the delivery practices, since Muslim women were less likely to have safe-delivery practices compared to non- Muslims women. The results suggested that the need for behavior change communication activities to be undertaken to educate the community people, particularly the uneducated and conservative women, about the benefit of safe delivery practices.

**204. Rahman MM; Kabir M; Shahidullah M. Adolescent self reported reproductive morbidity and health care seeking behavior. *J Ayub Med Coll Abbottabad*. 2004; 16(2):9-14.**

This paper was initiated to assess the magnitude of self reported gynecological morbidity unrelated to childbearing among the adolescents irrespective of their marital status. It also explored the determinants of health care seeking behavior of the adolescents for their reproductive ailments. Both quantitative and qualitative data were collected for this study. Cross sectional study was conducted both in rural and urban areas using a multistage cluster sampling technique. A nationally representative data on 2883 adolescents irrespective of their marital status were analyzed. The results of paper revealed that a large proportion of the adolescents (64.5%) reportedly have been suffering from gynecological morbidity. The most frequent form of morbidity was menstrual disorders (63.9%) followed by lower abdominal pain (58.6%), burning sensation during urination(46.1%), genital itching (15.5%), vaginal discharge (3.4%) etc. Multivariate logistic regression analysis revealed that older adolescents aged 15-19 years, family incomes, type of family, type of residence and hygienic practice during menstruation appeared to be influencing factors for adolescents' reproductive morbidity. The results also revealed that about one fifth (18.0%) sought health care for their gynecological ailments indicating that adolescents were unaware about their reproductive morbidity ( $p<0.05$ ). For assessing the factors influencing their health care seeking for reproductive morbidity, multivariate logistic regression analysis found significant positive association with adolescents aged 15-19 years, having autonomy in treatment, working status, adolescents of joint or extended family ( $p<0.05$ ). Adolescent reproductive health in Bangladesh indicates high incidence of maternal morbidity. These health problems made variation by socio-economic and demographic characteristics of the adolescents. Recommendations to address these problems include encouragement of female education, introduction of family life education in school curricula, creating community awareness for seeking health care and empowerment of women in household decision making process.

**205. Rob U; Islam MM; Mahbub-ul-Anwer M; Arifeen A; Talukder MN; Rahman L. Population and development pilot research at community level on linkage between reproductive health and poverty. Dhaka: Population Council, 2006.**

The Study was undertaken to identify the general illness pattern and care practices as well as reproductive health care seeking behavior of women of reproductive age in the study area. It also attempted to investigate the relationship between reproductive health seeking behavior and economic status. Qualitative and quantitative data were collected from two unions located in poverty prone area, one is Tilakpur of Akkelpur upazila form Joypurhat district, and another is Mirsarai of Chunarughat Upazila form Habiganj district. Using systematic sampling procedures, a total of 848 married women of reproductive age were interviewed by using a structural questionnaire in the baseline survey. The qualitative data were collected to elicit the people's perception about the linkage between reproductive health and poverty by carrying out eight participatory rural appraisal sessions with women and men, two focus group discussions with field workers, 22 indepth imterviews with women, service providers and community leaders. The Results of the study revealed that the women of the poorest households seek less reproductive and maternal health care, as ccompared to that of their richest counterpart. The poor women also receive less reproductive and maternal health care services from qualified doctors. Most of them rely on unqualified field service providers for reproductive and



maternal health problems. It has found that main source of financing the cost of treatment is family savings, however the poor are more prone to sell their asset or incur loan dominant reasons for not seeking treatment for reproductive and maternal health problems on the inability or ignorance to perceive the services as necessary and the cost. In case of treatment for menstrual problems, RTIs and complications during childbirth, more than half of the women did not receive treatment because of the cost. On the basis of the study findings, it should be introduced to reduce the catastrophic health expenditure for delivery related and RTI/STI services and a follow on pilot study should be taken in the low performing area in Chunarughat.

**206. Rob U; Mohammad N; Siddiqua Y; Mutahara M; Talukder MN. Status of married adolescents in Bangladesh. Dhaka: Population Council, 2004.**

The primary objective of this study was to understand the current status of married female adolescents in Bangladesh and consider how programs could better meet their needs. The study was comprised of three elements: 1) secondary analysis of existing data from three successive BDHS from 1993 to 2000 and review of existing, 2) semi-structured, in-depth interview with 32 adolescent girls who resided in the catchments area of the UNFPA supported adolescent project. The study sites were selected by randomly identifying four sub-districts in the project area namely Nachole in Chapai Nawabgonj, Sherpur sadar in Sherpur and Rangunia and Hathazari from Chittagong, and 3) focus group discussion with community leaders in the UNFPA supported project areas, as well as with project staff and peer leaders. The findings from this study highlighted the distinct and often severe social and health vulnerabilities of married adolescents' girls. It has been observed that the mean age at marriage for females continues to be far below the legal age of marriage and most of the female adolescents get married by that age. Married adolescent girls were found to be less educated than their unmarried counterparts. Married female adolescents lag behind toward achieving higher educational and meaningful employment with restricted mobility outside their village. In brief, married adolescent females were found to be entangled with a wide range of social problems, e.g. mobility, education, personal freedom in taking food and purchasing necessary items, and participation in conjugal and household decision-making. It is suggested that any intervention that seeks to address the reproductive health of these young girls must also attend to their social context, life skills training and association with the micro-finance activities for the UNFPA project has the potential to empower married adolescent girls and MCH care should be expanded to include more active interventions.

**207. Shahabuddin AKM; Barua PC; Chowdhury S; Tasnim S; Begum N; Islam F; Rahman F; Sarker M. Qualitative study reports on availability and utilization of safe motherhood service in Dhaka city urban area of community based safe motherhood project. Dhaka: ICMH, 2001.**

The objective of the study was to determine the present status of antenatal, childbirth, neonatal and postnatal care services at urban settings and assess the utilization of available antenatal, childbirth, neonatal and postnatal care services at urban settings by pregnant women belonging to middle and lower classes of Dhaka City. This qualitative study was done as an additional measure to understand the present situation of our safe motherhood services and its utilization. This study was conducted by the community based safe motherhood project of the Institute of Child & Mother Health (ICMH), during the period of May to June 2001. Based upon predefined selection criteria, ten zones of Dhaka city were selected for conducting the

study. From the findings of the study it was found that the current antenatal care services available within the Dhaka City urban area was to some extent inadequate and incomplete. Mainly four types of antenatal services were provided likely weight measurement, checking of blood pressure, two doses of TT immunization and counseling. It was revealed that in these centers available services (like different examination of mother and child or abdominal examination) were largely unutilized or underutilized. The study identified the reasons of this problem like poverty, cost, ignorance or lack of awareness etc. On the other hand, fear of hospital, fear of misbehaving provider and fear of caesarian section were very strong factors that was made influence to utilization of child-births centers. In relation to cost of services, NGO (private clinic) centers were far away from poor man. Distance from the residence was a big and separate obstacle; influences of Dai and traditional providers were also kept a strong factor that influenced the utilization of child birth services. Usually, the Dai encouraged the pregnant for home delivery. Most of the respondents didn't visit the health centers during the postnatal period. Interesting findings was that contraceptive services were really good in this study area. But some people did not use and strong believed that it may be harmful for their body. Health facilities users had received some information about nutrition, childcares etc. but that was not up-to-date information. The findings of the study revealed that the elected community leaders were practically doing nothing themselves to improve the reproductive health centre or safe mother services for their own community. They were aware about this matter but hesitated about his/her duty. Finally it could be said that the safe motherhood services, available in Dhaka City were basically incomplete and inadequate considering its both quality and quantity. It is recommended that there should be conducted further study on total new users of services, which could not be reached and on the problems of the providers, which could not be assessed properly in the present study.

**208. Sultana S; Begum RA; Ahmed N. Case report: management of retained placenta in abdominal pregnancy. *Bangladesh J. Obstet & Gynaecol.* 2003; 18(2): 86-88.**

This case study was initiated to examine the management of retained placenta in abdominal pregnancy. A case report was placed in this article. A 30 year old multi-porous housewife admitted in Holy Family Red Crescent Medical College Hospital (HFRCMCH) in April 2001 because of the passage of purulent discharge from laparotomy wound and gradual swelling of abdomen for one month. She had seven lower abdominal pain and fever for two weeks following laparotomy for abdominal pregnancy 2 months back in a tertiary hospital. The present case was diagnosed at 22 weeks pregnancy with the help of ultrasonogram by an obstetrician. On the 7<sup>th</sup> post operative day patient went home on her own risk. After one month she was admitted in the hospital. She was treated with proper antibiotics, preoperative methotrexate followed by laparotomy. In laparotomy, pus was drained and placenta was found to be localized over the mental bed and it was removed easily. Her post operative period was uneventful and she was discharged on 7<sup>th</sup> post operative day. In conclusion, it may be said that an abdominal pregnancy is rare in event, awareness of this condition is important in reducing the associated morbidity and mortality. Though treatment with methotrexate is controversial and its potential use in abdominal pregnancies deserves further investigation.

**209. Sultana N; Jahan Y; Nahar A. Knowledge of adolescent school girls on some reproductive health issues. *JOPSOM*. 2001; 22 Suppl.: 1-9.**

The study was initiated to assess the knowledge of adolescent school girls on some of the reproductive health issues. This cross sectional study was carried out during March – June 2001 in two private schools of Dhaka city (Nabakumar Institution, Bakshibazar, Dhaka and Kadamtala High School, Kadamtala, Bashabo, Dhaka). The respondents were selected from class IX and X by simple random sampling and were 143 in number, an interview schedule with each of the respondents was used as instrument. The study results showed that most respondents (68.9%) had average knowledge about pregnancy and antenatal care and most (96.5%) were also very much well versed with the term family planning. However, their family planning knowledge was insufficient. Majority (97%) of the respondents was familiar with the term ‘AIDS’ and their knowledge about mode of transmission, sign/symptoms and prevention of HIV/AIDS was quite sufficient. Continuous mass campaigning through media and school text books for the last few years improved the knowledge of adolescents on HIV/AIDS. But, they still lack sound knowledge about family planning, menstruation, menstrual hygiene and pregnancy care. It is suggested that adequate and consistent knowledge on different aspects of reproductive health should be disseminated among the adolescent groups.

**210. Tasnim S; Barua PC; Shahabuddin AKM. Perception of rural female adolescents of Bangladesh about sexuality and relevant issues. *Bangladesh J Obstet & Gynaecol*. 2003; 18(2): 55-61.**

This survey was conducted to explore the values, beliefs and concerns of adolescents related to sexuality, sexually transmitted diseases (STD), acquired immune deficiency syndrome (AIDS) and sex education of adolescents of Bangladesh. This cross sectional survey was carried out at two unions of Sonargaon thana under Narayanganj district. There are 11 unions, 476 villages and 43,175 adolescents in this Thana. The sample was selected by multistage cluster sampling. Each household was considered as a cluster. A total of 458 adolescents both married and unmarried were interviewed face to face since September to December, 2000 using pre-tested semi-structured questionnaire. The study found that the mean age of respondents was  $17.1 \pm 2.3$  years, 36.5% were married and 13.2% of married adolescents were currently pregnant. The mean year of schooling was higher among unmarried. Premarital sexual experience was reported by eight percent of unmarried adolescents. The respondents expressed that male and female should marry at  $27.5 \pm 3.0$  and  $21.3 \pm 2.5$  years and ideal parental age at birth of first baby should be  $28.9 \pm 3.4$  and  $23.0 \pm 2.8$  years respectively. The majority of the respondents were against premarital, extramarital relationship and multiple partners. The percentage of adolescents that ever heard about gonorrhoea, syphilis, genital ulcer and AIDS were 37.6%, 34.5%, 4.4% and 98.3% respectively. Contraceptive knowledge was better among married and oral pill was most commonly cited method (98.8%). About 95.9% were in favor of premarital sex education. There was considerable gap between existing practice and what was considered ideal about the sexuality and related issues. The study concluded that there should scope for strengthening the knowledge on contraceptive, STD, AIDS and promoting safe sexual behavior through sex education intervention for the adolescents.

**211. Tasnim S; Shahabuddin AKM. Community based safe motherhood study report on skilled midwifery training. Dhaka: ICMH, 2001.**

The study was designed to improve the efficacy of diploma nurses to provide competent skilled midwifery services and thereby play vital role in reduction of maternal mortality and morbidity. The training has been conducted with a unique competency based curriculum that had been developed specifically to the need adopting the standard steps of curriculum development. The curriculum fully tested and updated by a triangulated approach of trainers view, trainees feedback and performance evaluation. The study found that the training was competency based and incorporated participatory methods for teaching and learning. For skill training, performance appraisal checklists were used for guided practice and assessment. For clinical training, the ratio of trainer versus trainees was 1:1. Assessment was done through continuous monitoring and supervision of written, oral and practical examination. On successful completion of the training the skilled midwives are placed on five randomly selected centers among the health care centers and comprehensive reproductive health care centers of urban primary health care projects of LGED. They proved their ability to provide competent care and assistance during pregnancy and labor and postnatal period. It is acknowledged that in the most developed countries maternal mortality or morbidity came down as the ratio of midwives giving birth is increased. Opinions vary in prioritizing the strategic action for safe motherhood and each country adopts strategies according to specific needs. The study suggests that many more number should be brought under skilled midwifery training and both the government and NGOs should be forwarded with their possible cooperation to move the programme strong and effective.

**212. Tasnim S; Shahabuddin AKM; Chowdhury S; Rahman A; Barua PC; Rahman F; Begum N; Islam F; Sarker M. Situation analysis of safe motherhood services of Dhaka city urban area. *Journal of Bangladesh College of Physicians and Surgeons*. 2005; 23: 54-58.**

The objective of the study was to assess present status of utilization of the antenatal, childbirth, postnatal and neonatal care services at urban setting. The study has been conducted during August to December 2001 in the catchment area of randomly selected ten health care centres run by partner NGOs of Urban Primary Health Care Project and Dhaka City Corporation in Dhaka metropolitan city. A total of 3,000 mothers with under one year child was selected randomly from about 49,526 households and information were collected by interviewer-administered structures questionnaire. Mean age of respondents was  $24.6 \pm 5.12$  years. Among them 31.14% were illiterate and 67.87% were Multipara. About 87.74% received antenatal care during last pregnancy of which 23.74% from public sector, 32.63% from NGO and 39.63% from private physicians. Antenatal care was provided by graduate doctors in 51.42% and by paramedics in 29.33%. Institutional delivery was 35% and conducted by a trained person in 39% cases. Reasons for not seeking medical care during pregnancy and delivery were financial difficulties (24.53%), no perceived problem (25.16%), transportation problems (11.70%) and fear of caesarian operation (4.43%). There found to be a universal preference for home delivery and majority of deliveries were conducted by traditional birth attendants. Pregnancy and childbirth were perceived to be a natural event and delivery should be done at home. Health centers were thought to be a place for dealing with emergencies and complications only.

## **2.4 CHILD HEALTH**

### **213. Anonymous. Child nutrition survey of Bangladesh 2000. Dhaka: BBS & UNICEF, 2002.**

The purpose of this report was to present the results of the child nutrition survey of Bangladesh 2000 to make the policy makers and programme managers aware and could address child malnutrition. This survey was the fifth in the BBS CNS series, was conducted in 2000 to generate national level data on nutritional status of children in the country. The survey was conducted in 442 primary sampling units (PSU) as the BBS' Household Income Expenditure Survey (HIES) 2000. The survey used the BBS's 'integrated multipurpose sample' (IMPS) design for sample selection, survey covered 4000 children aged 6-71 months from 252 rural and 190 urban PSUs from the whole Bangladesh. In addition to that anthropometric assessment of nutritional status, information on household demographic characteristics, environmental conditions, child feeding and caring practices were also obtained. Household socio-economic information was transcribed from the HIES 2000 data sheet into CNS data sheet. The prevalence of moderate wasting, moderate stunting and moderate underweight were 10.6%, 29.8%, and 38.5% respectively while the prevalence of severe wasting, severe stunting and severe underweight were 1.1%, 19.0%, and 12.6% respectively. Twelve percent of boys and 11.4% of girls were wasted ( $P=0.56$ ). 48.5% of the boys and 49.1% of the girls were stunted ( $p=0.71$ ). Prevalence of underweight was 51.4% in boys and 50.9% in girls ( $p=0.76$ ). Statistically significant differences were found in prevalence of malnutrition between the rural and urban populations. Among children aged 12-59 months the MUAC was less than 12.5 cm in 65%. According to the Gomez classifications of malnutrition 2.4% of all children were severely malnourished ( $WAM<60\%$ ), 11.5% were normal ( $WAM=90-109$ ) and 0.6% were overweight. Under food security variables cultivate land ownership was related to nutrition status. Increasing of annual household income was also related to lower prevalence of malnutrition. Caring practices were positively related to nutritional status. Health parameters were related to poor nutritional status including recent diarrhoea, measles, severe cough with fever and unhygienic latrine. This CNS confirmed a slow but progressive reduction in wasting, stunting and underweight in Bangladeshi children aged 6 to 71 months. Regression analysis demonstrated that acute malnutrition (wasting) was related to common acute childhood illness such as diarrhoeal diseases and pneumonia. Enhance efforts should be put in the prevention and treatment of acute illness in childhood to bring about a reduction in wasting. Therefore government efforts at improving girls' education should be strengthened. Appropriate programme to address appropriate complimentary feeding in second and third years of life should be undertaken immediately.

### **214. Anonymous. Baseline survey of caregivers' KAP on early childhood development in Bangladesh. Dhaka: UNICEF, 2001.**

The main objective of the study was to assess the knowledge, attitude and practices of caregivers regarding the care of young children focusing on their cognitive, emotional and social development. For data collection survey interviews on 1075 out of 1320 for CHT and 9663 out of 9680 for rest of the country were conducted. Besides FGDs, household observation and intensive interviews were the used method for this study. Results showed that in rural areas, more than half of the households were assessed as clean, while in the urban 61% were not clean. All knew that pregnant need care during pregnancy, but awareness on ANC/PNC was not up to the marks. All the caregivers identified parents and in laws as the

primary source of care during pregnancy, followed by husband (>70%), siblings (7 to 41%) and neighbors (7 to 15%). Care giving outside the family, health workers was impotent. Both in rural and urban areas the majority of caregivers (45 to 66%) and in CHT (33-39%) identified mass media as the most credible source of information on care during pregnancy followed by doctors/nurses, Health and FP workers, neighbors, relatives and friends. Large number caregivers were not aware about the preventative childhood diseases. The majority of caregivers were not aware about optimal breast feeding practices and bottle-feeding practices were observed more frequently in urban areas. The primary caregivers (mothers) spends about 4.1 hours per day while secondary caregiver spends 3.1 hours. More than 60% of caregivers believed that childhood extended up to the age of 2 or at 3 years. The caregivers were not aware about child's mental development process and other complications. A pain full finding was that child with disabilities was given inadequate food, scolded and neglected, not sent to school etc. But they had equal rights as other child. The caregivers from both rural and urban areas expressed the view that father did not play role the learning process of the child. Approximately 30% of parents used some kind of violence against children that perceived a negative impact on the child. Caregivers identified playing and participation in games with others provided good opportunities for socialization. Media has a great influence on the development of childcare practices. The result of logistic regression indicated that rural mothers were less likely than urban mothers to spend time in childcare. Overall no substantive differences in caregivers were observed between urban and rural areas. A number of cultural and religious practices were observed to be an integral part of the value system recognizing. The study recommended to given more importance to mother in the family.

**215. Anonymous. Saving newborn lives- newborn care practices in Bangladesh-evaluation survey 2004. Dhaka: ACPR & Save the Children, USA, 2004.**

The survey was driven to measure changes on selected SNL indicators since the baseline survey of 2002, and to provide estimates on variables indicative to the status of neonatal care during prenatal, delivery and postnatal periods and new born care at the household level in the project areas. The survey employed a unapazila/domain representative two-stage sample that was selected using thirty-cluster procedure. Data were collected by interviewing randomly selected mothers using multi-items structured questionnaires. The survey also used the same questionnaires that were used in the baseline survey with some minor modification. Weighting factors were applied to obtain overall estimates. Comparisons are made with baseline and other comparable results. As observed in the survey- Prenatal care coverage with one or more prenatal visits was found to be significantly high at 92.2% in SNL project area. It has significantly increased by 22% points during the project period from 70.2% in 2002 to 92.2% in 2004. The gap between prenatal care coverage with at least one visit (92.2%) and with 3 or more visit (72.1%) is quite high. It appears that TT coverage with 2 or more doses during last pregnancy (47.4%) and TT coverage with 3 or more doses (79.7%) during life time (Card + Own response) have also increased by 28.1 and 9.7 percentage points respectively in the last two years. Only 9.3% of the deliveries occurred at hospital/clinic, which shows a modest increase by 2.5 percentage points since 2002. Knowledge of mothers about 2 or more danger signs that may occur during labor and delivery records a 13.3% point's increase from 77.8% in 2002 to 91.1% in 2004. Knowledge of 3 or more delivery danger signs increased at 50% in 2004 from 18% in 2002. Postnatal checkup from clinically trained providers within 72 hours of delivery shows a significant rise at 27.3% in 2004 from only 2.4% in 2002. About 77% of the newborn were examined by a provider within 24 hours of birth and 41.3% within 3 days.

Newborn checkup immediately after birth (within 24 hours) has increased by 12.9% points from 14.4% in 2002 to 27.3% in 2004. Breastfeeding practices seem to have increased substantially since 2002. Practice of patting the newborn to the breast immediately after birth (within 1 hour) rose to 76.2% and within 24 hours of birth rose to 96.3%. Further efforts are needed to increase delivery assistance by trained and skilled providers. A large number of mothers not covered by prenatal care needs to be addressed and awareness about the proper timing of prenatal care needs to be increased.

**216. Anonymous. Saving newborn lives: Bangladesh program evaluation. Dhaka: Save the Children, USA, 2005.**

The objectives of this study were to improve neonatal health and survival. The primary strategic objective to achieve this goal was to increase and sustain key health practices and the use of essential services in communities. Five immediate results were established: Strengthen and expand new born health interventions, adapt and refine promising model programs, advance the state of the art related to newborn health, mobilize commitment and resources, establish strategic partnership. The final evaluation of the Bangladesh SNL program was conducted between November 20 and December 16, 2004. The evaluation was conducted by a team which included representatives from the SNL field office and partner NGOs (BRAC, BPHC/PHD and CARE), the government of Bangladesh (DGHS, DGFP), ICDDR'B USAID, NSDP, DAB and the professional societies. Sources of data include: baseline and follow-up household surveys; routine monitoring data from community registers, first-level facilities and training assessments; project process documents and reports. Interviews with key informants were conducted in Dhaka between November 25 and December 2. Four project upazillas (Dinajpur, Chaudagram, Jessore, Maheshkhali) were visited by field team between December 4 and 7: qualitative interviews were conducted with caretakers of children, TBAs village doctors, community health workers, staff from both SNL and the government. A total of 14 research activities were funded by SNL in Bangladesh. The disseminated research was qualitative research on newborn practices in rural Bangladesh. This was the first qualitative study on newborn health practices in the country. Data were used to develop BCC strategies, messages and materials and to identify effective channels, prenatal death adult, as described above data have been used to improve maternal and newborn practice at hospitals, assessment of prenatal mortality- a secondary analysis of DHS data. Findings were used to convince the MOH to include neonatal and prenatal indicators in routine MIS. It will be recommended that continue to support regular meeting and workshops that link program staff with research and policy staff – both government and NGOs, continue the production and distribution of technical updates and policy documents, develop a strategy for disseminating research and program findings more systematically, targeted to different target audiences, identify sources of funding to support ENC training and BCC training for both NGO and government staff.

**217. Anonymous. State of the new world's newborns, Bangladesh. Dhaka: Save the Children, USA, 2001.**

The objectives of this report are explore the magnitude of the burden of neonatal mortality and morbidity, determine the factors responsible for high newborn mortality and morbidity, identify organizations that are potential partners in SNL activities, identify gaps in research and programming related to new born health. The analysis was based on indicators and determinants related to newborn health and conceptual framework. More than nine tenths (93%) of mothers in Bangladesh deliver at home and non-medical birth attendants conduct the

large majority (84%) of these deliveries. Hence, most neonatal deaths take place in the community without support from trained health care professionals. In Bangladesh the newborn's health problems start long before birth. The intergenerational cycle of mal nutrition starts with the mother of the child. She herself was born with LBW and grew up in an environment of poverty, food shortage, disease and neglected. Of the 25 million women of reproductive age in Bangladesh today, 19.4 million are currently married. The total fertility rate is 3.3. 48% of 15-19 year old girls are married and 115 out of every 1,000 adolescents females have given birth at least once, this latter figure compares with a value of 20 for Sri Lanka and 4 for Japan. Women are not only malnourished in anthropometrical terms but suffer from very high rates of both vitamin A deficiency and anemia. A recent national survey found that approximately 2% of all women reported being night blind, and low serum retinol levels were found in approximately half of pregnant and lactating women and 85% of all non-pregnant, non-lactating women of reproductive age. Infections in mothers influence pregnancy outcome such as LBW, stillbirths, congenital anomalies, and neonatal infections. Hepatitis B infection is a serious public health problem in this country. Key areas in which saving new born lives initiative may be taken collect precise national demographic data on prenatal and neonatal deaths. Conduct studies on causes of death. Conduct community-based intervention studies addressing recognition and management of hypothermia, asphyxia, LBW and infections. Monitor care-seeking behavior for new born care. Assess TBA services, including their potential role in newborn care.

**218. Anonymous. Vaccination coverage survey of Nasirnagar upazila of Brahmanbaria district, Bangladesh. Dhaka: Save the Children, USA, 2005.**

The overall objectives of the survey were to assess the routine TT immunization coverage among women of 15-49 years of age who have given birth to a child within last one year and find out reasons for non-immunization and partial immunization, assess the routine immunization coverage of children aged 12-23 months of age and find out reasons for non-immunization and partial immunization. This survey followed the WHO recommended 30-cluster sample survey method, which has been widely used in many developing countries to assess immunization coverage. It is relatively simple and can be done at low cost. Briefly, the immunization information is collected on a randomly selected group of 210 children from 30 clusters (7 children per cluster) in a given community. It gives an estimate of immunization coverage to within +/- 10% points of the true population proportion with 95% statistical confidence, assuming a design effect of 2.0. Another 7 children between 12-23 months of age were selected from each cluster to ascertain their routine immunization status. The crude coverage data are 84% of children between the age of 12-23 months had received BCG, 59% of them received DPT 3<sup>rd</sup> dose, 58% had been vaccinated against measles. 54% of children were fully immunized by 12-23 months of age. Another 15% children were not immunized. Comparison with national CES conducted in 2002 and the previous survey conducted in Nasirnagar is some improvement in the overall immunization coverage of children in Nasirnagar upazila. But it is still well below 90%. It may be mentioned here that data of recently conducted national CES is not available. Sc has already invested lot of effort in improving EPI coverage of Nasirnagar with activities which have been proven to be successful in many areas of the country. Before undertaking any new intervention an in-depth qualitative study is felt necessary to find out: Why there is very high occurrence of abscess cases following immunization in children and what can be done, suggest areas of intervention where SC can intervene with human logistical and technical resources. Meanwhile strengthen



monitoring system based on actual field finding not just relying on the routine EPI report. To do this increase frequency of field visit by the SC personnel posted at Upazila Health Complex is required.

**219. Ashrafunnessa ; Khatun S ; Islam MN ; Chowdhury S. Seroprevalence of rubella antibodies among antenatal population attending a tertiary level hospital in Dhaka city. *BMRC Bulletin*. 2000; 26(3): 75-81.**

The objective of the study was to identify the seroprevalence of rubella IGs among the antenatal population attending a tertiary level hospital in Bangladesh. The study was carried out in the Department of Obstetrics and Gynaecology of the IPGM&R presently, BSMMU. Six hundred and nine consecutive pregnant women attending the obstetrics outpatient department were recruited for the study irrespective of gestation period. Data collection included particulars of the patient, her socio-economic status and occupation related information, obstetric and medical history etc. Analysis of the variance was performed and Chi-square test was used. The results showed that 85.9% of the pregnant women were seropositive. This finding indicated a high seroprevalence of rubella antibodies among the pregnant population in Dhaka. Still, a large proportion of women were susceptible to rubella infection during their reproductive years. This study demonstrated that 80% of the pregnant women between the ages of 15-20 years had rubella IgG. It also showed that the seroprevalence increased with age, peaking at 87% for the age group of 26-30 years. Among 609 women studied, 70% of the pregnancies occurred in 21-30 year group, which indicated a high risk of rubella infection during their pregnancies. The results of the study indicated strong similarity between the immune status of Bangladeshi women and that of Indian, Turkish, Caribbean and South American women by the time they reach the childbearing age. It was opined that like many other countries rubella was an endemic condition in Bangladesh and a detailed study was required for identification of intrauterine infection and its influence on prenatal morbidity and mortality. More detailed epidemiological studies for a basis of national immunization programme were also needed.

**220. Azim SMT; Islam MT; Tunon C; Mahmood S; Kabir H; Mahbub-ul-Alam; Saha NC. Testing validity of ARI diagnosis made by primary health care field workers with and without a checklist. Dhaka: ICDDR,B, 1999. (ICDDR, B working paper; no. 158).**

The objective of the study was to compare and evaluate the performance of the minimally trained Health Assistants in making a correct diagnosis of ARI using the checklist against that of a fully trained physician. Twenty randomly selected Health Assistants (HA) initially examined 228 children aged less than five years without using any checklist and later examined 374 children using the ARI checklist. All the children examined, irrespective of HAs' diagnosis, were sent to the Medical Officer for assessment and were treated based on this diagnosis. The Validity of the HAs' diagnosis of ARI was measured by calculating the sensitivity and specificity of diagnosing ARI by the HAs with and without the use of the checklist. The sensitivity of identifying a case ARI by the HAs was 58% before the introduction of the checklist and 64% after its introduction ( $p=0.3$ ). Similarly, the specificity was 71% before the introduction of the checklist and 69% after its introduction showing no significant difference. The ability of the HAs to correctly classify ARI cases as no pneumonia; 'Pneumonia or 'severe pneumonia/very severe disease' changed from 31% to 37% ( $p =0/3$ ). Strikingly, in 56 cases (91%) diagnosed as ARI, the physicians did not count the respiratory rate or record any sign of severe pneumonia to support their diagnosis. Similarly, in 114 cases

(88%) diagnosed by the HAs as ARI, the respiratory rate was not counted. The study showed that the ability of the health workers to identify and classify ARI cases was low and simple introduction of the checklist as a diagnostic aid did not help improve their skills.

**221. Baqui AH; Zaman K; Persson LA; El-Arifeen S; Younus M; Begum N; Black RE. Simultaneous weekly supplementation of iron and zinc is associated with lower morbidity due to diarrhoea and acute lower respiratory infection in Bangladeshi infants. *Journal of Nutrition*. 2003; 133: 4150-4157.**

This study evaluated the efficacy of weekly supplementation on diarrhea and acute lower respiratory infection (ARRI) morbidity in Bangladeshi infants. The methodology was used in a double blind, randomized, controlled community trial, 799 infants aged 6 months were randomly assigned to one of the following 5 groups: 1) 20 mg elemental iron with 1 mg riboflavin 2) 20 mg elemental zinc with 1 mg riboflavin 3) 20 mg iron and 20 mg zinc with 1 mg riboflavin, 4) a micronutrient mix (MM) containing 20 mg iron, 20 mg zinc, 1 mg riboflavin along with other minerals and vitamins and 5) a control treatment, 1 mg riboflavin only. The findings of the study revealed that health workers visited lack infant weekly until age 12 months to feed the supplement and to collect data to a diarrhea and ARI morbidity. Hemoglobin serum ferritin and serum zinc levels of a sample of infants were measured at 6 and 12 months. Compared with the control group, at 12 months serum ferritin levels were higher in the iron+zinc was associated with lower risk of severe diarrhea, 19% lower in all infants and 30% lower in less well nourished infants with weight for age z-score below -1. Iron+zinc supplementation was also associated with 40% lower risk of severe ARI in less well-nourished infants. MM supplementation was associated with 15% higher risks of diarrhoea in all infants and 32% higher risk in less well-nourished infants. Intermittent simultaneous supplementation with iron+zinc seems promising; it will be useful to determine within higher doses would provide greater benefits. The study suggests to further examination whether infants who complete 6 months of supplementation with MM and those who did not started with differential morbidity experiences.

**222. Barbhuiya MAK; Hossain S; Hakim MM; Rahman SM. Prevalence of home deliveries and antenatal care coverage in some selected villages. *BMRC Bulletin*. 2001; 27(1): 19-22.**

The objectives of the study were to find the prevalence of home deliveries and antenatal care coverage. A cross-sectional study was conducted in 14 selected villages of Gazipur upazil of Gazipur District during February-August 1997. All those females who delivered within last three months from the selected villages were the study population. Data were collected by two trained interviewers with semi-structured interview schedule. The sample size was determined 505 by considering the demographic data of Gazipur upazilla and proportion of pregnant women in that population. Study results showed that 83% of the respondents received antenatal check-up throughout their last pregnancy. Most of this group (88.5%) received this care from "Health Assistant" (HA) or "Family Welfare Visitors" (FWV) while only 3.1% received care from graduate doctors (MBBS). Of the respondents 91.3% was found to have delivered at home while only 8.7% at institutions. In response to a query regarding the reasons for not attending the antenatal clinic, 76.47% of the respondents mentioned that they did not feel the need to attend antenatal clinic and rest of the respondents mentioned that the long distance was the cause. Study findings also suggested that there was association of place of delivery with level of education and family income of the respondents. Also there was an

association of utilization of antenatal care with level of education and family income of the respondents.

**223. Basher MS; Kabir S; Jalal S; Bhuiyan MSA; Yunus M. Status of antenatal care in home in a rural area of Bangladesh. *JOPSOM*. 2002; 21(1): 1-7.**

The objective of the study was to assess the status of prenatal care in home level with focus on nutrition, workload, sleep and rest, and to examine the factors contributing to it. Thirty key-informants were selected purposively. To have information about the family resource base and characteristics of the members, it was decided to include other members of the family (29), focusing on key informants, their husband (29) and female kins of husbands (28) on the key research problem. Ethnographic interviews were conducted and managed in the field notes. Seven days' dietary history, activities, sleep and rest patterns were recorded on every alternate day. Qualitative data were processed manually by using master-sheet, while quantitative data were processed by using computer software SPSS. The study was conducted at ward 2 of the Jamtoil union of Kamarkhand Upazila in Serajganj district in 1999. The study results revealed that key informants did not have adequate calorie and protein. Nearly 73% of them did not reduce workload, while 6.7% increased it than they had to do before conception. They performed all domestic tasks starting from early morning to late evening, as they believed it would help in easy, quick delivery. They hardly had rest as they assumed that excessive rest would result in pregnancy complications, and painful and complicated labor. Husbands of 63.3% of key informants and 66.7% husbands' kinds considered that they were offering sufficient care to the pregnant women. In addition, they viewed modern health care as exclusively useful in times of pregnancy complications. However husbands of 14 (48.27%) key informants and 20 husbands' kinds opined that modern health care was not needed as basic health care provided at home was sufficient, and it would be needed exclusively to treat complicated cases. Antenatal care at home could be promoted through consistent and long-term health education to the male members having decision making power, female kinds of husbands of the families who could afford to provide needed care to their pregnant relatives at home and at the modern health centers.

**224. Begum K; Khanam RA. Report of building up the capacity of the health care providers in health facilities to deal with the child abuse. Dhaka: OGSB, DGHS & WHO, 2005- 2006**

This report is prepared for strengthening the capacity of health care providers to manage the abused children. The objectives of the project are to create the awareness regarding situation of child abuse, to help the service providers to improve their knowledge and skill to deal with child abuse, to formulate a prevention strategy. Total 72 care providers and 61 children and their guardians were interviewed. Few high lights from the need assessment are- it is defined by WHO that 0-18 is child. But only 11% of care provider knows correctly that who are child and 89% does not who are child actually. All the steps likely history taking, physical examination, documentation, legal support, counseling and referral followed in 32% of cases who were identified. World wide 40 million children are victims of abuse. In Bangladesh there is no statistics of child abuse but the reported cases are only the tip of the ice berg. All the health care providers should have training on management of child abuse. There must be some national policy and guidelines for management of child abuse. A list of local NGO, who are working with child abuse, will be available in hospitals for referral linkages if necessary.

**225. Begum S. Prenatal health and its determinants in rural Bangladesh. Dhaka: BIDS, 2004. (BIDS research report; 175).**

The study is carried out to present the extent of prenatal health risk of rural women and nature of these health problems, current knowledge and practice of rural women regarding pregnancy and childbirths. In total 2036 pregnant women were interviewed for collecting data in this regard through several stages. The study identified that majority sample women are younger but beginners of reproductive career. Most of them are illiterate and very few have beyond secondary level education. In rural area it is seemed that more than 60% of the women develop some maternal health problems during pregnancy. Three types of health problems play the dominant role for prenatal morbidity of rural women. They are anaemia/malnutrition, abdominal pain and vomiting tendency. According to prevalence rate 22-23% of the rural pregnant women suffer from each of these three major health problems. It is observed that 29% of the rural pregnant women receive some kind of prenatal health care. Education of women and households renders positive influence on ANC use though it is stronger in women's case. ANC requires special training and skill on the part of provider. Rural women are found to approach village level health and family planning workers for this care. The antenatal care is a component of basic health care service package of the country called Essential Service Package (ESP). Rural govt. health facilities believer came in full package to the rural women. ANC is an umbrella teams to describe medical procedure carried out during pregnancy with an aim to reduce maternal mortality and morbidity. Compared to uneducated and less educated omen, highly educated women receive ANC services more. Lack of knowledge and understanding is the main reason hindering rural women to availing ANC for pregnancy. Although more than 90% of the sample pregnant women is aware of the need for adequate quantity and quality of food during pregnancy. The study suggests that government should keep its promises with all seriousness for necessary improvement of women's health. Women's access to reproductive health care has to be addressed. Through proper utilization of the workers rural coverage of these services can be increased.

**226. Darmstadt GL; Saha SK. Traditional practice of oil massage of neonates in Bangladesh. *J Health Popul Nutr.* 2002; 20(2): 184 -188.**

This study was undertaken to gain insights into the epidemiology, practice, and perceptions regarding traditional oil massage of Bangladeshi neonates. A questionnaire was administered verbally to the primary caretaker of 332 outpatients at the Dhaka Shishu Hospital, and to 20 women with children encountered at the Matlab Health Complex in Bangladesh. More than 96% of the caregivers practiced oil massage, irrespective of socio-economic status and place of residence. Among those at the Dhaka Shishu Hospital who practiced oil massage, mustard oil was used alone or in combination by 95% over the entire body, 1-3 time(s) daily (96%), starting in the first three days of life (72%) in both term and pre-term neonates. Perceived benefits included prevention of infections (69%) and hypothermia (2%). Oil message was initiated on the first day of life in nearly half 47.5% of the neonates and before the end of the third and fourth days of life in nearly three fourths (71.9, 230/320) and in four-fifths (80%, 256/320) of the cases respectively. In a small subgroup of patients (6.9%, 22/320), oil message was, however delayed beyond the tenth day as a traditional practice in some household, particularly those in which the mother and baby were secluded after birth. Study indicated that oil massage is an important practice in the daily care of the vast majority of neonates and infants in Bangladesh. In Bangladesh alone, extrapolation of our data would suggest that more than three million neonates were treated topically on a routine basis with mustard oil each

year. Oil massage was an important traditional domiciliary practice used annually on more than three million newborns in Bangladesh. It was important to further understand the impact of the practice on new-born and infant health. Moreover, further research was needed to optimize the beneficial effects while minimizing potential risks of this traditional practice, including potential compromise of skin barrier structure and function.

**227. Hafez MA; Anayet-ullah M; Begum HA; Alam ATMM; Haque MA. Extent of utilization and factors influencing antenatal care in rural Rajshahi. *JOPSOM*. 1999; 18(1): 1-6.**

The objective of the study was to find the extent of utilization of antenatal care (ANC) and identify the factors influencing utilization. The descriptive cross-sectional methods were conducted applying one-stage stratified cluster sampling method for data collection. The study was conducted all the 9 rural Thanas of Rajshahi district. Data were collected by face to face interview using a pre-tested structured interview schedule. The result of the study showed that about 30.5% pregnant women had antenatal checkup and 81.3% received TT before delivery. At about seventy (69.5%) percent did not have any antenatal check up, the reason stated mostly being 'no complication' and 'not mandatory' to have antenatal check up. Attempts were made to identify the factors influencing utilization of ANC. Important factors were freedom of decision-making, perception about the need for ANC and income. Thus there was a scope for improving utilization of ANC, especially through improvement of perception about the health. The study indicated that motivation also needed for the concerned persons. Distance of health facilities was associated with acceptance of ANC. So, increasing awareness and availability of modern health facilities were found to have significant influence on health seeking behavior and pregnancy outcome.

**228. Haque KMG; Rahman M. An Unusual case of ABO-Haemolytic disease of the newborn. *BMRC Bulletin*. 2000; 26(2): 61-64.**

The article was written based on a case report collected from national Professor Dr. MR Khan. This report recorded an unusual case of ABO-Hemolytic disease of the newborn. Hemolytic disease of the newborn (HDN) was a clinical condition in which foetal red blood cells are destroyed by maternal antibodies directed against red cells antigens acquired from the father. These antibodies usually belong to the Rhesus (Rh) or ABO blood group systems. ABO-HDN was usually a sub-clinical condition and less severe than Rh-HDN. The placenta was relatively impermeable to naturally occurred IgM anti-A/anti-B antibodies. However immune anti-A and anti-B IgG type will cross the placenta and may thus cause ABO-HDN. ABO-HDN was the commonest in Group-O mothers having an infant. Occasionally it was seen in Group-O or A (A2) mothers of Group-B infants. The most severe disease was seen in immune anti-B rather than anti-A antibodies. There were at present no satisfactory methods to predict ABO-HDN in the antipartum period. The study reported here a case of ABO-HDN where mother who was B, Rh-positive; delivered a baby girl of AB, Rh-positive who developed severe hemolytic disease. The baby was the third child. According to medical record this was the first of this kind of severe ABO-HDN in Bangladesh and one of the rarest ABO-HDN cases in the world.

**229. Heissler K. Background paper on good practices and priorities to combat sexual abuse and exploitation of children in Bangladesh. Dhaka: M/O Women & Children Affairs & UNICEF, 2001**

The aim of the study was to identify major obstacles and challenges in combating commercial child sexual exploitation and generate suggestions for overcoming them. The report is based on existing materials from a literature review and interviews and discussions with key individuals working in the area of sexual abuse and exploitation of children undertaken from 1-30 June 2001. The study tells- there is dearth of awareness about the concept of child rights in Bangladesh and this extends throughout society. Children are not widely viewed as being 'holders' of rights, in particular, socially and economically disadvantaged children who are more at risk of sexual abuse and commercial sexual exploitation are often viewed by the community (including children), government, even NGOs, as objects of charity rather than as holder of rights. Less is known about the situation of sexually abused and exploited boys and the impact of their psychological well-being. While some studies have demonstrated the vulnerability of Rohingya refugees to trafficking and especially those living outside the camps, there is no information about ethnic and religious minorities living in different parts of Bangladesh, including the Chittagong Hill Tracts (CHT). Moreover, no information on the situation and vulnerability of the Biharis to child sexual abuse and exploitation was found. The sexually abused girl is at risk to be cast out of her family and it might only be a matter of time before she is again abused or exploited. Much more must be done to address the root cause of gender discrimination which puts girls at greater risk of sexual abuse and exploitation, early marriage and other forms of violence. Gender disaggregated research is highly required.

**230. Hoque FA; Islam MS; Hoque HW; Alam MN. Health educational intervention on adverse events following immunization among mothers of under-one year children in Rakhaine community. *JOPSOM*. 2005; 24(2): 43-48.**

The key objective of the study was to examine the level of knowledge on adverse events following immunization (AEFI) and to evaluate the knowledge after intervention on AEFI. It was an interventional study - pre and post test design. In this study the outcome of the educational intervention was obtained by comparing pre and post intervention on knowledge of the same group of mothers. This study was conducted among all mothers of under-1 children of Rakhaine community in Cox's Bazar municipality from March 2005 to June 2005. The size of the sample was 90 mothers. Data were collected by face to face interview with pre-tested semi-structured questionnaire both before and after health educational intervention program. A baseline survey was done to assess the knowledge of AEFI prior to this evaluation. On the basis of baseline survey an educational intervention program was conducted through group discussion using flip chart. The findings showed that none of the respondents had good knowledge regarding AEFI before health educational intervention, which was increased to 77.8% after intervention. The result was statistically significant ( $p < 0.001$ ). Before intervention only 65.6% mothers agreed to vaccinate their child after an adverse event in previous dose of vaccination, but after health education intervention 97.8% mothers agreed to vaccinate their child even after an adverse event during previous doses, which was statistically significant ( $p < 0.001$ ). Therefore it can be told that health education intervention program can improve the knowledge regarding AEFI and thereby can eliminate fear from it.

**231. Jamil K; Bhuiya A; Arifeen SE. Gender preference in health care for children in rural Bangladesh. In: *BDHS 1996-97 special analysis*. Dhaka: NIPORT/Measure DHS+, 2000:63-89.**

This paper set out to compliment the existing knowledge on gender bias in seeking health care for children using a nationally representative sample of Bangladesh. The indicators of child health care examined in this study were; whether treatment was sought from health facility or provider for symptoms of respiratory infections, use of oral dehydration therapy (ORT) for diarrhea, full vaccination coverage and vitamin-A supplementation. This study also reviewed the existing child health care programs in Bangladesh. Bi-variate analysis was used to investigate evidence of discrimination against girl children in seeking and curative health services in rural areas. The study used data from BDHS 1993-94 and 1996-97 that employed a two-stage probability sample design to select respondent. The findings showed that usually son gets preference in the family, and the greater discrimination against girls were found in those families who are under financial stress. The female child was belonging to discrimination in every aspect in the family even in treatment, education, etc. overall results indicated that the level of discrimination against girls in health care varied by types of health services. Sex differentials were most prominent in treatment for respiratory infection, followed by immunization coverage but rather small in vitamin A supplementation. It was observed that girls were less likely than boys to receive ORT treatment for Diarrhea in households that were not visited by fieldworkers. Even with free health care services, female children became neglected in the family. But the result showed that there was no gender preference in treatment of symptoms of ARI if the girl was the only female child in the family. The study findings indicated that mothers' social and economical autonomy promoted equal treatment of boys and girls in seeking health care. Thus the study recommended that households with a number of girl children need particular programmatic attention to ensure that all children have an equal opportunity of receiving health services. Finally to achieve the objectives of Bangladesh health program, the design of this program must take into consideration the disadvantaged position of female children.

**232. Kabir, R; Islam S. Report of findings from consultations with children on sexual abuse and exploitation. Dhaka: Ministry of Women and Children Affairs, 2002.**

The objectives of the consultations were to give children who have experienced or are vulnerable to sexual exploitation/abuse or trafficking an opportunity to express their views about the problem and the best ways of tackling it and develop a more clearly focused and effective NPA through in corporation of the children's views. The research team consisted of two persons; principal researcher (PR) and a Facilitator. A variety of methods were used to record the children's views" On paper in group work sessions by the children themselves, on flipcharts by way of summary of group discussions, in written notes, on audio cassette. In the survey the girls' group agreed that all girls are vulnerable sexual abuse. The 6-10 years age group was identified as being the most vulnerable, especially with close relatives, while 11-17 years old were considered to be vulnerable as a result of their romantic involvement with boys. The groups consulted on trafficking felt that village children were particularly vulnerable to trafficking rings, with girls being at more at risk than boys. Boys in the brother (and customers) sexually abuse the younger girls (under 10 years) who are too young to start sex work, while they themselves are abuse by older sex workers who have become used to regular sexual activity but no longer attract so many customers. Potential abuses identified by the children include- Close relatives, highly educated and rich people, influential people,

trusted people with whom parents leave their children, neighbors/local people, school/college teachers, madraassah teachers and private tutors, staff of various organizations, police, religious persons (genuine and fake), Shopkeepers and businessmen, factory owners, employers of domestic staff and their friends/relatives, household staff/drivers, adolescent boys with whom girls play games and sports, older boys correlation to younger boys), Suitors, people who assume disguises, traffickers adult women correlation to boys aged 14-18, people on the streets, foreign tourists, people who show of their wealth, people of bad character, street mastans and unemployed youth, terrorists, uneducated, low-class workers. The picture of sexual abuse and exploitation of children is so horrific and dark that a concerted effort is highly required to make their life colorful and vigorous.

**233. Kabir Y; Malik SC; Salim AFM. Effect of iron supplementation on malnourished children with diarrhoea and anemia. *Bangladesh Journal of Nutrition*. 1999; 12(1&2): 51– 56.**

The study was undertaken to evaluate the possible contribution of iron supplementation to diarrhoeal disease. Twenty-one cases of various types of diarrhoeal unit of Dhaka Shishu Hospital, Dhaka, from February-October, 1992 formed the subject of the present study. Children aged between 6 months and 5 years having diarrhoea with less than 60% NCHS (National Center for Health Statistics) weight-for-age (malnourished) were chosen. The children were given oral iron supplementation at a dose of 5 mg/kg body weight for 14 consecutive days. Iron was the most common cause of anaemia which predisposed infection including diarrhoeal attack in Bangladesh as well as in other parts of the world. But it was difficult to say to what extent iron deficiency was due to dietary lack as extensive need on the part of indirect on the general population during diarrhoeal diseases. No significant improvement in iron nutrition status was observed in the children, either in terms of hemoglobin and iron concentration, total iron binding capacity or transferring saturation. The data indicated that the treatment of anemia in children with diarrhea warrants a different kind of approach rather than oral administration. There supplementation for more than 14 days were apparently needed in cases of such extreme iron depletion. The study findings suggested that research should be needed to know the required time period of iron supplementation response based on hemoglobin level.

**234. Khanum PA; Islam A; Quaiyum MA; Millsap J. Use of obstetric care services in Bangladesh: does knowledge of husband matter? Dhaka: ICDDR,B, 2002. (ICDDR,B working paper;153)**

The objectives of the study were to (a) ascertain the knowledge of husband on signs of obstetric complications, (b) to examine the association between the knowledge of husbands on obstetric complications, (c) identify the determining factors in using services of trained care provider, (d) identify the factors associated with the knowledge of husbands on obstetric complications. The cross sectional study was conducted in four rural upazilas of Bangladesh. The respondents were selected from the sample registration system. A total of 7218 husbands whose wives had at least one pregnancy outcome within the last five years preceding the interviews conducted. The findings showed that the majority (77%) of the husbands were aware of at least one symptom of complication relating to pregnancy and childbirth. Ninety percent of the respondents were aware of Upazila health complex and 20% mentioned district hospital was as health facilities for the management of complications. Twelve percent reported that their wives encountered one or more than one complications. Forty-seven percent of them



sought care from the medically trained providers for management of these complications. Majority consulted the village practitioners for their wives but the practitioners had no professional training. Husband themselves were the decision-makers very few took joint-decision for obstetric care service. It was concluded that the role of husbands in the use of obstetric care services by their wives is an important area of concern. For the improvement of maternal health, an intervention targeted to males, particularly husbands, to get their support and for their involvement in the decision-making process for use of obstetric care services by their wives was, thus require in the socio-cultural context of Bangladesh. It was also equally important to empower women to take decision by themselves.

**235. Koenig MA; Bishai D; Khan MA. Health interventions and health equity: the example of measles vaccination in Bangladesh. *Population and Development Review*. 2001; 27(2): 283-302.**

This article explored the potential direct role of health interventions in contributing to greater health equity. The authors examine the impact of a measles vaccination program - an intervention that had been shown to be highly efficacious in improving child survival-on gender and socio-economic differentials in childhood mortality. The data come from the Matlab study was of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). Since 1966, the ICDDR,B had maintained a system of continuous surveillance of vital events in Matlab. The demographic data collected from this system were unique among developing countries, in-terms of both the size of population under surveillance and the duration of surveillance. The strong effect of measles vaccination on reduction in childhood mortality risks was evident. Differences in cumulative mortality risks were statistically significant for both sexes. The importance of gender itself was also evident, with female children experiencing substantially higher mortality risks relative to male children and greater absolute reductions in mortality risks with vaccination. The interaction effect for gender/vaccination status did not attain statistical significance. Findings provide the little support for the hypothesized mechanism of replacement mortality during early child hood and at least with respect to measles vaccination. The results of this study underscored the need for developing special strategies and targeted approaches for reaching the most disadvantaged children. Findings also provided a strong rationale for the large number of governmental and voluntary agencies concerned with issues of economic and social equity to become more directly and actively engaged in programs such as measles vaccination.

**236. Majumder SMKA; Ibrahim MF; Huda QKKMN; Bhattacharjee N; Amin MN. Recurrent respiratory papillomatosis: a study of 24 cases. *BMRC Bulletin*. 1999; 25(2): 46-50.**

The objective of this paper was to evaluate the results of treatment given in 3 tertiary level hospitals of Bangladesh during 1991-1995 by modern anesthesia, endoscope and excision of papilomas by cupped laryngeal biopsy forceps. Patients treated in ENT departments of IPGMR (Presently, Bangabandhu Sheikh Mujib Medical University) (1991). Dhaka Medical College Hospital (1992 to 1993) and Mymensingh Medical College (1995) were included in the study. Both new patients and patients with recurrence were included. The case history, general examination of head and neck, ENT examinations, a lateral soft tissue x-ray of neck, and x-ray chest PA view were done. Twenty-four cases of recurrent respiratory papillomatosis (RRP) in children were treated by surgical removal with cup forceps and followed up for variable periods between 1990 and 1995. Most of the patients required multiple operations due

to recurrence. Removed tissue was histopathologically examined. Frequency of operations varied from 1 time to 8 times excluding tracheotomy. Twenty-four patients had total 73 operations of direct laryngoscope and 18 tracheotomies. Out of total 24 patients 7 patients had surgery for once, 5 patients had thrice, 3 patients for five times, 3 patients for 6 times and 1 patient had 8 times. Three complications were noted, laryngeal web formation in 4 cases, vocal cord scarring in 2 cases and tracheostomal recurrence in 2 cases. No death or other operative complication was noted. Four patients had glottis web formation. The findings suggested that recurrence of RRP was very common & needs multiple session of surgery. For children with persistent and progressive voice change/cry, the necessity of precise & comprehensive endoscope examination of the upper aerodigestive tract under general anesthesia was emphasized.

**237. Mullick MSI. Somatoform disorders in children and adolescents. *BMRC Bulletin*. 2002; 28 (3): 112-122.**

The study was designed to delineate the pattern of presenting features and to find out associated abnormal psychological situations and disabilities. The study was carried out at a private child and adolescent consultation centre in Dhaka city during January to December, 2001. A sample of 112 child and adolescent case of somatoform disorders were studied. Out of 112 cases, 52 were boys, 60 girls of them 59 were children and 53 adolescents. The study discovered that polysymptomatic presentation was commoner (92%) than monosymptomatic presentation (85). Pain was the most prevalent symptom children showed significantly higher rates of abdominal complaints and adolescents showed higher rates of headaches. All cases reported an average of 14-21 somatic symptoms. Boys and girls reported an average of 13.75 and 14.61 somatic symptoms respectively whereas children reported an average of 12.66 somatic symptoms and adolescents reported an average of 15.94 somatic symptoms. The difference was significant. Differences were also found in the diagnostic categories of somatoform disorders. Girls reported higher rates of somatization disorder and persistent somatoform pain than that of boys. Children reported higher rates of undifferentiated somatoform disorders and somatoform autonomic dysfunction. In contrast adolescents reported higher rates of somatization disorder. Abnormal psychological situations were found to be associated with predisposition, onset and occurrence of the disorders in majority of the cases and most common was parental overprotection. Better understanding of these disorders could promote early diagnoses and timely treatments and improve the quality of life by preventing negative consequences.

**238. Paul BK; Rumsey DJ. Utilization of health facilities and trained birth attendants for childbirth in rural Bangladesh: an empirical study. *Social Science & Medicine*. 2002; 54: 1755-1765.**

The objective of this paper was to identify the determinants of use of medical center and TTBA for delivery purpose in a rural area of Bangladesh. To conduct this study a field survey, using individual interviews was considered an appropriate source of data for the present study. In total 2334 couples in the selected villages that experienced childbirth during the two year period from July 1, 1995 to June 30, 1997 comprised the study population. A prospective survey design was more appropriate for this objective than the retrospective design of the present study. The questionnaire was pre-tested prior to execution of the actual study and some modifications were incorporated as a result. During the study period, there were 2334 live births in the study villages. Several multiple births occurred, but each such

instance was considered a single birth experience for the purpose of this study. The number of stillbirths was very low and for this reason they were not included. Only 98 (4.2%) of the 2334 births occurred at hospitals or clinics; while the remainder took place at home. All births occurring at health facilities were supervised by trained nurses and/or medical doctors. Another 7.2% deliveries were attended by TTBAAs at homes. The majority of births in rural Bangladesh were carried out in unhygienic conditions by relatives and traditional birth attendants (TBAs). This results in a high incidence of maternal and infant mortality that could be reduced if childbirth were to occur in health centers or under the supervision of trained TBAs (TTABs). This paper examined factors associated with utilization of modern health resources for childbirth in 39 villages of Bangladesh. The data indicated that slightly over 11% of the deliveries were performed by trained personnel with the rest attended by TBAs. Multivariate analysis clearly showed that delivery complications was the most significant factor determining the use of modern health care resources for childbirth, followed by parental education, and prenatal care. Since delivery complications were the main reasons for utilization of the health facilities and TTBAAs for delivery, awareness programs must be focused on the danger signs of pregnancy and making modern delivery services available in existing service centres. This was also needed for providing additional training to update and enhance the skills of TTBAAs.

**239. Rahman MM; Shahidullah M. Risk factors for acute respiratory infections among the slum infants of Dhaka City. *BMRC Bulletin*, 2001; 27(2): 55-62.**

The present study was carried out to assess the prevalence of acute respiratory infections (ARIs) among the slum infants and also to identify the factors responsible for it. A cross sectional study was conducted in five slums of Dhaka city. The study population was all adult women of reproductive age having an infant aged less than one year. A total of 1008 mothers were interviewed. Among them 927 had children aged 0-12 month. Mother with live infants (927) was asked if their children had any disease during the two weeks prior to the interview. The result showed that, respiratory infections were the highest among the prevalent diseases (ARI 72%, diarrhoeal disease 28%, measles 4%, and others 4%). So, an emphasis was given in this regard. Out of 228 ARI cases, percentage of mild (78%) and severe ARI (11%) were present in children aged less than 6 months, whereas moderate ARI (23%) was higher in 6 months and above age groups. The variation was statistically significant between the two age groups ( $p < 0.05$ ). But there was no significant difference in ARI by sex. In logistic analysis, maternal age below 20 years, working mothers, low housing and socio-economic index, no household possession, no access to piped water and infant's aged above 6 months appeared to be significant predictors of ARIs. The study provides important information for policy makers regarding the prevention of ARI among the children of the slum dwellers. There should be a need based and coordinated diseases control programme with effective referral system.

**240. Rahman MM; Shahidullah M; Azad AK. Factors affecting the compliance of immunization among the slum dwellers of Dhaka city. *JOPSOM*. 2002; 21(1):8-15.**

The study attempted to assess the immunization status of infants and also to identify the factors influencing the compliance of immunization. This study was conducted in five selected slums of Dhaka city. The study population was adult women of reproductive age having an infant aged less than one year. The information was collected through face to face interview and immunization card and history given by the mothers. The study was conducted under the guidance and supervision of the department of Population Dynamics, National Institute of

Preventive and Social Medicine (NIPSOM), Dhaka in 1997. Of 1008 mothers were interviewed. Results of the analysis showed that among the 1008 mothers, 927 had children aged 0-12 months. Only 7% of the infants were vaccinated DPT<sub>1</sub>/OPV<sub>1</sub> at the age of 2 months. The BCG status was 12 percent at 0-2 months. Measles vaccination status was very unsatisfactory. Only 6% had age appropriate immunization of measles at 8-10 months. Almost 52% did not follow the immunization schedule as per instruction of vaccinator or health worker as noted on the immunization card. Non-compliance was 2.63 times higher in low socio-economic index group and 2.58 times in infant's age above 6 months (p<0.001). The study identified that there was low coverage of age appropriate immunization among the infants. Non-compliance was also high in the slums. The study results suggested that special strategies should be designed to promote the use of Expanded

**241. Setarunnahar; Hossain A; Khatun R; Parveen S; Ahmad Z; Haleem A; Alam SKA. Serological response to immunization with tetanus toxoid. *BMRC Bulletin*. 2000; 26 (1): 15-22.**

The objective of the study was to observe the serological response to immunization with tetanus toxoid. It also attempted to justify the effectiveness of two batches of tetanus toxoid vaccine prepared at the Institute of Public Health (IPH) and one batch of imported vaccine. This was an experimental study. A total of two hundred women were immunized with tetanus toxoid vaccine. Each of hundred women was immunized by IPH and imported vaccine. Two human doses were given in one-month interval. Blood samples from all the study subjects were collected on the day of 1 dose and one month after second dose. Both the pre-immunized sera and the sera after vaccination were tested to determine the antibody titre against tetanus toxoid by the haemagglutination method. The pre-immunized sera showed the presence of protective antibody in 50 (25%) subjects who had the history of previous immunization. Including these initial antitoxin positive cases the seroconversion found among 95% and 96% of the study population respectively after immunization after IPH and imported toxoid, which were 93.05% and 94.87% when these 50 subjects were excluded. No significant difference (p=1.0) was observed between the immunity of the subjects after receiving IPH and imported vaccine. The study suggests that all the research data would be utilized by the EPI of Bangladesh and by the National Control Authority for vaccine of Bangladesh,

**242. Syed U; Rahman A; Sen PD. Outcomes and costs of birthing care by trained and untrained attendants. Dhaka: Institute of Health Economics, 2001.**

The Overall objective of the study was to investigate the cost and outcomes of deliveries by trained and untrained attendants during and after deliveries. The specific objectives were: i) to compare the nature and frequency of intrapartum, postpartum, and neonatal morbidities for deliveries attended by trained and untrained attendants; ii) to estimate the household costs for deliveries and management of complications by trained and untrained attendants. The study followed a cross sectional design to describe the measures taken for delivery and the outcomes faced during and within 7 days of delivery. The sample size of the study was 259. Over the period of data collection it was interviewed actually 950 mothers who delivered within the last three months. The findings of the study revealed that by percent age, the respondents from Manikganj and Narayanganj were about similar (mean age=25 and 23 years respectively), and highest proportion of the respondents from both the areas belonged to the age group 20-24. The mean age at first marriage was the same (17 years). About two-thirds (64.0%) of the birth attendants were untrained and over one-third (36.0%) were trained. Highest proportions of the

respondents who were delivered by the untrained TBA (39.8%), trained TBA (30.8%), FWV (31.7%), and female relative (31.3%) belonged to the income group of Tk. 2000-3000. The average amount of fees of the delivery attendants was ranged from Tk.208.85 to 786.95. The highest proportion of respondents (40.0%) suffered from lower abdominal pain, followed by fever and excess bleeding. Of the babies born to the sample women during the period under study, 52.0% were male and 48.0% female. The study suggested that future studies may be conducted by increasing area representation and using a better standardized instrument that takes into account proper classification of delivery attendants of care providers.

## 2.5 UTILIZATION OF MCH-FP SERVICES

**243. Ahmad F; Begum N; Islam F; Kabir A; Rahman F; Rahman A; Sikder B; Hassan Q; Chowdhury S; Begum K. Magnitude and risk factors of IUGR in a tertiary hospital. *Bangladesh J Obstet. Gynaecol.* 2004; 19(1): 11-16.**

The study was conducted to estimate the magnitude of IUGR and determinants of its risk factors in the pregnant women of third trimester of pregnancy. The study used a cross sectional methodology to conduct at the Department of Radiology and Imaging of the Institute of Child and Mothers Health (ICMH), Dhaka, performed between July 2000 and March, 2001. Five hundred and twenty-two women of third trimester of pregnancy with singleton pregnancy and life fetus were enrolled in the study and ultrasonography was done. Mean age of the women was 23.4 years. Most of them were educated (10 years education 55.3 %) with good socioeconomic background (annual income of Tk 60,000–3,00,000). Ninety percent of the women were housewives. Out of 522, total number of IUGR was found in 160 (30.7 %) cases. Among them 118 (73.8%) were symmetric and 42 (16.2%) were asymmetric IUGR. Some factors were found significant in developing IUGR. Mothers having weight < 45 Kg found 3.57 times, height < 145 CM 1.9 times and moderate and severe physical effort during pregnancy were 1.8 times vulnerable to development IUGR than mothers having weight < 45kg, height >145 cm and no exposure to moderate and severe physical effort respectively. Low maternal weight, height and moderate to severe physical effort during pregnancy have a great influence in developing IUGR mothers need special care to increase the nutritional status from early childhood. During pregnancy mothers should be given rest to avoid hardship physical activity. Future research should be taken to look into the causes of symmetric IUGR.

**244. Akhter HH; Desai SN; Rashid M; Luna FJ. Report on assessing the effectiveness of the intensive follow-up forum (IFF) component of the CCDB Traditional Birth Attendant (TBA) training program. Dhaka: CCDB & BIRPERHT, 2000.**

The general objectives were to assess the overall effectiveness of trained Traditional Birth Attendants (TTBA) in bringing positive changes in maternal and child health care through the Intensive Follow-up Forum (IFF) program and document TTBA's contributions and roles. To assess the effectiveness bearing the IFF monitoring data, two focus groups and various interviews with key personnel were conducted in the field. This evaluation used both quantitative and qualitative methods of data collection and analysis. Analysis of the IFF reflected that there TTBA made positive contributions to the pregnancy related in terms of screening for potentially high-risk pregnancies by taking a past pregnancy/obstetric history, creating awareness, providing support and assistance to government trained TBAs and other TBAs, immunization coverage, and ANC visits to health center. During delivery TTBA's attended births of 87.3% and followed safety tips for safer birth practices (for remaining 12% the family members themselves decided to deliver). When certain process indicators were compared with national survey findings it showed that for most process indicators measured in the program, the outcomes were more favorable in IFF area than the national figures. The IFF monitoring program has been depicted as an excellent system to use as a backbone for surveillance of pregnancy and TTBA practices some modification in the program have been suggested to effectively identify gaps in practices and knowledge among TTBA's. Suggested changes in IFF program are a) create a surveillance system that can identify missed opportunities, harmful practices, adverse outcomes both for the mother and the newborn, b) create a community-fostered committee that will be responsible for investigating the death of

a mother or baby in the neonatal period. The purpose of this committee would be to identify how deaths could have been prevented and c) clarify the terms used in the monitoring forms. The study suggested further study should be taken for promote the present situation.

**245. Al-Sabir A; Abdullah AKM; Bhadra SK. Community participation in the Bangladesh health and family planning program: dissemination activities and lessons learned. Dhaka: NIPORT, 2001.**

The survey on community participation has always been recognized as one of the most important preconditions of success for the health and family planning program in Bangladesh. To increase community participation in this context these step should be taken, a study was designed to review the contribution of community participation in the health and family planning program managers and community leaders. Twelve seminars for program managers in six administrative divisions and five upazila seminars community leaders were organized and identify the mechanism how to: increase the involvement of local level policy makers and stakeholders, increase demand for, access to, and the quality of family planning services, improve policy environment and increase local resources in order to make Bangladesh Health and Family Planning programs sustainable and self-reliant. The paper utilizes information from three different types of sources: (i) existing data sources such as DHS, CPS and surveys conducted by other conducted by other organizations, (ii) Focus Group Discussions (FGDs) and (iii) observations of selected successful programs directly or indirectly. The FGDs were conducted in both GOB and NGOs areas. The stakeholders chosen for this study are (i) client, (ii) community leaders, (ii) service providers and upazila officials. The discussions were conducted in the low, medium and high performing areas in GOB were selected on the basis of CAR obtained from MIS unit of the FP directorate. The level of CAR less than 45% is low, 45-60% in medium performing and greater than 60% is high performing according to CAR. It is recommended that a cross-section of community leaders including elected representatives e.g. Union Parishad Chairman, Members, local 'Matabars' teachers, Imams etc. should be appraised about the program benefits in detail and be involved. Vacant posts be filled, skilled workers- especially educated female workers be hired and trained so as to reach female members of the community. Guidelines are developed to ensure appropriate accountability of the program mangers and workers. Wider publicity about the benefits of the program can be carried out.

**246. Al-Sabir A; Alam MA; Hossain SMI; Rob U; Khan ME. Integration of reproductive health services for men in Health and Family Welfare Centers in Bangladesh. Dhaka: Population Council & NIPORT, 2004.**

The Objective of the study was to integrate male reproductive health services within the existing government female-focused health care delivery system. It was required two years time to implement this project. It used a quasi-experimental non-equivalent control group design, with eight HFWCs as intervention sites and four HFWCS as control sites. Service provider interviews, focus group discussions, inventory surveys, male and female exit client interviews, and client registers were used to collect the data. Interventions included training regarding reproductive tract infections (RTIs) and sexually transmitted infections (STIs) for services providers, awareness raising about male RTIs and STIs, group discussions, behavior change communication (BCC) materials, and RTI and STI services using the syndromic approach the interventions resulted in male clients (ages 15 years and above) in the experimental clinics from 131 clients to 337 clients per clinic per month. Analysis revealed,

however, that nearly all of the male clients seeking services from HFWCs come from the treatment of general health problems. Only a small member of male RTI and STI clients increased from monthly average of less than one client per clinic prior to the intervention to more than five during the intervention period. There are also an unexpected substantial rise in the number of female clients (15 years and above) including those seeking treatment for RTIs and STIs. The rise in the number of both male and female clients increased use of the HFWC and helped reduce the cost of treating each client. The most common symptom of RTIs and STIs for which men sought services was where discharge. Finally, the rise in the total number of male and female clients HFWCs will lead to more effective use of resolve with increased use of health facilities and decreased cost of treatment per patient.

**247. Al-Sabir A; Abdullah AKM; Bhadra SK; Arifeen A. Factors related to effective use of population committees at different District, Upazila, Union and Ward levels. Dhaka: NIPORT, 2005.**

The study was intended to analyze the present functioning status of the population committees at district, upazila, union and ward levels; to identify factors hinder in implementing population committee activities and suggestions and means for effective use of population committees. The study obtained information from district, upazila and ward level committee members and they are mostly program managers, field personnel and formal and informal community leaders. A multistage probability sampling procedure was followed to elect relevant data. The results of the study were that the majority of health and family planning officials were aware about the population committees. But few of other stakeholders were aware about the population committee. One thing was clear from the study that the population committees, its function and role in health and family planning program were not transparent to all concerned. Neither the national nor the district authorities bother about whether the local level committees were at all functioning. There was no monitoring system. Most of the committees at different level were dysfunctional other than health and FP officials, the stakeholders involved in the different population committees of donor recognize population problems as a frequently discussed major social problem. They recognized education, social corruption/violence and communication/roads as the major frequently discussed social problems, although these were very much related with the population problems. Among meeting under the auspices of some committee involves some expenditure at least for entertainment for the members at different level but the present system did not provide any scope for such expenditure. Some tentative recommendations were considered to be useful. Few committees at different level should be identified, steps should be developed to follow up the meeting minutes and reports of the functioning of the local level committees, efforts should be needed to educate all the stake holders to get support from district and upazila administration for making function able of the committees.

**248. Al-Sabir A; Bhadra SK; Abdullah AKM; Arifeen A. Factors responsible for low family planning performance in Bangladesh. Dhaka: NIPORT, 2005.**

The purpose of this study was to identify low family planning performing districts and to seek an explanation for the low level of use of contraception in different districts. The study used two important steps. Firstly low family planning performing districts were identified on the basis of the estimated contraceptive prevalence rate (CPR) of the district using 2001. Secondly, relative influences of different socio demographic, community and pragmatic factors in family planning performance were assessed using 1999-2000 BDHS and SPA data.



The study identified low family planning performing districts using regression method. Exploratory analysis indicated that nearly all districts in Sylhet and Chittagong divisions were characterized by lower than average level of contraception. Some districts of Dhaka and Barisal are characterized in the same condition. In terms of individual characteristics, no appreciable differences among different FP performing districts were observed. However some differences were observed in terms of wealth index, community literacy level, availability of electricity, mobility and earning status of women. In low family planning districts where support for family planning is weak it is often more difficult to have field worker visitation and family planning message exposure. The factors that distinguish low family planning performing districts from moderate and high performing districts most clearly are programmatic and cultural development nature. The less acceptability to family planning in low performing districts is probably related to the greater cultural development. Moreover, less acceptability of family planning methods are also related to the sex composition of living children of women. Preferences for boys are quite prominent. The lower contraceptive use in low performing districts is likely to be associated with Family Planning program weakness. The study recommends that efforts are needed to address the low performing districts for increasing the use of contraception, strong activities to reduce sex preference are important which can be diffused through various programmatic activities; the programmatic weakness in low performing districts should be minimized or removed. It should be assured that quality contraceptive advice reaches women in all social and geographical groups.

**249. Anonymous. Evaluation of the youth project. Dhaka: FPAB, 2000.**

The aim of this study was to evaluate and examine the effectiveness of youth project routinely in changing the attitude of youth on personal, social, sexual and reproductive health environment and cultural affairs leading to responsible parenthood. The study covered the youth project areas of four Districts namely Jamalpur, Chittagong, Jessore and Rangpur. Twelve clubs (3 from each district) and 400 youths (100 from each district) were selected randomly for data collections. Four different sets of data collection instrument were developed. Data were collected from general youth both male and female, guardians, service providers, and youth leaders. Interviews and FGDs were conducted to collect data. Among the respondents 7% youth were married and around two-fifths had received dowry at their marriage. All the married youth had knowledge on FP methods and 72% were currently using any of them. Oral pill and condom were widely used method 90% youths participated in group meetings that discussed about FP (29%), RH (26%), demerits of early marriage (26%), cleanliness (25%), sexually transmitted diseases (27%), maternal and child health care (14%), nutrition (12%), and community development (9%). Fifty-nine percent of female adolescents and youths reported of having knowledge about RTI. All most all knew about menstruation management. The youth had fairly knowledge on STDs and aware about its causes. In the study 61% of respondents mentioned their participation in community developmental activities like tree plantation, sanitation etc. Forty-two percent were using slab latrine and 95% of youth and adolescents were aware of harmful effects of drug and smoking. The study recommended that training for youth should be increased, more awareness materials on STDs/AIDs be developed, should have provision of cost free treatments and credit under the project.

**250. Anonymous. Evaluation of UVAPA project. Dhaka: FPAB, 2001.**

This study was carried out to evaluate the UVAPA project for providing necessary feedback and guideline for project management and development. This evaluation study on UVAPA project was conducted in 2001 at four locations Patuakhali, Jamalpur, Rangpur and Pabna. A total of 600 married women (150 from each location) of reproductive ages were selected systematic randomly for interview. The project was linked to FPAB Bangladesh's strategy for providing quality FP/MCH services, especially to the young and low parity couples and extent services in the undeserved areas of the country through CBD, clinic and other approach. The aim of the project was to involve registered/non-registered local level voluntary agencies and their members in promoting RH services including FP by utilizing their local capability. Now the project was being implemented in 20-grater district through 205 group leaders and 820 volunteers. The findings of the study revealed that 96% were engaged in household activities. It was evident from the data that the mean age of 1<sup>st</sup> marriage was 15.4 years while at first birth was 17.3. They had average 2.8 live births and 2.4 living children. Their knowledge about FP methods was almost universal. About ninety-three percent knew three or more methods of contraception while 65.0 % were using at least one contraception methods. Oral pill (49.3%) was found to be popular and mostly used method followed by injection (27.6%), Norplant (9.6%) condom (4.6%) and tubectomy (3.1%). FPAB alone contributed 73.3% of all sources of contraceptives. More than 82.0 percent of current non-users expressed their intention for future practice of FP methods. Only 3.8 percent of interviewed women were pregnant, 12.02 % had the experience of abortions. The knowledge of respondents about RTIs seemed poor. Regarding the BCC activities, only 12.0% of respondents had some knowledge about RTIs. Only below 1.0% of respondents received any booklet and leaflet on RTI and 3.2% had seen films on this subject. Thus the study recommended that steps should be taken by the authority to reduce early marriage in the project area. Measures should be taken for effective side-effect management and quality of services and training on RTI and record keeping under ESP for group leader and volunteers should be arranged immediately.

**251. Anonymous. Local level planning for better quality and increased utilization of public health services at Thana level and below:the TFIP model. Dhaka: TFIPP, 2000. (Working paper; no.14)**

The objectives of this study were to document and disseminate the lessons learned by TFIPP in local level planning and decentralization at Thana and below levels and to analyze whether local level planning thus conceived had the potential to increased quality of services and their utilization and coverage. In this study, local level planning modality applied by TFIPP including team approach consisted the team of District Managers (DMs), Thana Managers (TMs), Union team, Thana Supervisors (TSs), Thana Project Committee (TPC), functional improvement action plan FIAP, U-FIAP, District action plan DAP. For documentation and data gathering different formats such on financial return, the MIS and survey was introduced. The combination of insights in expenditure patterns, observed changes at facilities, development in utilization of services, client perceptions with respect to quality, and views with respect to the planning modality provides sufficient background and information to assess whether the TFIPP model for LLP had been effective. An inventory and study of more than 200 local level plans (FIAPs) revealed that indeed mainly local needs had been addressed. The local level planning approach, however, in perception of TFIPP project management had been the most important contributor in accomplishing the positive results regarding increased utilization and coverage. However, it might be considered as a crucial tool

towards the realization of HPSP and ESP objectives. In the TFIPP experience it had been proven that LLP contributed to improve quality of services, increased utilization and service coverage. It recognized and appreciated service providers at all levels, as well as the community they serve. TFIPP formulated a proposal to institutionalize the different experiment in a collaboration modality with the MOH&FW and ICDDR,B, or alternatively with the MOH&FW on its own, otherwise this kind of opportunity might be missed in implementing of HPSP.

**252. Anonymous. Review of availability and use of Emergency Obstetric Care (EMOC) services in Bangladesh. Dhaka: ACPR, 2001.**

The purpose of the present study was to undertake a quantitative and limited qualitative review of the Emergency obstetric care services in Bangladesh. The review was planned to provide specific estimates for EMOC process indicators at national and sub-national levels. The review study was predominantly quantitative in nature. Data on services provided and patients served at different facilities covered in the survey were collected through survey of record and registers. For the survey, the obstetric units of the 13 GOB medical college hospitals, all 59 district Hospitals, 62 MCWS (55 district level+7 others), 40 UHCS designed for comprehensive EMOC+ One UHC from each district (64), giving a total of 104 UHCS and all probable private/ NGO clinics providing Basic and Comprehensive EMOC services were included in the study. The findings revealed- all 13 GOB medical college hospitals, 59.32 percent DHS, 27.42 MCWCS, about 3.0 percent of sampled UHCS (3 out of 104) were found providing comprehensive services. GOB EMOC facilities satisfy only 27 percent of the minimum need of comprehensive and about 15 percent of the minimum requirement of Basic EMOC facilities. Every 1856000 population there is now one comprehensive as cored to one for 3938000 population in 1994. The number of deliveries at GOB facilities constitutes approximately 5.33 percent of the total estimated annual births, a proportion which is more than two times higher than the 1994 figure (2.2 percent). Almost 81 percent of the women who sought treatment at EMOC facilities came with major obstetric complications such as septic/non-septic abortion, obstructed or prolonged labor, eclampsia and retained placenta. Presently Caesarean sections at GOB facilities account for about 1.00 percent of all births compared to 0.70 percent in 1994. Major causes of maternal deaths were eclampsia/ pre-eclampsia, PPH, APH, Obstructed/prolonged labour, rupture, uterus, septic abortion and post partum/puerperal sepsis. All the DHs, MCWCs and UHCs should be made fully functional for EMOC services. Emphasis should be given to make comprehensive facilities available as close as to the masses as possible. A uniform system of record keeping and better monitoring of GOB facilities designed for EMOC services are highly necessary.

**253. Anonymous. 2005 Rural NGO service delivery program (NSDP) evaluation survey. Dhaka & Calvertan: ACPR & Measure Evaluation, 2006.**

The main objective of the 2005 survey was to measure changes in the USAID performance indicators since the mid project evaluation in 2003. These were (NSDP result frame work performance indicators) designed to measure changes both in health outcomes and five intermediate behavior and knowledge related areas. This survey used a representative sample of households in program. In addition, a sample was drawn from rural non-program areas. The sample size for the survey was 7652 women from the NSDP project areas and 4418 women from non-NSDP areas. The important points emerging from this report include- the increase of modern contraception prevalence in NSDP areas (4.2 percentage points) during 2003-2005

was nearly twice that in non-NSDP areas. A slight change in contraceptive method mix occurred. The pill, injectables and female sterilization remained the most important source of modern contraception in rural NSDP areas. NSDP NGOs remained the principal source of modern contraceptive supply, with about 46.2% of the market. This represented a slight improvement over the 2003 figure of 45.5% NSDP providers were also the most important source of modern contraceptives for the poorest consumers, with 49.8% of that market. Vaccination rates for children have increased. More than half of all children were fully vaccinated and dropout rates for several vaccine series remained high, rates for the poorest children were lower than for the overall sample. Market shares for NSDP providers generally continued to increase, though at a slower pace than between 1998 and 2001 or 2001 and 2003. Market share for child vaccinations fell to around 70% in project areas. Modern contraceptive source are to be materialized on a larger scale in rural areas. NSDP providers' share is expected more in treatment of childhood illness.

**254. Anonymous. 2003 BPHC evaluation survey. Dhaka: ACPR & Measure Evaluation, 2005.**

The study was designed to assess the performance of BPHC NGOs in providing ESP services. It was intended to capture USAID performance indicators at the time the survey was designed and by these measures to compare the performance of the BPHC project with that of the rural NSDP project. Using a representative sample of households, the survey was conducted in rural Bangladesh served by the BPHC-supported NGOs. In all, 5887 women from BPHC project areas were interviewed. This evaluation survey revealed that socioeconomic status (SES) was generally positively associated with contraceptive use, antenatal care (ANC) use, and iron supplementation during pregnancy, as well as a variety of indicators of health service utilization. BPHC clinics were more commonly used by poorer women. Socio-economic status was negatively associated with early childhood mortality and home births. Awareness of modern family planning methods was almost universal. Overall, 56.4% of currently married women in BPHC areas were using contraception and 47.9% overall were using modern contraception. Among modern methods, the pill was the most popular (24.6%), followed by injections (14.9%), female sterilization (3.9%) and condoms (2.6%). Only a small proportion (8.1%) used traditional methods (most of them relied on periodic abstinence). Only 51.7% in the poorest quintile made an antenatal care visit as compared with 79.8% in the richest quintile. About 94% of respondents in BPHC areas were aware of temporary satellite clinics within the communities where they lived. About two-thirds of women across study areas were aware of tetanus as an important complication during pregnancy, though knowledge of other complications was quite low.

**255. Anonymous. Report on anaemia prevalence survey of urban Bangladesh and rural Chittagong Hill Tracts 2003. Dhaka: UNICEF & BBS, 2004.**

The main objective of the study were to estimate the prevalence of anaemia among preschool children aged 6-59 months, adolescent boys and girls aged 13-19 months, adolescent boys and girls aged 13-19 years and pregnant, lactating and non pregnant non-lactating women of reproductive age (5-44 years) and to examine the associations of anaemia in the different age and sex groups with socio-economic, demographic and individual characteristics in urban Bangladesh and in rural areas of the CHT. The survey was conducted in the urban slum and non-slum areas of Bangladesh and in rural areas of the 3 districts of the CHT in March to May 2003. The urban areas included 15 non-slum and 15 slum clusters, all selected randomly, from

the cities and towns of Dhaka, Chittagong, Rajshahi and Khulna divisions. Similarly, 15 clusters were randomly selected from the rural areas of the CHT. The survey showed that the prevalence of anaemia in urban areas of Bangladesh was highest in children aged 6-59 months (56%), followed by pregnant women (41%), lactating women (36%), NPNL women (33%), adolescent girls (29%) and adolescent boys (17%). The prevalence of severe anaemia was found to be rather low, in both slum and non-slum areas, except among children aged 6-59 months (2-3%). The prevalence of anaemia was slightly higher in boys aged 6-59 months (58%) than girls of the same age (53%). The anaemia prevalence was higher in slum areas than non-slum areas, with the greatest difference of 6-7% points in children aged 6-59 months and adolescent girls. The prevalence of anaemia in preschool children in the CHT was extremely high in infants aged 6-11 months (90%), followed by children aged 12-13 months (75%) and declined with age. While there was no statistically significant difference between boys (65%) and girls (59%) in the overall prevalence for children aged 6-59 months the difference in prevalence of boys (85%) and girls (64%) aged 12-23 months was found to be statistically significant. Special programmes are needed for the CHT, particularly for its tribal population, among whom the situation is most alarming, special attention should be given to children aged less than 2 years. A behavioral communication change (BCC) campaign is needed to ensure. A national anaemia survey should be repeated within 3-5 years to measure progress towards the reduction of anaemia in the country.

**256. Anonymous. 2001 Rural service delivery partnership evaluation survey. Dhaka: ACPR & Measure Evaluation, 2003.**

The principal objectives of the study were to monitor changes in the USAID performance indicators since the baseline survey in 1998 and to provide data on individual behaviors and health outcomes and to link these data with characteristics of the service supply environment to conduct an evaluation of the impact of the RSDP program on the health of the project's catchment area population. The survey collected information from 9625 women in RSDP project areas and 3122 women in non RSDP areas about the use of essential service package (ESP) components at RSDP clinics and elsewhere. It also collected information on women's knowledge of health promotion behaviors, awareness of RSDP services and quality of treatment at RSDP clinics. This survey was technically assisted by measure evaluation project at the University of North Carolina at Chapel Hill. As observed in the survey- there are no significant socio-economic status differences among the population in RSDP areas and other rural areas of Bangladesh. Except for ANC and ORT use during diarrhoea, services utilization is not higher in RSDP areas compared to the non-project areas. RSDP's market share for several essential services is increasing. People increasingly choose RSDP as a source of services over the sources. RSDP does poorly in reaching children with pneumonias diarrhoea who need treatment. Very few such children are treated in RSDP clinics, preferring local pharmacies or traditional doctors instead. Equity of service use by rich and poor is generally higher in RSDP project areas than in non RSDP comparison areas. The gap between service use by richest and poorest is smaller in RSDP areas than in non project areas. The poor use RSDP services more than the rich do. RSDP generally serves a higher proportion of poor users than rich users. Wider customer satisfaction is required. Children with pneumonia and diarrhoea or with other diseases should be given further and wider access to the RSDP clinics to ensure that RSDP is a real social boon.

**257. Anonymous. National low birth weight survey of Bangladesh, 2003-2004: Dhaka: BBS, 2005.**

The National Low Birth (NSL) weight survey was conducted for the first time in Bangladesh to provide nationally representative data on the prevalence of LBW to assess the scale of the public health problem and to provide baseline data against which measure progress towards its alleviation. Adolescent girls and women who had missed at least two menstrual periods in 107 randomly selected rural and urban clusters were enrolled in the survey and followed up to delivery. Of the total 4,414 pregnancies identified, there were 3,843 live births, 76 abortion/miscarriage, 186 stillbirths and 331 women were lost to follow-up. A total of 3,085 birth weights (1,548 boys and 1,537 girls) were taken within 72 hours of the delivery and were included in the analysis of birth weight. Birth weight and length were taken and recorded by locally required women called resident Field Assistants. The findings of the National Low Birth weight survey, the first of its kind in Bangladesh, confirm that LBW (<2,500 g) is a major public health problem in Bangladesh. Less than 1% of infants were born with VLBW (<1,500 g). The prevalence of LBW varied geographically, with urban areas having a lower prevalence (29%) than rural areas (37%). There are many possible reasons why the LBW prevalence highest in rural areas, data from Bangladesh Demographic and Health Survey shows that the prevalence of maternal malnutrition, which is linked with LBW, is higher rural than urban area (BDHS, 2001). Because of the severity of the LBW problem in Bangladesh and its potential threat to the growth, health and survival of both children and adults, the prevention of LBW should be given immediate priority in the future. Integrated and complementary strategies are needed to address the major causes of LBW of Bangladesh. Special attention should be given to health and nutrition of adolescent women before their first pregnancy. An advocacy and behavioral communication campaign is needed to ensure that LBW prevention is given a high profile and accepted as important and necessary at all levels.

**258. Anonymous. Assess training need for supervision at different levels. Dhaka: NIPORT, 2006.**

The objective of the study was to assess training need of the Family Planning personnel for supportive supervision at different levels. The assessment conducted with a view to four specific objectives: assess the knowledge of program manager, service provider and worker about supervision with regards to their involvement evaluate the present supervisory responsibilities/activities performed by the program managers, service providers and workers; identify barriers in performing supervisory tasks at different level and places properly, nine categories of family planning program personnel were studied. The study has followed a cross sectional statistical design to obtain information from primary, secondary and tertiary sources. The primary sources include the sample population from field workers, service providers and program managers who have been identified through job analysis. The secondary and tertiary sources include reports, journals and service statistics related to supervision, which have been reviewed to develop basis for sampling and instruments for data collection. The research team has worked together with NIPORT for selection of samples and study areas and preparation of study instruments and reports. The editing and coding of the collected data is done in Gano Unnayan Sanghstha (GUS) by the research team and then enter into database of the computer. Necessary measures were taken at the data entry level to protect wrong entry or double entry. Finally has been done according to the objectives of the study for preparation of report where both the uni-variate and bi-variate tables are accomplished. The major coverage of data analysis are: Knowledge of program manager, service provider and worker about supervision

with regards to their involvement. Present supervisory responsibilities/activities performed by the program managers, service providers and workers, barriers in performing supervisory tasks at different level and places properly, types of training received associated to supervision, identify training needs related to provide supportive supervision. A formatted monitoring tool was used for recording the observed and service providers were also conducted to collect data. It was observed that the new record-keeping and reporting tools were being used, and fulfilled the record-keeping requirements at the union level and both the districts.

**259. Anonymous. Re-defining the role and standardization of work load of field workers to increase field workers visitation conducted by Center for Development Studies. Dhaka: NIPORT, 2006.**

The overall objectives of the study were to assess the constraints faced by the FWAs within a given time frame, In this study a cross sectional statistical design was followed. A multi stage random sampling procedure was used to select 12 districts from each of the 6 administrative divisions, from the selected districts. 36 Upazilas (3 from each district) were randomly selected from these upazilas. The results of the study showed that (i) FWAs are the kingpin between family planning program and the community. The residency in the place of posting, length of service and socio-demographic characteristics are believed to have influence on motivation and regularity of field visit by FWAs; (ii) the overall performance of national family planning program is dependent on the regularity of field visit by FWAs and systematic supervision by FPI and performance of service providers from the static facilities and overall management support provided by UFPO; (iii) data on knowledge of activities performed by FWA and use of services from the facilities were also collected from 1,049 contraceptive users; (iv) in a good number of work units of FWA are vacant for a long period. As a result, the FWAs are facing difficulties in making quality contact during house to house visit. From the findings of this study, the following recommendations are made: (i) the experience and contribution of this large proportion of staff should be carefully utilized in the coming years; (ii) the vacant position of FWAs must be filled up immediately and it necessary new positions might be created after scientific assessment of demand of situation; (iii) payment of referral fees to the FWAs and FPIs can be examined, modern transport facilities should be ensured; and (iv) the DFP can assist MOH&FW in identifying and categorizing the administrative division as low, medium and high performing, and propose to institute a three variant of house to house visit schedule for targeting the special groups including instituting a system of measurable supervision and systematic performance review.

**260. Anonymous. Involvement of local government in management of family planning and reproductive health services. Dhaka: NIPORT, 2006.**

The study was designed to ascertain knowledge and awareness of local govt. representatives and local elites on available FP-RH services and program management; review existing status of involvement of local govt. in family planning-reproductive health program management and service delivery system; and analyze potential areas of involvement of local govt. and local elites in management of family planning and reproductive health services. The study used a cross sectional sample design to obtain information from the primary and secondary sources. A multistage probability sampling procedure was followed for the selection of respondents, covering 12 districts, 36 upazilas, 90 unions and 270 wards from all administrative divisions. Altogether 251 health and Family Planning personnel, 353 local government representatives and 358 local elites were interviewed using a semi structured

questionnaire. The study revealed that more than two third of the health and family planning officials reported high population growth as a main obstacle for the development while 42 percent of local govt. representatives and 36% of local elites agreed on it. A very few health and family planning officials were consulted about different component of planning and decision making of RH-FP program. They only participate in supervising their subordinates. It has been reflected that decentralization in the organization structure is absent. The planning, management and implementation system of RH-FP were developed outside the community. Involvement in planning is largely missing in the current RH-FP program implementation. Only a very few health and family planning officials were involved in local level planning in performing activities. Lack of fund for the population committee, lack of interest of the committee chairman, lack of linkage of committee with family planning program, and irregular attendance of meeting members were the major factors hampering the functioning of the committee. Ensuring accountability is another key for successful program implementation but departmental supervision system has failed to achieve it. There exists a top down approach in which desired community participatory programs are initiated as a response to top level policy directives. The study recommends that the scope of bottom up planning instead of top down attitudinal change, decentralization of authority should be introduced. Existing population committee should be reviewed and updated and linkage of RH-FP with local government should be established.

**261. Ashraf A; Mercer A; Huq NL; Haseen F; Uddin N; Reza M. Use of services in the transition to a static clinic system in two rural upazilas, 1998-2002. Dhaka: ICDDR,B, 2004. (ICDDR,B working paper;no.163).**

The main objective of the static clinic system and HPSP was to improve access to ESP services for the poor. The study was conducted in 5 unions in Abhoynagar Upazila, Jessore District and 7 unions in Mirsarai Upazila, Chittagong. About 22,000, in Abhoynagar and about 38,000 in Mirsarai were included in the study which were two ICDDR,B health and demographic surveillance sites to compare trends in selected key indicators of ESP service use and coverage for areas that did and did not, have CCs operational. In Abhoynagar, the first CC started providing services at the end of 2000 while others became operational in 2001. The proportion of women reporting a visit to a CC in 2002 was about 30-35% whereas in Mirsarai, 20-30% women reporting to be visiting to a CC in the same year. The proportion of women reporting a home visit by an FWA remained around 30% in 2000. The Community Clinics (CCs) expanded very quickly because of major source of supply of contraceptives in 2001 and 2002 in the CC wards of both the areas among also switched to shops and pharmacies for contraceptive supplies as home visits by Was declined in both the areas. During the period 1998-2000, The Contraceptive Prevalence Rate (CPR) for all methods remained around 60% in the CC wards of Abhoynagar and around 55% in the non CC wards. In Mirsarai, the CPR increased slightly from about 42% to 45% in both types of ward. In both the areas, the main contraceptive methods used were oral contraceptive pills and injectable. ANC coverage was much higher in 2000-2002 than in 1998-1999 in both the areas. The proportion of annual deliveries conducted by a qualified attendant increased from below 7% in 1998 to 12-13% in 2002 in both CC and non CC wards of both the areas. In Abhoynagar, BCG coverage was between 90% and 100% in the CC and non CC wards whereas in Mirsarai, BCG vaccination coverage was generally between 85% and 95% for annual birth cohorts. A prospective study should be carried out to assess the user reported trends in service use and



coverage in selected areas; possibly by NGOs whose field workers also conduct regular household visits and mobilize women to use ESP services.

**262. Azim SMT; Kabir MH; Mahabubul-Alam M. Current record keeping systems in the context of delivery of Essential Services Package: a review. Dhaka: ICDDR,B, 1999. (ICDDR,B special publication; no. 97).**

The objective of this study was to understand what modifications or adaptations were necessary in order to meet the information requirements that would support the delivery of Essential Services Package (ESP) through one-stop shopping strategy. The job descriptions and record keeping activities of the Health Assistants (HA) and Medical Assistants (MA)/ Medical Officers (MO) of DGHS and the Family Welfare Assistants (FWA) and Family Welfare Visitors (FWV) of DFP had been reviewed, including the specific forms and data items collected by each of these providers. A brief review was also given of the person MCH-FP Extension Project (Urban) of ICDDR, B on developing a clinic information system for urban primary level NGO clinics. In fact, maintaining longitudinal data collected through routine house-to-house visits by field workers had proved to be wasteful. The findings of the survey reports indicated that the field workers visited only about 38% of the couple in six months period. Nevertheless, the records contained in the different registers and formats and the reports generated from them were reported to represent 100% of all the couples/households in the area. Therefore, the usefulness such a data collection exercise became questionable. Study findings in other countries which appeared similar to Bangladesh context had shown that information systems often seem to be “data led”, generating data on the premise that the provision of a wide range of health information to health planners and managers was a useful and necessary activity. Many of the data recovered and reported by health service staffs were not needed for the task, the staff perform considerable staff time was spent at the different levels of the health system handling data and reports. Yet few apparent improvements were seen in services and programmers. Considering the above matrix and the fact that health and family planning services might be integrated and proved from community clinics with the client-based information could be taken to multiple service providers who could review the necessary data for providing appropriate service to the client/family. The data can also be used to monitor the performance of the worker in delivering ESP service. A list of clients/patients can be used to prepare list of clients/patients’ need follow-up visits because they dropped-out or need special attention. A system of yearly enumeration, collecting demographic, health and family planning data, can be a part of the MIS.

**263. Barkat A; Karim MA; Khan SH; Hoque M. Role of NGOs in delivery of Essential Services Package: an issue paper. Dhaka: Human Development Research Centre, 2000.**

The overall objective of this assignment was to find how the delivery of essential services package (ESP) through GO-NGO partnership could be strengthened. This issue paper was an outcome of relentless efforts of four consultants technically guided by the Senior Policy Advisor of NIPHP, and the Country Manager of the Policy Project. As part of this endeavor, the following activities had been completed by reviewing of all relevant materials; informal discussion with relevant person (in the Government, NGOs and development partners) in all phases; formation of a working group involving the Policy Research Unit of MOHFW, Line Directors (ESP) in DGHS and DFP, VHSS, NGOCC, the Semi Policy Advisor of NIPHP and the members of the core-team. In-depth analysis of the relevant studies deliberations of the

members of the working group, brainstorming sessions, and one-to-one and group discussions with the relevant persons in the government, NGOs and development partners. In order to need, it is to be deliberated upon in the consensus building workshop environment; (i) identification of potentials areas, sub areas and sub-sub areas of ESP in which NGOs, services could be gainfully utilize in compliance with the spirit and goal of HPSP-" to contributed to the improvement of the health and family welfare status among the most vulnerable women, children and poor of Bangladesh. The logical chain of demand side issues which deserve more attention and the relevant decision making process should be involved the following: (i) rationale for NGO involvement or why NGO involvement, assessment of NGOs' past accomplishment of NGOs, limitations of government, pros and cons of NGO involvement in the activities of CCs, identification of specific areas of NGO involvement by ESP component, geographic locations, reaching the poor; size of NGO etc. (ii) In order to materialize expanded NGO involvement in the delivery of ESP under HPSP, there would be a specific need for government support. The supply side issues, e.g designing an appropriate support system for finding logistics, equipment, supplies and training; (iii) NGOs contribution to the delivery of ESP under HPSP will be in congruence with the goal and purpose of HPSP only if the NGO involved. The major issues involved the following: setting up uniform standard of sub-area of ESP, GO-NGO collaboration, client's satisfaction, quality services, quality etc. (iv) The major broad issues that emerged on this were related to the following: the issue of committee (s), areas of coordination's and process of improvements in coordination. The perspective of the process of improvement in coordination was varied widely which deserve careful scrutiny.

**264. Bhuiyan RH; Rahman S; Rahman QM; Kabir H; Hossain M. Evaluate the level of knowledge, skill and efficiency of service providers and field workers regarding FP service delivery. Dhaka: NIPORT, 2006.**

The study was intended to identify the level of knowledge, skill and efficiency in all level workers to identify the problems associated areas of activity for mitigating the inside into the problems of family planning programme in Bangladesh. The data were collected from the primary, secondary and tertiary sources. Both the quantitative and qualitative methods were used for collection of the data. Data from published report, newsletter and journal were also taken off. The five year studies where out of 1411 SACMO, only 6.3% said they received Vaccine of measles. Majority (55.5%) of the MO-MCH, 66% MO-FW, 33.3% and 13.2% JOMBO received the gynecological and obstetrical training with EDC. Out of 36 MOMCH, 55.5% said the training increases the efficiency, 69.4% pointed out need more time for the duration of training to understanding the basic concept of the respective topic. More than 70% MOFW said their responding office is MO and 20.8% said Sr. FWV. Out of 36 MO (MCH-FP), largest majority (83.3%) opined that they have the responsibilities on maternal and child health and nutrition out of 36 MO (MCH-FP), highest majority (77.7%) to advise nutritious foods and vegetables. Seventy eight percent service providers noted that they have the 78% knowledge on physical materials all sectors of family planning, MCH, nutrition and health education. More than 75% FWV and 74% SACMO said that aged couple can use the contraceptive method for permanent protection of subsequent unwanted child. All the MO (FW) said injection is best for long-term protection of child. About 78% MO (MCH) said the Norplant is safe for five years period in the protection of unwanted child. Condom can play a vital role in preventing HIV/AIDS. All of the MOs (MCH-FP) noted that IUD displaced most of the time but only 8.3% agreed this opinion. Most common problem of injection is cases of bleeding. Oral pill, condoms also cause some side effects for almost every user. The study

suggests that further training on MR, RTI, and STI, IUD & ENT treatment of mother and child care and management training is felt. Almost all of them require EOC training, modern pathological lab, adequate supply of medicine and better transport facilities.

**265. Chakma S; Rahaman MA; Azad AK; Banu LFA. Awareness and utilization of MCH and FP facilities by the tribal communities in some selected areas of Rangamati Hill Districts. *JOPSOM*. 2001; 22 Suppl.; 19-23.**

The objective of the study was to assess the awareness of tribal community about maternal, child health and family planning services and their utilization by them. This descriptive cross-sectional study was carried out from March-June 1999 in some villages, about 10-12 km from Rangamati Sadar upazila of Bangladesh. The study was conducted among 130 women of reproductive age group (15-49 years) selected from the tribal community. Data were collected with a pre-tested structured interview schedule. The study results showed that about half (46%) of the respondents had age at or above 30 years and 63% was illiterate. Although 60.8% of the respondents were aware about the MCH & FP facilities, only 26.9% sought antenatal care from these facilities during last pregnancy. Ninety percent of the women delivered child at home. About 56% of the under five children were immunized against BCG, DPT, Polio and measles, and only 39.2% women took tetanus-toxoid vaccines. ARI were found to affect 28.3% children and fever, scabies and malaria affected 28.3%, 15.2% and 13.0% children respectively. More than 60% women received treatment from non-qualified doctors and only 3.85% utilized government hospitals. Forty percent women were current contraceptive users. Only 32.7% women collected contraceptives from the government facilities. The study results also revealed that MCH & FP facilities were not being properly utilized. Dissemination of appropriate information, education and motivational programs are needed to increase awareness of the tribal communities.

**266. Gazi R; Nowsher-uddin AH; Nazrul H. Functioning of Thana Functional Improvement Pilot Project: perspectives of managers, service providers, clients and community. Dhaka: ICDDR,B, 2001. (ICDDI,B working paper; no. 147).**

The overall objective of the study was to assess the perceptions of health service managers, providers, clients and community representatives on the effects of TFIPP. The study was undertaken during April- May 1999 in the eight Thanas of three TFIDP districts: they are Dimla and Jaldhaka Thanas of Nilphamari district, Lanksham, Daudkhandi, Chandina and Barura Thanas of Comilla district. The study areas were purposively selected jointly by the ORP and the TFIPP on the basis of location and performance. The study was designed to obtain information on selected process and outcome indicators, which were outlined in the conceptual framework. All Thana managers from eight thanas were interviewed using an anonymous questionnaire. Thirty-two Thana managers were interviewed and in each Thana, one focus group discussion (FGD) was arranged. Results of the study showed that, in the TFIPP project areas all levels of staff had positive attitudes toward preparation of an annual action plan (FIAP). The study also found that, in many places, the Thana Project Committee (TPC) meetings were not regularly held. Although there was a target of 6 meetings on an average, per year, the average number of meetings held per year ranged from 1.4 in Chittagong Division to 2.3 in Rajshahi Division. The community leaders often felt the need of more training on the health issues. The TPC members in the study thanas received orientation during the inception of the project. Analysis of the minutes of TPC meetings also revealed that attendance of some categories of members, such as NGO representatives and Thana-level

GOB officials, such as Thana Education Officer or Engineer were very poor in each place. Most of the managers, supervisors of Thana and union level service providers expressed that the training was relevant to their job and were benefited from their respective training. In general, the service providers and supervisors appreciated the strong record keeping system implemented by the project. The provision of financial and logistic support was a key factor to ensure formulation and monitoring of the Functional Improvement Action Plan (FIAPs). The service providers suggested that a more transparent procurement mechanism and an effective feedback mechanism for all levels staff and for a rewarding system for better performance of staff should be developed.

**267. Haider SJ; Sultana N; Alam MH; Kabir M; Pervin D. Family planning service access in low performing areas: Sylhet and Chittagong. Dhaka: NIPORT, 2005.**

The study was intended to find out the factors influencing Family Planning Service Access and use in the Low performing Areas of Sylhet and Chittagong Divisions. The survey data were collected by trained and experienced interviewers using both the qualitative and quantitative methods. The Study proposal entailed a cross sectional statistical design, to obtain information from the primary, secondary and tertiary sources. The study covered representative sample of the eligible couples, community people, field workers, service providers and program managers from selected low performing upazilas of Chittagong and Sylhet. The survey was conducted over 2500 couples dividing them into 63 clusters. The study showed that acceptance or non acceptance of family planning is influenced by various factors such as: the ratio of eligible couples to facilities and manpower is comparatively high in low performing Upazila in both Chittagong and Sylhet divisions. Both respondents and their husbands are slightly younger in Sylhet than those in Chittagong. The level of education in Sylhet is much lower than those in Chittagong and Chittagong enjoy much better economy than those from Sylhet. The exposure to TV in the rural areas of Sylhet is half of the rural areas of Chittagong while the exposure to radio in the rural areas of Sylhet is 30% is about one third less than that of Chittagong. On sources of information media play more effective roles in Chittagong than in Sylhet. In case of Chittagong, 72% of the couples decided on family planning together and in Sylhet such participation occurred in case of 65% of the couples. Forty four percent of Sylhet perceived that service facilities are located beyond one mile from their residence. Proportion experiencing side-effects in Chittagong (54%) and in Sylhet (49%) is almost equal. To accelerate acceptance of family planning the following recommendations are considered. Local workers for inaccessible areas should be appointed to strengthen BCC programs emphasizing use of local talents and resources. Population and family planning education in school and colleges, media communication on family planning should be ensured. To ensure treatment for side-effects, increase community participation, increased access to FP clinics and proper steps should be taken.

**268. Howlader SR; Routh S; Hossain A; Saha NC; Barkat-e-Khuda. Demand for healthcare by rural households in Bangladesh: level and determinants. Dhaka: ICDDR,B, 2000. (ICDDR,B working paper; 137).**

The main objectives of this paper were to analyze the level of demand for healthcare and to identify the important determinants of demand. The paper used a data set collected from rural households for the ORP of the ICDDR,B to analyze demand for healthcare. Data were collected under the ORP's Sample Registration System (SRS). A structured questionnaire was used for collecting data in 1997 from the project upazilas -Abhoynagar in Jessore district and

Mirsarai upazila in Chittagong district. Random sampling system and households sampling systems were used in this study. The size of the sample households was 2,210. The findings of the study revealed that the data on willingness to pay explicated that most people (80%) in the study thanas were willing to pay for child immunizations, TT, and healthcare for children and women. The price elasticity of demand was quite low, so that even a large change in the households (20%) which did not want to pay for healthcare mentioned their “unwillingness” to pay for government service” as the main reason. Even among the households which mentioned that they did not want to pay due to the lack of financial capacity only a few (2%) were truly poor in the context of rural Bangladesh. The implication was clear: introduction of a fee for health care would reduce demand, though not considerably. To counteract the possible decline in demand, a safety net for about 2% of the people who are extremely poor and motivation for another 18% of the population were needed. Data on expenditure for healthcare received for the last illness condition of children and women revealed that a rural household spends Tk. 100/- per illness episode for children and Tk. 67% per illness episode for women. The amount of expenditure varied with change in income, type of disease, and type of provider. The findings of the study recommended that in order for a demand for healthcare function to be appropriately estimated. A survey was needed to collect data on all the variables of the demand for healthcare function derived in the General Framework of Analysis of the study.

**269. Islam Z; Sarker S; Routh S; Barkat-e-Khuda; Mesbahuddin M; Shahjahan M. Site selection for Community Clinics: a field experience. Dhaka: ICDDR,B, 1999. (ICDDR,B report; no. 106)**

The study objectives were on site selection for community clinics to: (i) orient of government managers and providers at the district, Thana levels and below, and community leaders on the new program; (ii) operationalization of community clinics (CC) with particular emphasis on site selection and other related issues of community clinic-based service delivery; and (iii) documentation and dissemination of corresponding findings to suggest measures on further fine-tuning of related government guidelines and documents, as and when required. The methodology of the operations research were attained through organizing briefing meetings, planning workshops, field visits and personal contacts, stock-taking meeting, focus group discussions and technical assistance. In facilitating the process of site selection for community clinic at Abhoynagar of Jessore district, Mirsarai and Patiya of Chittagong district, during the period of October 1998 to August 1999. Same findings had been come out from the operations research program in selecting sites for the community clinics. Thana managers, union supervisors, and outreach field workers of the government health and family planning service delivery system and community leaders were involved with facilitation activities as to help them understand the issues and thereby expedite the process of site selection for Community Clinics. The Community was found generally willing and able to donate land for CCs along with fees required for land registration. The study received good response from the community about land donor, subscription from the community, and any individual of the community. Some populations were found, isolated from the existing health centers, due to the existence of natural barriers. Thus, they might not get easy access to the proposed CCs. Two toilets was built outside the building or kept attached rooms at each side. This paper was generated several important observations on the site selection process and thereby made some specific recommendations: (i) orientation of the district and thana officials, union supervisors and service providers should be organized immediately to expedite the process of site

selection; ii) orientation/briefing meeting of the UP Chairman and other Community leaders should be organized to give them a clear understanding of the GOB guidelines Involvement of Thana Parishad/TNO in the implementation process should be ensured.

**270. Khanum PA; Wirzba H; Haque I; Mirza T; Juncker T. The Quality of care provided at Union Health and Family Welfare Centres in Bangladesh: clients' perspectives. *Asia-Pacific Population Journal*. 2000; 15(3): 23-41.**

This study was undertaken to know how much the clients attending the FWCs know about the types of services available, how they assess the quality of the services being offered and whether they leave the centres feeling satisfied or dissatisfied. A cross-sectional exploratory study was designed to determine the use of services and the quality of the services offered at union FWCs from the users' perspective. Two rural Sub-Districts, namely, Abhoynagar in Jessore District and Sirajganj Sadar in Sirajganj district were selected. A total of 650 clients were interviewed for the study, of the clients 50 from each FWC. Every fifth clients were interviewed once he or she was ready to leave the centre regardless of who provided the treatment. The majority of the respondents in Abhoynagar were in the age group 20-25, while in Sirajganj most respondents were aged between 25 and 30 years. Almost two third of the respondents did not attend the school in both areas. More than 90% of the respondents were married and had 2-3 pregnancies. The majority of them lived very close to the FWC. Over half of the recipients were users of modern contraceptive methods. The respondents in Abhoynagar were more likely to be using long-term methods, whereas the clients in Sirajganj had tendency to use short-term methods. Knowledge refers to the respondents' ability to mention different types of services offered at the FWC known to them. Findings showed that, even without prompting 83% of the respondents knew about the curative services offered at FWCs, and over 50% of them were aware of family planning and child care services. When respondents were prompted for more information, more than 90% mentioned curative care for women and children, antenatal care and family planning services. The respondents' knowledge of the services offered at the FWCs was checked along with their level of education. EPI, health education, delivery and menstrual regulation represent a very small percentage of cases those responses were not presented here. Except for knowledge of the necessity of antenatal care, no significant difference in knowledge was found among the respondents with different education levels. The study recommended that need to be designed to educate women and men in the rural community and motivate them to use FWCs. However, further study of the under-utilization of the FWCs four antenatal and postnatal care delivery and other reproductive healthcare services also needs to be undertaken.

**271. Khatun J; Tunon C; Ashraf-uddin M; Sirajuddin AKM; Islam M; Jasim-uddin M. Improving planning and co-ordination of services among providers of Essential Services Package in urban Dhaka: findings from an operations research. Dhaka: ICDDR,B, 2000. (ICDDR,B working papers; no. 134).**

The overall objective of the intervention was to improve the availability and use of the Essential Services Package (ESP) in the Dhaka City Corporation (DCC) area. The methodology for planning the intervention included needs assessment of MCH-FP services in DCC zones, inventory of health and family planning facilities, briefing the major service providers of each zone on co-ordination mechanism, organizing orientation for Zonal Executives of DCC (ZEO and AHO) on the committee activities and organizing training for EPI supervisors of DCC on development and use zonal MIS. The components of the

intervention were: (a) promoting coordination among stake-holders, (b) development of a joint action plan; (c) introducing review and follow-up meeting for monitoring implementation of the plans. Findings from the intervention indicated that Zonal Health and Family Planning Coordination Committee because ready made forum to improve coordination among different stake-holders to identify and resolve common health issues and to plan implement national and local health activities. The findings also showed that absence of external facilitation affected the committee activities. So, external facilitation was then a critical issue to use the committee activities smoothly. The results also indicated that those who were not members of the committee also thought that the coordination committee was needed in the urban areas to improve coordination among different stakeholders to know about the local organizations working in the area and to avoid duplication of services. The findings revealed that most of the participants in the in-depth interviews perceived that the zonal MIS helped to know zonal performance and helped identify duplications and overlapping of services. The identified limitations were: inadequate manpower of the DCC Health Department in terms of number and skills to implement the newly-designated role of the DCC in urban health, lack of timely financial support, and inadequate support from the DCC to the zone level for implementing zonal committee activities. The participants of the workshop recommended that the provision of necessary resources and skills (human and logistics) of DCC's Health Department would have to be ensured to implement the new role of DCC in urban health.

**272. Moore A; Larson CP; Haseen F. Rapid assessment of young people's perspectives on Government, NGO and private health services: project on 'prevention of HIV/AIDS among young people in Bangladesh. Dhaka: MOH & FW, National AIDS/STD Programme, , ICDDR'B, ACPR & Population Council, 2006.**

The objectives of this formative research were to assess young people's perspectives on existing health care provision and to consult them about key characteristics for youth-friendly health service in Bangladesh. Focus Group Discussions (FGDs) and semi-structured interviews were conducted with young people in 16 sites, rural and urban, across Bangladesh, 8 rural and 8 urban, covering 5 of the 6 divisions. The NGOs were asked to include in the list young people who had used their services and who had no history of service use. In areas without known NGOs researchers went from house to house asking whether young people wanted to participate in the research, using the local Government hospital/health centre as the starting point. The aims of the FGDs were to obtain: Information about the types of psychological problems experienced by youth, information about young people's health, their experiences of using health services, peoples perspectives on characteristics of youth friendly service and operationalise key "quality of care" terms, obtain their view point on current Government, NGO, private health care services. Nearly 40% of young people rated their health as far as poor. This finding is in contradiction to the usual evidence that adolescents are a generally healthy group and as expected, it is much lower than the self related health of young people in developed countries. When service users were asked to rate the quality of care that they received from their provider, the majority (86%) expressed satisfaction and a similar number said that they would return to the provider and recommend the provider to a friend. Incorporate service addressing "social" problems for young people, especially women are worried about marriage, motherhood, violence and harassment. Use information provided by youth to inform the setting standards for pilot services, younger clients report less general satisfaction and are less able to keep their consultation private from family/friends related to

the older peers, same-sex providers are important for young people as shame and shyness are the major barriers to seeking health care.

**273. Quiyam MA; Ahmed S; Islam A; Khanum PA. Strategies for ensuring referral and linkage for Essential Obstetric Care (EOC): a review. Dhaka: ICDDR,B ,1999.**

The aim of this study was to find out some strategies for ensuring referral and linkage for essential obstetric care in rural Bangladesh. The referral and linkage activities, undertaken by the ORP of ICDDR,B and other agencies, are currently being reviewed, with a view to modify and adapt strategies for better referral and linkage for essential obstetric care. The results of the review of NGO activities showed that NGOs provide antenatal, postnatal and general health care services to their catchment population. Their own field workers perform domiciliary visits, provide preventive services and refer clients for appropriate care to their clinics. Referral and linkage between the service delivery points was found to be limited for obstetric care. The NGOs usually referred patients to the government health care facilities. The lessons learned from all the reviews are : (i) the pictorial card developed by the project was an effective tool for raising community awareness about the symptoms and signs of complications of pregnancy and child birth, and improve linkage among the different service delivery tiers; (ii) women still received care from the village practitioners; (iii) husbands were the major decision makers about care providers for their wives; (iv) referred and follow-up mechanisms were weak; (v) no standardized supervision and monitoring system was practiced; (vi) transportation for referred patients was an area of concern for the utilization of EOC services. It may be recommended that programs need to be designed to aware the community regarding complications of pregnancy and childbirth involving males specially the husbands, social elite, and various formal and informal groups.

**274. Rashid SF. Low performance of BRAC's health and family planning facilitation program in Habiganj district and hard to reach areas. Dhaka: BRAC, Research and Evaluation Division (RED), 1999.**

This report aimed to primarily examine the performance of BRAC's family panning program in some low performing thanas and hard to reach areas in Habiganj. The research was conducted using methodologies of direct observations, informal discussions and in- depth interviews. A total of 11 BRAC staff members, male Program Officers (POs) and female paramedics were interviewed. In addition, 10 women clients, 6 males, 4 depot holders were also interviewed. Furthermore, informal discussions took place with staff and a number of clients in Habiganj Sadar and Maulvibazar Sadar. The rural women and men were randomly selected. All of the women and men were interviewed in the privacy of their own homes so that they were able to speak freely about sensitive issues. It was found that the poor performances of the family planning program in this particular area can be attributed to a number of factors. There appears to be shortage of female and male staff, additional work load and low morale, resulting in high drop out rates of staff members. Given the existing field work tasks, the delivery of family planning is relegated to a secondary role because the service system provides little time or opportunities for staff cooperation to carryout effective mobilization, moreover geographical barriers particularly in hard to reach area (distance, lack of transport) etc. And it was difficult for female staff to access difficult areas. A number of depot holders expressed dissatisfaction with their voluntary work. This was an implication on the quality of family planning care at the field level as they were considered to be very persons at the community level. Moreover, there was a lack of adequate supply of contraceptives from



the Government in all of the Thanas as visited. In Habiganj, there were some widespread religious ideologies against contraceptive use which affect and influence the village communities. A considerable number of BRAC female staffs had dilemmas with BRAC's mandatory policy of riding bicycles in the conservative areas. Interview in the thanas revealed an existing gap between knowledge and the use of contraceptive methods amongst rural women and men which indicates the gap in service delivery of methods and information. Effective interventions and mobilization in village were recommended to gradually alter strong religious opposition of family planning.

**275. Rob U; Talukder MN; Mahbub-ul-Anwer M; Rahman L; Mutahara M. Health sector reform in developing countries: trends and lessons learned. Dhaka: Population Council, 2005.**

This review was initiated to identify issues and lessons learned from health sector reform initiatives of developing countries with the long-term objective of strengthening their national health care system and improving the efficacy, equity and quality of health care services, attempts have been made in this review paper to identify important dimensions of health sector reform experiences of developing countries and examine what reforms have been carried out in these countries. The review paper presents trends in health sector reform in various developing countries and identifies lessons learned. This paper is primarily based on four background country papers presented by several authors. This paper thoroughly investigates the health sector reform experiences of four selected countries – Bangladesh, Pakistan, Indonesia and Tanzania with a view to identify the problems and achievements (if any) accompanied with reform initiatives. Most of the developing countries have undertaken different reform initiatives in the health sector. In this sector health sector reforms Bangladesh is delineated here. There are two large units in the Ministry of Health and Family Welfare (MOH&FW) of Bangladesh-the Directorate General Family Planning and Directorate General Health Services. Family planning in most cases, was being financed under the development budget, and was seen as a program driven more by donor priorities. In 1998, with the introductive of Health and Population sector Program (HPSP) both the population and health programs were merged into one sector under the rubric of health sector. In other words, all activities were converged into one basket and all resources – both revenue and development fund were also put together to support activities to achieve the overall goals. Family planning information and contraceptives are offered through communication campaigns. The Government has developed a comprehensive service delivery infrastructure at all levels. Around 300 NGOs are working in the health sector. Some of them are playing pro-active roles in the promotion of health and population activities. In fact, these initiatives were only reforms with abrupt shifts from a project approach to program approach only, so the changes were from multi sect oral to sect oral approaches, doorstep to one stop service delivery. In July 2003, the government launched the HNPS. Within this package, the government has decided that the sector –wise program approach will continue. The Success and failures of the different components of their reform has been discussed here by some approaches. These are: i) decentralization, ii) unification of verifiably operated services, iii) Go-NGO collaboration/public-private partnership, iv) community involvement, v) health and financing, vi) human resources development, vii) equity and pro-poor service delivery; and viii) present status of health care.

**276. Routh S; Barkat-e-Khuda. An economic appraisal of alternative strategies for delivery of MCH-FP services in urban Dhaka, Bangladesh. Dhaka: ICDDR,B, 1999. (ICDDR,B working paper; no. 154).**

The main objective of the study was to examine the cost and effectiveness implication of the two alternative strategies in comparison to the conventional (existing) door-step distribution system. In this study the data were collected by: (a) a time allocation study through direct observation of service provider, (b) an assessment of the operating costs, and (c) the identification of outputs (cost centers) of the strategies. Joint costs were apportioned through a step down allocation principle, based on time allocations and volume of out puts. The study findings showed that the transition from the doorstep to the clinic based service delivery strategy initially increased programme operating costs because of the required strengthening of the clinic facility. Enhanced capacity utilization of clinic services was critical to decreasing unit costs for services within the clinic based alternative. Both cost per birth averted and cost per QALY gained were lowed lowest for the static clinic based strategy. The study suggested that delivery of health and family planning services from static (fixed) clinics, complemented with a reduced system of out reach workers to inform and target the hard-to-reach clients, was the most cost effective service delivery alternative in urban Dhaka. Clearly, there was a potential its replication in other urban areas of the country.

**277. Routh S; Ashraf A; Stoeckel J; Barkat-e-Khuda. Consequences of shift from domiciliary distribution to site-based family planning services in Bangladesh. *International Family Planning Perspectives*, 2001; 27(2) : 82-95.**

The article was written to assess the consequences of shift from domiciliary distribution to site-based family planning services in Bangladesh. Using data from the longitudinal surveillance systems of the Operations Research Project of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), a before and after analysis of the contraceptive prevalence, method mix, source mix, new acceptance rate and dropout rate was conducted to assess the consequences of the shift in service delivery approach. The shift from domiciliary distribution to clinic based service delivery appeared to have resulted in a slight increase in contraceptive prevalence in the urban study areas, from 54%-56% before the shift to 55%-57% afterward. The changeover did not produce any discernable variation in the method mix, the proportion of new acceptors of family planning or the contraceptive dropout rate. This apparent lack of change could be explained by increased use of alternative sources, with a substantial rose among users in reliance on pharmacies and shops (30-35% before vs. 42-50% after). In two rural study areas, the shift from domiciliary distribution to service delivery from static sites known as cluster spots resulted in an increased in the prevalence rate, from 52% to 57% in Paira and from 40% to 46% in Durgapur. The changeover coincided with greater use of injectable contraceptives and decreased reliance on traditional methods among rural contraceptive users. A notable immediate increased in new acceptors also was evident, as was a long-term, declined in dropouts. In the following shift, 43-44% of current users obtained their contraceptive supplies from cluster spots, as did 32-33% in Durgapur. The recent change in the family planning program toward clinic-based delivery of an integrated package of essential health and family planning services appeared likely to maintain, and perhaps even increased, contraceptive prevalence levels in Bangladesh.

**278. Routh S; Arifeen SE; Jahan SA; Begun A; Thwin AA; Baqui AH. Coping with changing conditions: alternative strategies for the delivery of maternal and child health and family planning services in Dhaka, Bangladesh. *Bulletin of the World Health Organization*, 2001; 79(2): 142-149.**

The study conducted with a view to developing field-testing alternate approaches to the delivery of maternal and child health and family planning (MCH-FP) services in urban areas. Two alternative strategies featuring the withdrawal of home-based distribution and the delivery of basic health care from fixed-site facilities were tested in two areas of Dhaka. Operations research was conducted by the Centre for Health and Population Research at the ICDDR,B from January 1996 to May 1997. The intervention followed a quasi-experimental nonequivalent control group design with pretest and post-test measurement. The effects of the alternative strategies were assessed through population-based surveys and analysis of service statistics in the intervention and comparison areas. The population-based surveys were conducted using a modified EPI 30 cluster methodology. Independent samples were drawn in each survey, using a cluster sample methodology. From the population based sample surveys. The findings showed that in the PHCC strategy at Hazaribag, the CPR increased from the pre-intervention level of 60% to 64%. Similarly in the CSP strategy tested in Gandaria, the CPR increased from the pre-intervention level of 55% to 56%. Urban women were willing to travel outside sources but were probably not adequately motivated to attend CSPs for the sole purpose of obtaining pills and condoms. There were increasing trends in the numbers of clients attending the static clinic (PHCC) and in the services used. Operations research also revealed that strengthening the clinic activities, the relative share of clinic-related costs initially increased in the PHCC strategy. These findings contributed to the formulation of a new national programme involving the delivery of package of essential health and family planning services by a system of static clinic. Lessons learnt from the intervention will help in the operational development and further refinement of the clinic-based service delivery strategies adopted by the government and non governmental programs in urban areas.

**279. Sarker S; Islam Z; Routh S. Operations research on ESP delivery and community clinics in Bangladesh: policy implications of dissemination on site selection of community clinics. Dhaka: ICDDR,B, 2000. (ICDDR,B special publication; no. 110).**

The operations research project was undertaken to document the operationalizational process, monitor, analyze, evaluation of the performance of the new system, identify the problem incorporated in implementation of the new system and suggest probable solutions of the ESP delivery systems and community clinic establishment activities. Accordingly, the ORP initiated this research in collaboration with the MOHFW and its Directorates and Management Change Unit (MCU) and Program Coordination cell (PCC) of MOHFW at three of its project sites namely, Abhoynagar Upazila of Jessore district and Mirsarai and Patiya upazilas of Chittagong district. The first step in operationalization of CCs was to select appropriate sites. The Project Implementation Plan (PIP) of HPSP described several features relating to site selection, subsequently the MOHFW issued guidelines and a circular on the same. In the light of these documents, the ORP facilitated the process of site selection in its project sites. This facilitation effort revealed many issues and problems relating to the subject. This problems and issued were shared with the national policy makers and program managers, resulting in modification of the program of formulation of new policies. These policies accelerated the selection of appropriate sites in districts. Moreover the lesson learned from this operations

research helped the policy makers to establish the initial details of a new service delivery approach as envisaged in the HPSP.

**280. Sarker S; Islam Z; Saifi RA; Begum HA; Anwar S; Routh S. Operational guidelines for management of community clinics by community groups: a study on perspectives of stakeholders. Dhaka: ICDDR,B, 2000. (ICDDR,B working paper; no. 138).**

The study was intended to gather community perceptions specifically to formulate a modus operandi (terms of reference) for community groups (CGs), and to ascertain the specific activities feasible for CGs to perform and the means through which the community could discharge them. The study followed a qualitative approach of participatory discussion with the CG members and other elected community representatives. During August to December 1999, 6 workshops were held in 6 unions of 4 upazilas, namely Abhoynagar and Keshobpur upazilas in Jessore district and Mirsarai and Sitakunda upazilas in Chittagong district. These workshops were organized by the members of 18 CGs. The participants were enthusiastic in shouldering the responsibilities given to them, and candidly expressed their views and ideas on the matters discussed with them. A considerable number of participants opined that the tenure of the CGs should be 3 years with a provision for co-option of new members in case of death of any member, inability of a member to function for physical reason, out migration, resignation or personal grounds, or termination of one's membership following disciplinary action. The participants said also the CGs should be made accountable to the UP chairman and a collaborative relationship should be built between the CGs and the government health and family planning supervisors. They also shared their opinion a maintenances and security of the clinic building. They further suggested that users for donations and subscriptions could be thought of as the possible mechanisms for community financing. Results of the discussion suggested that the CGs should be sufficiently empowered to deal with the desired responsibility. However, further research would be needed to see how effectively the community could continue to shoulder the responsible entrust to them with regard to the management of CGs.

**281. Sarker S; Islam Z; Routh S; Saifi RA; Bgum HA; Nasim SMA; Mesbahuddin M. Transition plan on shift from outreach to community clinic-based service-delivery system: a study of perspectives of stakeholders. Dhaka: ICDDR,B, 2001. (ICDDR,B working paper; no. 146).**

The study was taken to identify appropriate strategy to address the transitional issues in relation to operationalization of CGs on the delivery of ESP and to identify the appropriate transitional strategy to gather perceptions of the community and the providers. The study followed a qualitative approach of participatory discussions with community group (CG) members, workers of non government organization (NGOs), volunteers, teachers, other elected community representatives, community level service providers and union level supervisors. Four workshops were held with the participants of the four study unions of two upazilas, namely Mirsarai upazila of Chittagong district and Abhoynagar of Jessore district. A total of 123 participants attended the workshops. Thirty-two percent of them were field-level providers and supervisors, while 40% were community members (CG), volunteers, NGO workers, teachers and union parishad chairman/members. Results of the discussions in the workshops revealed that effective implementation of phase out of the existing service delivery sites depends on certain activities to be carried out by the providers and the community

members to support the plan. In the workshops, behaviors change communication activities were identified as the most important support activities. Although the Community Clinic-based service-delivery system would eventually replace the existing make shift service centers and domiciliary visits, a provision for targeted/limited home visits had been made in the government guideline or CGs as a special arrangement to address the needs of the most vulnerable sub-populations unable to attend the CGs on physical ground or other valid reasons. Based on analysis of the existing situation of the service delivery system and the issues relating to their use by the rural communities, some useful recommendations were made of reconsider while developing a transition plan in shifting toward the CC-based service delivery strategy. The findings of the workshops recommended that the transition of services from the existing system to the CC-based system should be planned at the local level. The Upazila Health and Family planning Managers, in consultative with the field level providers, supervisors and the community representatives could prepare a plan for each union. During the preparation of the plan, the local factors should get sufficient consideration. Although the transition plan would be a local effort, an operational guideline would help the local staff and community to adapt it according to the local needs.

**282. Schuler SR; Bates LM; Islam MK. The persistence of a service delivery 'culture': findings from a qualitative study in Bangladesh. *International Family Planning Perspectives*, 2001; 27: 194 -199.**

The present study was intended to present the findings from a qualitative study in Bangladesh. A new initiative in Bangladesh shifted the emphasis in service delivery from door to door contraceptive distribution to delivery of a broader package of essential services, primarily through clinic. In depth, semi structured interviews, group interviews and observations in service delivery setting were conducted in three rural and two urban sites to examine how clients, communities and programme staffs were adapting to the new service delivery norms. The analyses in this article drew from about 125 interview transcripts. Community reaction to the service delivery changes generally had been favorable and suggested that family planning clients and their families were willing to adapt the new approaches. However, responses to the policy changes on the part of clients and communities appeared to be shaped by norms that developed under the previous family planning programme model. Moreover, providers and clients seem to find it difficult to shed habits and assumptions surrounding the provision of specific methods clients also often feel that since service providers furnished them with a method. Somebody had come to expect not only discounted or free services but also compensation for adopting clinical methods. The study paper suggested that the new policies need to be persistently reinforced throughout the service delivery system. In addition, providers were needed to translate and communicate policy changes to make them more comprehensible in the communities affected by them.

**283. Sultana F; Ahmed F; Dey KC. Evaluation of family development centre (FDC). Dhaka: FPAB, 1999.**

This study was undertaken to evaluate the Family Development Centre (FDC) project. The major objective of the study was to assess socio-economic, demographic, FP-MCH, health and project intervention issues. For these purpose four branches of FPAB namely Barisal, Chittagong, Sylhet and Bogra were selected and 12 FDCs of these branches were considered to be taken a study. A sample of 600 eligible women of the project beneficiaries was selected randomly to collect data through interview. The findings indicated that the mean age of first

marriage was 16.0 and each woman had 3.1 live births. Average household size was estimated to be 5.5 members and knowledge about FP methods was found to be universal. The CPR was estimated 67.0%, oral pill (26.0%) and injectable (23.0%) were widely used. Immunization rate were 96.0%, major sources treatment facility as private doctor (59.0%), hospital/ health complex (29.0%) and FPAB clinic/camp (9%). Eighty-eight percent of women had given last birth at home and 83% of them had TT vaccinated. Three/fifths used slab latrine. The major interventions of the project as mentioned by respondents are sewing, child/adult education, handicrafts, providing loan, vocational training, FP and MCH care. Finding expressed that 68.0% admitted that they had attended the group meeting of FDCs. One-fifth received vocational training, 25.0% on poultry, 84.0% on sewing, and 19% on handicrafts. Fifty-one percent of them had applied their skill and training in IGA. They had earn income of Tk=500-1000 per month by utilizing the training. Forty-five percent had ever received credit amount in Tk.500.00 to Tk.1500.00 from the project. Involving in FDC and receiving credit, average women developed a capital and social status had been raised significantly. The study suggested for providing more loans, increase duration of training, more sewing machine including embroidery machine, more MCH service and more slab latrine supply to the beneficiaries.

**284. Sultana F; Dey KC. Evaluation of collaborative project with other organizations. Dhaka: FPAB, 2001.**

The study was undertaken to understand the current practices and gaps in the dimension of FPAB project with the collaborating project of other organization that was initiated from 1972. The aim was to promote the quality of FP/MCH services to eligible couples with emphasis on recruitment and retention of young and low parity couples and expansion of services to under served areas. At present the project was linked to FPABs strategy of providing quality health and family planning services through the organized collaboration project with other social services organizations achieved a great success in promoting family planning and reproductive health among the target population in cost-effective way. The study on collaborating project was carried out in three project areas such as Bangladesh Diabetic Association, Pabna Gono Homeo Chikitsha Foundation and Concerned for Environment Development and Research (CEDAR). For data collection 375 service beneficiaries were interviewed, FGD (two from each area) were held and all previous documents and records were reviewed. The major findings of the study reflected that currently it was found that 78.1% practiced FP devices but only 5.5% used adopted permanent methods, 9.1% users' different clinical methods. In comparison to women, only 187.1% male participants were used FP methods. Oral pill (46.1%) was the mostly favored method used by the fertile women, followed by injectable (24.9%), condom (16.7%). Project workers were the main source of getting supply (70.2%) of contraceptives in the project area. Only 11.3% had some problems in using different contraceptives like headache/vomiting (57.6%), irregular menstruation (48.5%), abdominal pain (15.1%), weight gain (9.1%) etc. Pregnancy (25.6%), husband away (12.2%), want baby (37.8%) and sickness (13.4%) etc. were the major reasons for not practicing FP methods. However, 74.4% of non-users expressed their intention to practice FP methods in the future. The study reflected that over 55.5% had knowledge about STDs but the knowledge rate could not be considered as good in relation to projects duration. The IEC material of the project area was very poor, inadequate and insufficient. Over 84% reported that during discussions privacy was maintained. Recommendations made were as: (i) medicine or contraceptives should be distributed freely; (ii) supplying better brand oral pill, (iii) it should

be more follow up visits for the clients; (iv) measures should be taken to improve the supply of IEC/BCC materials; (v) more initiatives for sensitizing the safe motherhood/STDs/AIDs along with FP. for ensuring sustainability of the project and adequate measures should be taken.

**285. Sultan R; Harun-Ar-Rashid; Chowdhury Z; Haque MM; Haque MA. Utilization of comprehensive emergency obstetric care services in selected MCWCs of Bangladesh. *JOPSOM*. 2001; 20 Suppl.; 13-20.**

The purpose of the study was to assess the utilization status of Comprehensive Emergency Obstetric Care Services in some selected Maternal and Child Health Centers of Bangladesh and to find out the barriers in the utilization of comprehensive EOC services in those centers. FOUR MCWCs on old administrative divisions of Bangladesh were selected for observation. The study population consisted of two major groups. The first group was the women of child bearing age attending the MCWCs and the second group was the service providers. These two broader groups were sub-divided into five sub-groups. Data collection instruments were closed ended questionnaire for all groups and observation checklist for the MCWCs. The study was conducted during the period from 15<sup>th</sup> March to 14<sup>th</sup> June 2000. The study results showed that all the logistics, medicines and infrastructure equipment facilities except blood banks were sufficiently available at the MCWCs. Trained personnel were found posted. Despite these facts, the MCWCs were underutilized with respect to the existing capacity. Lack of knowledge, poor socio-economic status, distance and family objections were still important barriers in the utilization of CEOC services at the MCWs. An overall improvement of the status of women in Bangladesh will help in women's mobility, improving knowledge about need for availability of EOC. This would increase their opportunity for receiving CEOC services.

**286. Zaman S. Life in health centre: ethnography from rural Bangladesh. Dhaka: BRAC, 2001.**

The study was conducted in the Shambhuganj health centre of Mymensingh district. Medical anthropologists devoted much of their energy into exploring healing rituals of exotic cultures, indigenous therapists, lay perceptions of health and illness. They rarely made biomedicine itself a subject for analysis and tended to rest assured that, because it is supposedly grounded in science, it is not a subject for anthropological or sociological inquiry. Biomedicine was believed to be based on value-free knowledge and capable of value free intervention. To increase the validity of information the following methods were used: Participant observation, informal conversation, case histories, study of secondary sources. On an average, about only 25 patients visit this centre per day. The doctor is therefore, not too occupied with patients. He has time to listen to the patients and examine them carefully. The patients don't negotiate with the doctor about the diagnosis or treatment they have just accepted what he said. Although a common tendency of all staff members is to devalue indigenous and spiritual therapies taken by the patients. Patients are satisfied with the services of BHC. Each month the staff members have to send a number of reports on various activities of the centre to the head office. It is evident that the biomedical practice in the BHS has taken a definite shape due to some particular, social and cultural factors. The culture of biomedicine in the BHC is shaped by the total availability of staff members, the strong emphasis on client satisfaction, on client satisfaction. As the practice of modern medicine becomes increasingly a technical enterprise, it is more incumbent upon us that is to recognize that the human body is not a machine, that health and illness are not merely biological state, but rather that they are conditions which are intimately related to the constituted by the social nature of human life.

## **2.6 BEHAVIOURAL CHANGE COMMUNICATION (BCC)**

**287. Alam SMN; Khanam R; Hossain S. Healthcare-seeking behavior and BCC needs for urban population: a qualitative study. Dhaka: ICDDR,B, 2000. (ICDDR,B working paper; no. 142).**

This study was designed to generate in-depth information regarding healthcare-seeking behavior of people around the model ESP clinic, and suggested intervention strategies for using services provided by the model ESP clinic through strengthening the BCC. A strategy for a judicious combination of several qualitative research techniques was used for data collection. These included in-depth interviews, group discussions and key informant interviews. Forty in-depth interviews were conducted with the model clinic clients and non-users of model clinic. In addition, 3 private healthcare providers, 2 NGO providers and one Ward Commissioner were also interviewed. Thirty-three informants said that the absence of any disease was considered good health, while 37 informants revealed that the presence of any disease was an indication of bad health. No mentionable difference was found between the responses of females and males. The informants also linked good health with the ability to work, eat food and also with the state of mind. All the informants in the sample selected from the slum and non-slum low-income areas were mostly rickshaw-pullers, vendors, drivers, guards, tailors and low paid govt. service holders. For them, loss of work due to bad health means loss of income that sometimes leads to starvation. Results of in-depth interviews showed that people were used to wait before they sought medical treatment. The main reason was the poor economic status of the informants. The first preference for health care providers were nearby doctors/pharmacies due to easy access, less waiting time, low cost and also their previous bad experience in public hospitals. By and large, informant's knowledge, assessment and expectation regarding facilities available in their neighborhood were good. Thirty-three informants, comprising both users and non-users of model clinic, were aware of the existence of the model ESP clinic in their area. Results of the in-depth interviews showed that 28 of 40 informants were willing to pay for medical services at the model ESP clinic. Review of the result of this in-depth qualitative study suggested that the BCC activities should be strengthened focusing on services available and in what ways the model ESP clinic is different. Existing health education and counseling system should be further strengthened. The healthcare clinic should enquire of the clients whether they have any problems, queries, and complaints. Supervisors should monitor all hospital's staff activities through surprise visits, talking with clients and also ensure quality services.

**288. Anonymous. Evaluation of IEC materials. Dhaka: FPAB, 2000.**

This study was investigated to find out the effectiveness of current IEC materials and films by conducting an evaluative study by which the program managers and policy makers might get an idea about the effectiveness of the current film shows and other IEC materials. The study was conducted at three branches of FPAB viz. Chittagong, Jamalpur and Kushtia. Fifty readers of booklets and 50-film show audiences were sampled through purposive sampling. For data collection two sets of questionnaires and FGD technique were used. The findings of this study consisted of three separate aspect viz. findings of booklet study, findings of film-show study and finding from FGD. The findings of the study indicated that from the booklet about all the reader learn about RH, then about immunization (32.0%), pregnant women care (26.0%), primary health care (29.0%), reproduction physiology (34.0%), maternal and child health care (46.0%), necessity of small family (39.0%), AIDS/HIV (23.0%), and personal



hygiene (16.0%). Booklets had promoted the practices, like using contraceptives and immunization during pregnancy. The films show study indicated that all the film show was made a good impact on the audience and made on RH and other life related issues comprising significant dialogue that could easily understood. The audience suggested that better and new films should be shown (4.0%) and more frequently (28.0%), should give emphasize on AIDS/STDs (6.30%). The FGD information viewed that booklets were not enough in consideration with the demand of the projects, some other contents such as arsenic, latest FP method, food and nutrition, and demographic data should be included. On the other side, films shown at the project were found highly satisfactory because content and dialogue were perfect. But logistic support were not sufficient, budget were very poor. The study recommended some measures to be taken to develop new IEC materials as well as improve the existing ones. IEC materials should be needed based in consideration with clients and community demands, should have adequate supply, easy to understand and ensure maintaining quality.

**289. Anonymous. National media survey 2002. Dhaka: BCCP, SMC & ACPR, 2003.**

National Media Survey 2002 was conducted to assess the extent of the reach of different media and to analyze the media habits of target audience in order to establish the relative importance of different media for the total target population as well as sub-groups of the target audience. This study was based on a notionally representative sample of 10850 males and females aged 15-49, selected from urban and rural areas. A sub sample of 241 BDHS 1999-2000 Puss (Mauza/Mahalla) was selected, taking 85 PSUs from urban and 156 PSUs from rural areas. A format for updating household lists and a respondent questionnaire were used. Television viewer ship among the age group 15-19 was found quite high. Viewer ship of TV in the year 2002 was about 61 percent, which was one and half times higher than that in 1998 (42%) and two times higher than the viewer ship in 1995(30.8%). About 58% of respondents were found to be BTV viewers. Among BTV viewers about 21.3% were every day viewers and 11.8% watched BTV 1-6 days a week. More than tow-thirds (69.7%) of BTV viewers reported viewing BTV on Fridays. The reach of radio had increased from 35.8% in 1995 to 39% in 1998 but has declined to 30.4% in 2002 the decline is especially noticeable in urban areas; it has decreased from 42% in 1998 to 24.1 in 2002. Bangladesh Betar Dhaka (29.6%), Bangladesh Betar Khulna (13.2%) and BBC (7.2%) were found to be the most heard radio stations. Only 25.8% of the respondents read newspapers and 7.9% read Magazines, Newspaper reading had increased from 12% in 1995 to 15% in 1998 and then to 25.8% in 2002. Jugantor (31.6%), Janakantha (30.6%), Ittefaq (29.9%), Prothom Alo (27.0%) and Inquilab (23.3%) were the most read national dailies in Bangladesh. In 2002, the corresponding rate was found to be 16.4%. Television was the main source of information on selected health issues such as diarrhoea management and HIV/AIDS. Smiling sun, green umbrella, EMOC and SMC logos were intended to generate awareness among respondents. The survey result is expected to update the knowledge of communication professionals and help them to develop new strategies for communication campaign. It will be necessary to conduct additional surveys to measure further changes in media habits.

**290. Anonymous. Focused-community assessment of adolescent reproductive health communication program - a baseline survey. Dhaka: BCCP& ACNielson Bangladesh, 2005.**

The study objective was to find the needs of behavior change community (BCC) on RH issues of the adolescents and their parents and communities, to measure the reach of ARH communication materials among its intended audiences and to assess the effect of the ARH communication materials on adolescents and families and communities were the objectives of the survey. A quantitative survey was conducted from February to March 2004 among 1702 married and unmarried adolescents, ages 13-14 years along with their parents or guardians living in 6 unions of three target upazilas in Bangladesh. Trained interviewers collected the data using two structured questionnaires, one for the adolescent and another for the parent or guardian. This focused community assessment reveals not only adolescent and parent knowledge gaps but more importantly a wide gap between current RH knowledge and actual practice. The stated desired age of marriage (18 years) or first child (at the age of 20 years) for girls while the actual age of marriage among study participants was 14.5 years and the percentage of pregnant women at the time of the survey was between 22% to 25%. The education discrepancy between genders is decreasing with many more female adolescents competing school than their mother's generation, roughly 26% of all adolescents surveyed are sexually active. Among the sexually active rate adolescents, 81% were unmarried and 19% married. While 94.4% of sexually active females were married and 5.6% were unmarried. The majority of male and female adolescents experienced their sexual debut between the ages of 12 and 15. The utilization of contraceptive methods to prevent pregnancy at the first sexual experience was very low amongst adolescents in both groups. The percentage of sexually active female adolescents who had ever been pregnant was about 13 to 19% and among them; the percent age of pregnant women at the time of the survey was between 22 to 25%. Exposure to HIV/AIDS messages is high but correct knowledge is low. Correct knowledge about STIs is also very low. The frequency and access to media was generally lower females than males among both adolescents and parents. Further expansion of the adolescent reproductive health program is recommended to a variety of health education and health delivery sectors in Bangladesh

**291. Anonymous. Bangladesh adolescent reproductive health focuses community assessment- final report. Dhaka: BCCP, 2006.**

The overall survey objectives include an increase in the proportion of sexually active adolescents using FP methods including condoms, in the availability and use of adolescent friendly services, and increase in the proportion of adolescents engaging in appropriate health-seeking behavior, in the acceptance of puberty as natural process among adolescents and their families, and a decrease in the prevalence of substance abuse among adolescent. The surveys were conducted in 3 intervention unions and 3 comparison unions within Shakhipur upazila in Tangail District, Ghoraghat upazila in Dinajpur and Chowgacha upazila in Jessore district. The 1<sup>st</sup> Survey consisted of 1702 adolescents between the ages of 13 and 19 years and 1203 parents interviewed between February and March, 2004. The 2<sup>nd</sup> Survey consisted of 1827 adolescents and 1276 parents interviewed between June and July 2005. The study evaluated a toolkit of materials and approaches intended to provide a strategic approach for addressing adolescent reproductive health at the community level. The use of this toolkit can effectively address some of the psychosocial factors and behaviors related to adolescents' RH. Following a one year implementation period, adolescents' knowledge of RH topics and their perceptions

of the social norms prevalent within their peer groups had improved significantly more in the intervention areas than in the comparison areas. Most striking, premarital sexual behavior among adolescents in the intervention areas decreased significantly during the implementation period, while remaining unchanged among adolescent's males in the comparison areas. Adolescents' self-esteem did improve significantly more in the intervention areas than in the comparison areas, although no effects were observed in their confidence for problem-solving their critical thinking skills or in their interpersonal' communication about RH with parents or older family members. The study suggests that adolescents in the comparison communities may have been exposed to other programs that may affect their RH related knowledge, attitudes and behaviors. Community based workshops should be held regularly to increase adolescents' knowledge of RH topics.

**292. Anonymous. Identify effective media messages/campaign for popularizing modern family planning methods. Dhaka: NIPORT, 2006.**

The objectives of the study are to identify the specific activities performed by each of the media engaged in promoting family planning activities, opinion of eligible couples on effectiveness of ongoing specific media messages/campaigns in promoting family planning activities, and identify effective media messages/campaigns for promoting family. The study was based on a nationally representative sample of 2200 males and females aged 15-49, selected from urban and rural areas. A sub-sample of 55 BDHS 2004 PSUs was selected, taking 23 PSUs from urban and 32 PSUs from rural areas. Sample households from each of the selected PSUs were selected using a systematic random sampling procedure. Eligible male and female in equal proportion were selected and interviewed so that if one male was selected from one household then a female was selected from the next household. The major findings of the survey are radio and television is the important electronic media. Exposure to at least one electronic media (radio/TV) was found to be 69 percent. TV viewer ship was found higher among urban, male and unmarried respondents. The reach of radio seemed to be declining. This was perhaps because of the rapid increase in the opportunity to watch TV in the country. The study shows a persistent increase in viewer ship of TV overtime. About two-fifth of the respondents were BTV viewers. Viewers of other cable TV channels were merger lack of cable dish connection facilities, particularly in rural areas, was possibly the main reason for this. Print media such on newspaper are relatively less accessed in Bangladesh. Readership was significantly higher in urban areas than in rural areas. Cinema and video are found important sources of amusement and information. Television and radio are the two major sources of exposure of family planning messages. More than one-third reported that hearing or seeing a family planning message on TV, and one-quarter on the radio. Most of the messages were on oral pill and condom. Very few messages were on other family planning methods. Neither TV nor radio disseminated any information related to side-effects of contraceptives. The media messages helped to create awareness to create small family norm. Few respondents had seen/heard of messages related to childhood marriage, promotion/taking TT injections, nutritious food, and adolescent health care and personal hygiene. None of the respondent had seen/heard of messages on consequence of early pregnancy, RTI, sexual harassment and abuse injecting during or unsafe sex. It recommends that efforts are needed to identify important themes/ideas to disseminate family planning messages. Messages could be transmitted through radio or TV. Local leader, women group etc could be involved in disseminating messages for women, adolescents and men.

**293. Anonymous. Report on BCC needs assessment. Dhaka: NIPORT, 2006.**

The general goal of this study was to improve the quality and delivery of services in health, particularly reproductive health, appropriate to the needs of the poor, in particular women and children and to increase their access to those activities. This cross sectional study focused on the Demand based Reproductive Health issues. It used a combination of qualitative and quantitative data collection techniques, such as structured interviews, FGDs and informal discussions. Considering the Objectives, BCC needs assessment included different stakeholders such as the community leaders, women of reproductive age drawn from the poor and vulnerable families and adolescent boys and girls. A total of 400 women participated in the survey. All the participants were married female. Nearly 57% were aged between 25 and 34. On average 49% of the respondents stated that they listened to the radio. Respondents from rural areas are more likely to listen to radio than urban areas. Exposure to television is higher than exposure to radio about 67% women reported watching TV daily. An overwhelming majority of the study respondents had knowledge on HIV/AIDs. They also have the misconceptions about the modes of transmission of this deadly virus. The data indicate that knowledge of HIV/AIDs is higher in urban areas than in rural areas. Most women knew that the virus is spread through sexual transmission. Sixty nine percent of urban women and 63 percent of rural women know that HIV/AIDs can be transmitted through unprotected sex. Overall 17% of women don't know any mode of HIV/AIDs transmission. Knowledge of STI is generally lower than that of HIV/AIDs. On an average 34% of urban and 30% of rural women don't have any knowledge on STIs. The most common source of information on HIV/AIDs was television (80%). Among married women the most widely known methods of family planning are the pill, injection and condom. Majority of the married women acknowledged that they have used contraceptive method. Most of the women stated that their births were delivered at home. Only 9 percent were delivered in a health facility. Delivery at home is substantially higher among women from rural areas. The study suggests that in order to effectively respond to women's health interventions is needed at the community and health facility levels, health workers and facilitators should be trained, service providers should also be trained on elements of friendly services and BCC can work in a range of concerned areas related to reproductive health issues.

**294. Barkat-e-Khuda; Roy NC; Kane TT; Rahman DMM. Husband-wife communication about family planning in Bangladesh: evidence from the 1996-97 Bangladesh Demographic and Health Survey. *Journal of Population and Social Studies*. 2002; 11(1): 97-108**

This paper examined the factors associated with husband-wife communication with regard to the use of family planning methods in Bangladesh. For analysis, data from the 1996-97 Bangladesh Demographic and Health Survey (BDHS) have been used. A total of 7,588 currently married non-sterilized women in the reproductive age. Among these women, 84% lived in rural areas and 16% lived in urban areas. Results showed that overall communication between husband and wife was 52% in the three months prior to the 1996-97 BDHS. As age increased, the proportion of women reporting communication on FP with their husbands decreased. Women with no children and those with 5 or more children were less likely to report FP communication with their spouses. The proportion of women reporting communication on FP with their husbands was highest (61%) among those who wanted to have children after two years and lowest (42%) among those who wanted to have children within two years. A considerably higher proportion of women who approve of FP use (55%)

reported communication with their husbands than those who did not approve of FP use (8%). Results also indicated that husband-wife communication about family planning in Bangladesh was influenced by at least six factors viz. number of living children, future intention to use family planning, husbands' approval of family planning use, women's approval of family planning use, women's education, and access to mass media. Inter-spousal communication is an important intermediate step along the path to eventual adoption and sustained use of contraception and therefore, efforts should be taken to further strengthen inter-spousal communication.

**295. Hasan K. Evaluation of smiling sun campaign. Dhaka: BCCP & ACNielsen, 2003.**

This survey was designed to assess level of health knowledge, attitudes, intentions and practices and the overall impact of the branding campaign. The primary sampling unit (PSU) for the present study was randomly selected from the sampling frame of the BDHS' 1999-2000. In the BDHS 1999-2000, a total of 341 primary sampling units were used, among them 99 were for urban areas and 242 for rural areas. For the present study following a suggestion of the JHU/CCP, an equal size of 67 clusters (both from urban and rural) was selected randomly from that sampling frame. Therefore, a total of 134 clusters were sampled for the present study. Equal sizes of target population from rural and urban areas were selected. The survey data demonstrates that there has been considerable impact of the drama 'Eyi Megh Eyi Rondro'. Nine percent of the viewers was actually been motivated to visit the smiling sun clinic just after viewing the drama serial. Limited numbers of non-viewers of the drama were found to be aware of smiling sun clinics. But the viewers are cognizant of the existence of such clinics and can recognize the smiling sun logo quite easily as well. On the drama serial itself, 20% respondents have liked the drama's main protagonist, Dr. Salma. The 'Shastho Kotha' shown at the end of each episode has also been useful. This was referred to by 54% of the viewers, while around 43% have said that the quiz sessions have helped them to learn different aspects of family planning and health issues. People have begun to incorporate new habits and lessons learnt into their lives since it was found that drama viewers are now immunizing their children more and giving them nutritious food. Similarly pregnant women are also taking care of themselves more and visiting service providers and health centers. Previously women used to visit quacks and untrained TBAS. This attitude and practice has declined to a greater extent after watching the TV. To conclude with a drama like 'Eyi Megh Eyi Rondro' BCCP can continue to have impact on people and increase the level of knowledge, attitude and bring about change in behavior among them in relation to health care as a whole.

**296. Hossain MW; Khan HTA; Begum A. Access to Jiggasha Program: a family planning communication approach and its exposure to the selected background characteristics. *JOPSOM*. 1999; 18(1): 7-15.**

The objectives of the study were to assess the effectiveness of *Jiggasha*, a new communication programme developed by the Johns Hopkins University/ Centre for Communication Programmes (JHU/CCP) in collaboration with the Information, Education and Motivation (IEM) unit of Directorate of Family Welfare (MOH & FW) for promotion of family planning. An initial survey was carried out to collect information and to collect information on the progress of implementation and to provide baseline data for assessing impacts of the project through subsequent surveys. The present study used the sample constituted by women

respondents and included information on socio-economic and demographic characteristics of the respondents along with their knowledge, attitude, and practice relating to contraceptives. Statistical tools such as frequency distribution, cross-tabulation and logistics regression were used to analyze and interpret the data. The findings of the study provided important information for policy makers to make family planning programme a success. Results showed that *Jiggasha* respondents have more access to radio than television. All respondents reported to have radio in their households and they emphasized on broadcasting more family planning messages on both electronic media. Only 16% women in the study area are found exposed to group meetings. Compared to other community groups, women in *Jiggasha* meetings constituted 38% of total women participants. The results of the logistics regression analysis showed significantly more access in *Jiggasha* among women of <30 years of age than the younger age group. Religion and education levels of respondents had significant impact on access to *Jiggasha*. It is interesting to note that husband's approval plays important role among the *Jiggasha* respondents in using family planning method. *Jiggasha* respondents were more using modern contraceptive than traditional methods. Thus government and the non-governmental agencies should emphasize on female education, which would help them not only to adopt family planning but also to improve their efficacy of life. So, policy makers should pay adequate attention to explore the obstacles in the achievement the objectives of programme intervention. It must be remembered that effectiveness of family planning programmes largely depends on the improvement in contraceptive acceptance rate among the target groups.

**297. Hyder SMZ; Jalal CSB; Roy RD; Choudhury AMR; Yusuf HKM. Does mobilization help change mother's behavior towards health and nutrition? Dhaka: BRAC, 2000.**

The general objective of the study was to assess nutritional and personal hygiene practices of mobilized mothers and their efficiency in caring for young children, compared to those of non-mobilized mothers of comparable socio-economic status. The study was designed as a cross sectional study to comparing between two groups of mothers-one group mobilized and the other not mobilized was carried out at Muktagachha upazilla of Mymensingh. Mobilization was given by adolescent girls trained in BRAC non-formal schools on various aspects of health and nutrition and made house to house visit to mobilize and motivate the mothers. The mothers who were not visited by the adolescent girls considered as non-mobilized. Data were collected by means of a structured questionnaire focusing on four major issues: socio-economic, nutritional knowledge, immunization and childcare. The study findings showed that mobilization had important effects on some aspects of health and nutrition behavior such as age at which complementary feeding should be started, vegetables as sources of vitamin A that prevent night blindness, and personal hygiene like hand washing practice before eating. Sixty-three percent of mobilized and sixty-five percent of non-mobilized mothers had got their child fully immunized. Colostrums feeding to their babies were rather poor in both groups (27.5% and 22.6% respectively). Study showed a significant difference in respect of timing of complementary feeding that started by 57.6% mobilized mother to the children at the age of 5-6 months compared with only 34.8% of non-mobilized mothers doing so. However, no significant difference was found between mobilized and non-mobilized mothers in respects of growth monitoring, immunization, colostrums feeding, use of hygiene latrine, and washing hand after defecation. The reason for this was not present but it might be due to weakness of the mobilized mothers to non-mobilized mothers, or gaining of knowledge by the non-mobilized

mothers from other source like radio and TV. Thus the study recommended to taking initiative to further in-depth study to resolve the problems.

**298. Islam MA; Kabir M; Salam MA. The Influence of mass media on current use of contraception in rural Bangladesh. *Demography India*. 2001; 30(1): 101-114.**

The study was carried out to examine the influence of mass media on current use of contraception in rural Bangladesh. The data for this paper were obtained from Population and Development and Evaluation Unit of Planning Commission, Government of Bangladesh. The data were collected over a nationally representative sample of respondents selected in two stages. The information suggested that almost all the currently married rural women (96.8%) approved use of family planning methods. Practice of family planning methods was also widely approved by their husbands (87.3%) and head of the households (83.4%). About 70% of the currently married rural women reported that their mother-in-laws approved use of family planning method. It indicated that those traditional norms and values maintained by the aged mother-in-laws had been changing. The information indicated that 46.2% of the currently married rural women reported that they head radio. Reaches of television and newspapers among currently married rural women were 16.4% and 2.2% respectively. The results also indicated that multiple media sources help to extend the reach of family planning messages. It is also found that exposure to more media sources had an incremental effect on reproductive behavior. The programmatic implications of these findings were that mass media should continue to be used to promote family planning and other reproductive health issue in rural Bangladesh.

**299. Islam MM; Hasan AHMS. Mass media exposure and its impact on family planning in Bangladesh. *Journal of Bio-Social Science*. 2000; 32: 513-526.**

The objectives of the paper were to analyze mass media exposure and evaluate the impact of mass media on family planning in Bangladesh. The study utilized data extracted from the 1993-94 Bangladesh Demographic and Health Survey (BDHS). The survey considered ever-married women aged 10-49 as eligible for interview. Ultimately 9640 women were interviewed successfully and these constitute the study. There were two main survey instruments: the household questionnaire and the individual questionnaire. The findings indicated that radio and television were two important mass media for disseminating family planning information in Bangladesh. The results indicated that less than half of the ever-married women (47.0%) reported that they had heard or seen a family planning messages in one or more of the four media. Forty-two percent women had heard a family planning message on the radio in the month before the interview, compared with 17.2% on television. A total of 5.4% and 8.4% reported seeing a family planning message on a billboard and poster respectively. Respondent's place of residence, education, economic status, geographical region and number of living children appeared to be the most important variable determining mass media exposure to family planning. Multivariate analysis showed that both radio and television exposure to family planning messages and ownership of a radio and TV had a significant determinant of contraceptive use, even after controlling socioeconomic and demographic factors. The study revealed that both socioeconomic development policies and family planning programmes with a special emphasis on mass media, especially radio, might have a significant effect on contraceptive use in Bangladesh. Rural women needed special attention of planners and policymakers for several reasons.

**300. Kabir M; Islam MA. The Impact of mass media family planning programmes on current use of contraception in urban Bangladesh. *Journal of Biosocial Science*. 2000; 32: 411-419.**

The purpose of this paper was to assess the exposure of married women via different mass media (radio, television and newspaper.) to Information Education and Communication (IEC) activities on Family Planning and Maternal and Child Health (FP-MCH) and to determine to what extent women were able to recall the contents of FP-MCH messages/information delivered to them. An attempt was made to predict use of contraception on the basis of selected independent variables. A sample of 871 currently married urban Bangladeshi women was used to assess the impact of mass media family planning programmes on current contraceptive use. The data were collected from a nationally representative sample of respondents selected in two stages. The presence of an association had been demonstrated between respondent's reports of having heard or seen messages about family planning on radio, or TV or in newspapers, magazines or posters and contraceptive use. The findings showed that the access to radio among currently married women was high with about 84% of women reporting having access to a radio as opposed to slightly over 58% who had access to a TV at the time of interview. The percentage for newspapers/magazines was low, with only about 11% of respondent claiming access to newspapers/magazines. Reaches of family planning radio messages were found to be higher than family planning messages through television and newspaper respectively. The logistic regression analysis suggested that education, number of living children and current use of contraception were the predictors of mass media exposure to family planning message. The analysis indicated that mass media family planning messages on the radio were more effective than TV. So radio family planning messages were more effective in the context of Bangladesh. Family planning messages should be designed taking into account the culture of the society in such a way that they attract larger eligible audiences.

**301. Marten L. The effect of social interaction on fertility goals and behaviour among women in Bangladesh. *Asian-Pacific Population Journal*. 2002; 17(2): 87-109.**

The objective of this article was to analyze the effect of various forms of social interaction in Bangladesh on the demand for and use of contraceptive. The study used the nationally representative 1993-1994 Bangladesh Demographic and Health Survey (BDHS) and ethnographic interviews of 40 fecund married women. The two measures of demographic change used in this paper are the proportion wanting no more children and the proportion using either traditional or modern methods of fertility control. Basic demographic characteristics that define both women and context, in which the interaction took place, are included as background variables. To make the analysis more meaningful, the respondents were divided into sub-groups sharing definitive characteristics. In the analysis of wanting no more children, women with same achieved family size were compared with women with two, three and four children. These were the critical family sizes where decisions regarding fertility goals were made in Bangladesh today. The result showed that social influence affects wanting no more children in the expected direction but social learning did not. The background variables with the most powerful influence on the desired limit births were age having one or more living sons and region of residence. The strength of the effect of not having a living son increased with family size - even with larger families, many women still expected for a son. In contrast, as family size increased, the regional and residential differences for wanting no more children disappeared. The data support the hypothesis that increased opportunities for social



learning, as measured by some of the variables, increased the likelihood of using contraceptives for both limiters and spacers. The lack of consistent effects for FPW provision of methods could be due in part to the fact that almost all communities had a FPW providing methods. This study supported the inclusion of measures of social interaction in all future studies of fertility. It also suggested that programs promoting family planning could improve their outcomes by actively targeting husband, and by stimulating community discussion through existing formal groups and informal groups.

**302. Nath SR. Youths access to mass media in Bangladesh. In: *Adolescents and youths in Bangladesh: some selected issues- a research monograph*. Dhaka: BRAC, 2006.**

This study aims to explore what proportion of youths in Bangladesh has access to mass media and what is the socio economic co-relation of such access considering only radio, television and newspaper as mass media. Following a four stage sampling procedure separately in eight strata 3,840 households from 268 neighborhood (villages/mahallas) covering all 64 districts were brought under the survey. The study showed that among the growths (aged 15-35) of Bangladesh one third had access to radio, 41% had access to television, and 16.7% had access to news paper of the three media explored, television came out as the highest accessible media to the youths and newspaper to the lowest. Access to newspaper requires certain level of reading ability; otherwise television is a visual media and hence accessible to even illiterate persons. But surprisingly, 48% of the advanced level, 40% of those with 10-12 years of schooling and 14% of those with 13 years or more schooling did not access newspaper during one week prior to interviewing them. Less than 2% of these who did not complete primary education and access to newspaper. Urban youths were ahead of their rural counterparts and the Muslims youths lagged behind their non Muslim neighborhood. Quality of education significantly varies from one group to another. And hence, the people in Bangladesh reach their youth age with differential educational background. Level of education varied according to gender, religion, area of residence, and age of the youths. Access to education not only increased access to mass media. It also helped in reducing gender gap as well as urban rural divide. The study recommended that we should increase access to quality education for all irrespective of sex, area of residence and religion an entry point for increasing access to mass media and elimination of various divides that exists. Further study, more especially ICT should be included to increase exposure and access to mass media for the youths of Bangladesh.

**303. Nessa K; Quaiyum MA; Barkat-e-Khuda. Waste management in healthcare facilities: a review. Dhaka: ICDDR,B, 2001. (ICDDR,B working paper; no. 144).**

This study was carried out to assess the states of management and handling of healthcare waste in Bangladesh and in the global contexts. Healthcare establishments generated a huge quantity of both hazardous and non-hazardous waste. These wastes were generated as a result of diagnosis, treatment, and prevention of research on human and animal diseases. The hazardous waste when inappropriately managed many compromise the quality of patient care. Additionally, the wastes presented occupational health risks to those who generate, handle, package, store, transport, treat and dispose of them. These wastes might enhance environmental pollution and the spread of infectious diseases, including AIDS, hepatitis, tuberculosis, diphtheria, cholera and many others. Proper management of healthcare wastes can prevent cross infection and the spread of epidemics of infectious diseases. Unfortunately, this aspect was completely ignored in Bangladesh. Typically, few individuals working in

healthcare management were familiar with the elements of proper management of wastes. Awareness and knowledge regarding the hazards of improper disposal of medical wastes was lacking at all levels. There were no proper healthcare waste management facilities either in the government sector or in the private sector in the country. There was also a lack of funds to implement safe disposal of health care wastes effectively. Moreover, properly implemented and enforced waste management could have distinct economic benefits. This review would help assist healthcare providers and other support staff in establishing and implementing a programme for the effective management of healthcare wastes. Such a program, when supported by committed healthcare management, would contribute to the improvement of patients' care, promote health and safety of staff and help improve the overall economy. The study findings suggested that wastes should be kept separate from hazardous wastes and each type of hazardous waste should be kept separately in an appropriate container. In addition, there was a need to develop cheap but safe containers for hazardous healthcare wastes to be used in developing countries.

**304. Rahman MM; Kabir M. Knowledge of adolescents on contraception and dynamics of its use. *Health and Population Perspectives and Issues*. 2005; 28(4):164-177.**

The study attempt was made to analyze the knowledge on contraceptive method among the currently married adolescent. This was a cross sectional study conducted in both rural and urban areas of Bangladesh. The married female adolescent aged 10-19 years constituted the study population. A multistage cluster sampling technique was adopted to select the sample. Both quantitative and qualitative study designs were followed to collect relevant data on knowledge on contraception and its pattern to current use. Although adolescent have knowledge on contraceptives, but their use of contraceptives was low. Quantitative data on 1,881 married female adolescents revealed that almost cent percent of the married adolescents were aware of at least one contraceptive method. But the current use rate is low. Multi-variate logistic regression analysis revealed that current age, attitude of the family members towards contraceptive use, marital duration and husband-wife communication appeared to be important predictors of contraceptive use. To meet the family planning and other reproductive health needs of adolescents, field workers' need to make greater efforts to extend their services to relatively younger and childless couples. Efforts on behavioral change communication (BCC) are needed to ensure the participation of young spouses in family planning and other reproductive health services. Another important action to be undertaken for the development of supportive structure at the community and also at the family level is enhancing the educational attainment of females which would help discourage the partner of early marriage and childbearing.

**305. Shahjahan M; Kabir M; Bhuiyan MSA; Rahman MM. Mass media exposure of men and its impact on family planning in Bangladesh. *JOPSOM*. 2004; 23(2): 1-7.**

The study was conducted to ascertain impact of mass media on family planning among men in Bangladesh. It was a descriptive cross sectional study and the duration of the study was January to June 2002. A total of 615 married men were interviewed for this purpose. Data were collected through an interview schedule. The findings of the study showed that mass media and interpersonal communications were the main sources of knowledge of men about reproductive health issues and family planning. The analysis of data showed that 19 percent, 51 percent and 37 percent men had access to newspaper, radio and TV respectively. The findings also showed that 34.1 percent respondents had no mass media and only 10.4 percent

of the respondents had access to all three media. About one-fourth of men reported that both of himself and his spouse decided to use FP methods and 63 percent couples discussed about reproductive health problems. In bivariate analysis of factors associated with currently using contraceptive methods, a significant association was found with reading newspaper daily ( $P < 0.0001$ ). Logistic regression analysis showed that exposed to mass media was important determinants one inter-spousal communications regarding family planning. Messages broadcast in the mass media were a key source of family planning information for men. Family planning programs with a special emphasis on mass media, especially radio, TV and newspapers might have a significant effect on fertility control in Bangladesh.

**306. Shahriar A; Routh S; Bhuiyan MA; Sarker S; Ashraf A. Behaviour change communication needs of community clinics: a study of providers' perspectives. Dhaka: ICDDR,B, 1999. (ICDDR,B working paper; no. 162)**

The study was initiated to assess the behavior change communication (BCC) need for the Community Clinic based service delivery of essential health and family planning services package. Relevant government documents literature and guidelines relating to the HPSP, ESP, Community Clinic, BCC activities, materials and messages of the rural and urban NGOs of the NIPHP were consulted. In assessing the changed communication and promotion needs emerging from the replacement of interpersonal communication carried out by the field workers, brain-storming sessions were conducted with the district and Thana levels health and family planning program managers at Jessore and Chittagong districts. The study findings showed that the BCC activities need to facilitate the attainment of identifying the target audiences and the demised changes in their behavior for the increased access and use of services in the community, clinics identifying appropriate BCC activities and messages for operationalization of the community clinics. Four key target audiences for the BCC activities had been identified through workshops. These were: service providers, service recipients, community leaders and special sub-population, e.g. newly-weds, pregnant women, family planning methods dropout, low-parity couples, adolescents etc. The desire changes in behavior of the four target audiences were summarized as service providers had commitment in the delivery of ESP, offering good behavior to the customers and providing them with best healthcare and services; customers would know the services available from the community clinics, visit the clinics, and co-operate with the providers to receive better services; community leaders had motivation for donating land for the community clinics, forging community ownership over the community clinics, and establishing a functional linkage with the existing community networks to promote the community clinics; and special sub-population with understand the importance of services available in the community clinics and visit to receive them. The workshops proposed 16 types BCC activities like, print, demonstration and electric media, selective interpersonal communication and advocacy workshop. Based on the findings, it was recommended to develop of an appropriate BCC program, incorporating interpersonal communication, print, demonstration and electronic media, as well as advocacy workshops essential for the effective operationalization of the community clinics

**307. Wright C. Bangladesh behavior change communications strategy for contraceptive security. Dhaka: JSI Deliver, 2003.**

The Objectives of this study is contraceptive security exists when every person is able to choose, obtain and use quality contraceptives whenever he or she needs them. For the GOB

and other providers of family planning services and supplies, contraceptive security is predicted on their ability to forecast or estimate the quantity and type of contraceptives required to meet present and future demand, finance and procurement of contraceptives, deliver contraceptives reliably to the end users. Currently, a limited number of activities are being or have recently been undertaken that can be considered BCC for contraceptive security. The June 2002 launch was crucial in building awareness about CS among key stakeholders, and it drew significant news media attention. Smaller-scale, more focused BCC activities and needed to build support for a variety of policy changes, structural adjustments and resource allocations required to advance CS. Contraceptive security lunch recommended use interpersonal communication (IPC) techniques to provide field workers with training in the appropriate counseling of clients. Pursue a mass media campaign throughout the country to educate the public about the desirability and importance of long term methods, place priority on filling existing vacancies of providers at local levels, include in the training for family welfare volunteers (FWVs) IUD client-selection , counseling and insertion in six-month midwifery training and other curricula.

## 2.7 MANAGEMENT INFORMATION SYSTEMS (MIS)

### **308. Anonymous. Health and demographic surveillance system Matlab-volume thirty-three: registration of health and demographic events 2000. Dhaka: ICDDR,B, 2000. (ICDDR,B, scientific report; no. 89).**

This report presented the vital registration data and maternal and child health data of 2000 in Matlab, Bangladesh. These data were collected by the Health and Demographic Surveillance System of the ICDDR,B. The surveillance area was divided into Maternal and Child Health and Family Planning (MCH-FP) intervention areas and comparison areas which received government services. The survey results revealed that in 2000, fertility increased in both areas as compared to 1999. The crude birth rate (CBR) was 24.9 per 1000 and the total fertility rate (TFR) was 2.9 births per 1000 woman in the MCH-FP area and 27.7 and 3.5 respectively in the comparison area. In the MCH-FP area, the crude death rate was 6.8 per 1000 and in the comparison area it was 7.2. In the MCH-FP area, infant mortality rate was 44.0 per 1000 live births and in the comparison area it was 58.0. Child mortality between 1 to 4 years of age showed a slight decrease in the MCH-FP area, from 4.1 in 1999 to 3.9 in 2000, and in the comparison area, it also decreased from 7.5 in 1999 to 6.4 in 2000. Under-five mortality in the MCH-FP area was 58.6 and in the comparison area, it was 81.1. The rate of in migration for the surveillance area increased to a level of 35.1 per 1000 in 2000, and out migration also increased to 48.5 per 1000. The net out-migration was 13.4 per 1000, thus offsetting the rate of natural increase, which amounted to 19.3 per 1000 in 2000. The overall rate of population growth was 0.6% per annum. The marriage rate was 14.7 per 1000 population and the divorce rate was 88.2 per 1000 marriages.

### **309. Anonymous. Health and family planning management information systems in BPHC and supported NGOs. Dhaka: BPHC, 1999.**

The objectives of the study were to consolidate the information retrievable from nine validation surveys; to analyze the consolidated information in order to review the overall accuracy of the data collection, recording and reporting systems in the NGOs; to assess MCH and FP performances of NGOs; to assess the overall status of the NGOs in terms of MIS strengths and weaknesses and to suggest measures for the improvement of MIS in all funded NGOs. Nine of the BPHC funded NGOs were randomly selected for MIS validation surveys. Strengths and weaknesses and errors in coverage, recording and reporting systems, as well as MCH-FP performances were examined for each of them. Although results varied from NGO to NGO, their compilation revealed many similarities between the NGOs. Strengths as well as problems were often similar. Issues were discussed and recommendations were made. The NGOs themselves could easily implement some of those, while others would require BPHC's and possible external assistance. Record errors were assessed comparing register data with survey data for ELCOs whose names were recorded in the FWA Registers. All NGOs over-recorded the number of FP users. For 4 NGOs, the error was 5% or less, for 3 NGOs the error ranged between 9% and 12%, and 2 NGOs had over-recorded users of modern FP methods by about 21 percent. There were great differences between survey and recorded information for MCH information. For example, in one NGO 50% of pregnancies and 50% live births in two NGOs were not recorded. Services to pregnant and post-partum women were largely under-recorded. Except for the number of male and female 0-5 year old children which was overall accurate, other pieces of child health information such as still births, child deaths and immunization performances were largely under-recorded. Errors were also found in

complication and reporting of information, though to a lesser extent. Based on the findings, recommendations were made to assist BPHC and the NGOs improve their information systems during the upcoming new project phase. Recommendations was however, to be reviewed based on the new Health and Population Sector Programme of the Ministry of Health and Family welfare, and the BPHC log-frame for the funding period. NGOs needed to ensure that registers updated during each round of field visits. Expansion of the MIS and inclusion of new elements of management with inter-linking the various sub-components was a logical step to improvement and should be considered in the future.

**310. Dey KC; Khan MJ; Begum N; Khan T; Islam MS; Khan MN. Evaluation of networking with Grameen Bank for population and development. Dhaka: FPAB, 2002.**

The major objectives of the study were to assess; i) the socio-economic cartelistic of the target group; ii) the level of awareness of the project population in relation to RH and FP; iii) the level of practices of the target population in relation to MCH services; iv) to assess the health habits of target group; v) the KAP of STDs/HIV/AIDS; vi) the strength and weakness of the collaborating agencies and; vii) the scope of sustainability of the project after FPAB's phasing out. The project started in 1997 was linked to FPAB's strategies of providing quality RH and FP services through static and satellite clinics. This evaluation study was carried out at three locations of Grameen Bank (GB) at Noakhali covered under the project on networking of FPAB with GB for population and development. A sample of 300 fertile couples, GB members were selected for interviewed. Beside this, FGD with service providers, review of relevant literature and observation of evaluation team were introduced as data collection methods. The findings of the study shows that the mean age at marriage in the baseline survey was 15.2 and mean age of fertile couplers was 29.2 years, 9% of the teenagers were married. The study revealed that majority of respondents (57.7%) had formal education; almost all were housewives except a negligible exception. On an average the respondent had 2.9 living children that were lower than national average. The average duration of married life was 8.8 years. About seventeen percent did not have any births during last one year and in contrast 4.7% reported infant death in the same period. As per data, 99.3% knew some thing about FP and 51.7% had knowledge about STDs, 41.3% about AIDS and 22.7% could mention gonorrhoea. Regarding FP methods, oral pill was universally known (96.3%) followed by condom (79.3%), injectables (49%), Norplant (25%), tubectomy (21%), IUD (16%), vasectomy (7.3%) and others. Among the current users of contraceptives, 30.8% claimed to have side effect complication. The major side effects were identified to be physical weakness (17.8%), headache (8.6%) etc. Data also showed that most pregnant women with their last birth at home (88%) attending by the most untrained TBA and these born child to have immunization of under-5 years of age. Only 19% had necessary of ANC during last pregnancy. BCC activities of the project were not satisfactory that should be given a great emphasis to improve it. It was evident from data that the project workers made irregular home visit in some caused and a little over half of respondents were found to be satisfied with the behavior of project activities. Thus study recommended that the project activities should be revised based on findings of the study as well as the present status and needed of their fertile couples, adolescents and youth and the community as a whole.

**311. Jasim-uddin M.; Kabir H; Mahbub-ul-Alam; Nowsher-uddin AH; Ashraf A. Assessment of the record-keeping and reporting system of the Bangladesh Health and Population Sector Programme at the union level. Dhaka: ICDDR,B, 2002. (ICDDR,B working paper; 155).**

The overall objectives of the study were to assess the extent to which the new systems were able to support the management of patients at the UH & FWCs/ RDs and SCs and to identify the changes needed to make the new system user-friendly for the service providers. The monitoring was conducted in randomly selected 36 UH&FWCs/RDs of Jessore district during February 2000- March 2001. A formatted monitoring tool was used for recording the observed and reviewed information. Besides, in-depth interviews and focus group discussions (FGD) with the service providers were also conducted to collect data. It was observed that the new record keeping and reporting tools were used, and fulfilled the record-keeping and reporting requirements at the union level of both districts. A less number of tools were used compared to the previous system and therefore, users-friendly and easily manageable. The service providers committed less than 10% omissions when they were observed by the FROs during service delivery and the rate of omissions increased to a high as 34% in the selected section when they were not. The workload during peak hours, inadequate training and inadequate supervision contributed to such omissions. Although the UMIS Unit had done the voluminous task of integrating the two systems successfully, the service providers needed time to get acquainted with it. With systematic and supervisory support, the extent of omissions could be reduced gradually. One-day training was not sufficient for them. So, there should be a provision of refresher training for them.

**312. Jasim-uddin M; Alauddin M; Sirjuddin AKM; Tunon C. Capacity building of health managers for local-level planning: lessons from rural Bangladesh. Dhaka: ICDDR,B, 2000. (ICDDR,B working paper; no 139).**

The overall objective of this study was to document processes involved in the implementation of action plan as an integral part of the management training and to assess the effects of the implementation of the action plans on the improvement of management performance in the selected Upazilas of Bangladesh. During February-June 1999 information from the government and NGO staff in 8 (5 study and 3 comparison) purposively selected Upazillas were collected. Information was collected through (i) in-depth interviews, (ii) observation of field activities and meetings at the Upazila and Union levels, and (iii) focus-group discussions. Data from the minutes of meetings, registers, and reports were also collected and analyzed. The findings of the study revealed that 85% of the Union levels supervisors and all the FGD participants, i.e. field worker, were aware of the new action plans after returning from the training course. The field staff, however, had inadequate knowledge about targets included in the action plans. The field staff and the trained managers agreed that the effectiveness of the orientation sessions was hindered due to lack of funds to meet transportation and other expenditures. Data from the comparison areas showed the status of family planning and immunization in the absence of a training programme. The reports also showed a decreasing trend in the performance of Upazilas with the trained managers in later months. The findings showed that the staff at all levels reported positive attitudes toward the performance rating system. The field staff claimed that the system motivated them as it enabled them to compare their respective local performance. The staff members also reported that their orientation or the implementation process of action plans was not sufficient. This might be due to the fact that there were gaps in knowledge about the targets and goals in the action plans and also in

the understanding of strategies to attain these goals. Neither were joint supervisory visits always feasible and nor was the practice of joint ESP reporting introduced in any Upazila. The implementation of action plan was affected due to lack of follow-up from the district and national level supervisors. The future training programmes should, therefore give prior attention to involve responsible persons from higher levels to monitor follow-up and review the employment in process of action plans. More effective orientation/training for the field staff on relevant components of the action plan is needed. Therefore, to address the plan of HPSP, community leaders should be involved with the action planning and implementation process at the Upazilla level and below.

**313. Kabir H; Mahbub-ul-Alam; Nowheruddin AH; Chowdhury ZH; Ashraf A. Assessment of the record-keeping and reporting system of Bangladesh Health and Population Sector Programme in the community. Dhaka: ICDDR,B, 2001. (ICDDR,B working paper; no. 150).**

This study was conducted assess the status and use of the new record-keeping and reporting system. Nine Field Research Officers of the ORP monitored the record-keeping and reporting activities of the Health Assistants and FWAs during February 2000-March 2001 at the community level. During monitoring, several methods were used for collecting data on the use of designated registers and reporting formats in the two districts. The methods included direct observations, focus group discussion (FGD) validation meeting and review workshops in each district. Data collected showed that the service providers had accepted the new system. The new record keeping and reporting tools helped them perform their duties and responsibilities and reduced their workload to a great extent. The majority of them could correctly complete their record keeping and reporting tools. Omissions in felling-in process of all the respective record keeping and reporting tools occurred included: putting tick mark instead of actual number, use of self made codes and non-compliance of instructional the manual. Continuation of the number of registers and cards from the previous system, including inadequate training and supervision contributed to the occurrence of remissions. The follow-up register was a useful tool to plan weekly follow up visits for the drop-out and unwilling cases. The service providers and their supervisors did not properly understand its importance and usefulness. Yearly collection of population based data under the Geographical Reconnaissance (GR) update provided an area profile with denominators to evaluate the progress of selected ESP indicators a specific year. In addition to UMIS tools, the HAs and FWAs used several other tools in the functional CCs, the use of additional tools differed in terms of numbers between the ORP area and the non-ORp area. No service providers could tell exactly about the utility of additional tools and registers. The design of these tools was not uniform in both the areas. The use of additional tools needed close examination, and attention should be paid to bring uniformity and to reduce the workload of service providers. The recommendations of this study could be implemented in phases during new replenishment of the UMIS tools, keeping in pace with the transition in service delivery from the old home-based system to the new CC based system

**314. Mahbul-ul-Alam; Kabir H; Nowsheruddin AH; Sirajuddin AKM; Ashraf A. Assessment of yearly geographical reconnaissance of the Bangladesh Health and Population Sector Programme. Dhaka: ICDDR,B, 2001.**

The overall objective of this assessment was to examine the operational aspects of the geographical reconnaissance (GR) update, and also to examine the quality and extent of use of



data generated through the GR at various levels. A number of methodologies were employed for this assessment. The ORP deployed nine Field Research Officers to monitor all activities relating to the implementation of the new system in both the districts. During February-July 2000, the FROs observed the activities of the female FWAs and HAs during the GR update 2000. They used a monitoring tool to record the activities performed by the HAs and FWAs during the GR update. An open-ended questionnaire was administered to the selected supervisors of FWAs and HAs to collect data on the use of GR data for operational planning. Other relevant literature with information on health and family planning related issues in Bangladesh were also reviewed. The results of the findings revealed that there were variations in the percentage of children aged less than 5 years and in the coverage of DPT3, measles, and vitamin A was higher in the GR 2000 Thana that of the surveillance and nation-wide survey data. Similarly, the variation was large in the proportion of currently married women of reproductive age and in the use of family planning methods. A tendency of higher reporting of contraceptive use in the GR update 2000 was observed compared to nationwide survey data. One of the key demographic indicators, crude death rate in particular, suffered from gross under reporting. GR under taking was a time consuming endeavor. The voluminous data appeared to be selected only to fulfill the reporting requirement of the national level. Despite opportunities the GR data were either little used or were not at all used at the local level. The study suggested that the process of reviewing selected key indicators generated through the GR by the local managers should be institutionalized. The local managers needed to be adequately oriented to make best use of the data, which was collected and owned by them. So, authority should be given to them to make required adjustment in the design of strategies for conducting GR in a better way, which could be used for improving the delivery of Essential Services Package (ESP).

**315. Nowsher-uddin AH; Kabir H; Mahbub-ul-Alam A; Alam S; Ashraf A. Assessment of the upazila level record keeping and reporting system of the Bangladesh Health and Population Sector Programme. Dhaka: ICDDR,B, 2002. (ICDDR, B working paper; 154)**

The overall objectives of the study was to assess the status of introduction of all record keeping and reporting tools provided by the UMIS unit at 22 UHCs of Chittagong and Jessore districts. Nine experienced Field Research Officers (FROs) of the ORP monitored the implementation of the new system. The methods of monitoring the implementation of the new system consisted of review, interview, observations, meeting and review workshop. The result showed that all users appreciated the new system. Some key milestones were generated through annual geographic reconnaissance (GR). The indicators included CPR, proportion of users of different contraceptive method, proportion of women received tetanus toxoid, percentage of birth attended by trained providers and by place of delivery etc. There was an overall omission of 32% in recording the serial numbers of patients, 11% in registration numbers, 18% in the purpose of visit and 34% in the treatment given. To strengthen the new system and to make it more user-friendly and supportive to delivery of the ESP, a close review of both approved and additional record-keeping and reporting formats was required. Attention should also be paid for integrating the record-keeping and reporting formats of the vertical programmers, such as tuberculosis and leprosy, to be a part of mainstream of the UMIS. Adequate orientation of the managers, service providers and concerned staff was important for establishing the system. The willingness of the managers to use the full potential of the new system for management and planning purposes at the local level was also crucial.

**316. Sarker S; Islam Z; Hossain SAS; Saha NC; Routh S. Baseline assessment of indicators for monitoring ESP delivery in rural areas of Bangladesh: findings from a cross sectional study. Dhaka: ICDDR, B, 2001.**

The objectives of this study were to: (i) provide reliable estimates of ESP parameters (e.g. fertility, safe motherhood and child immunization coverage, contraceptive prevalence rate, etc.) of a probability sample of the project area of implementing intervention activities; and (ii) provide a baseline estimate of health and family-planning indicators to monitor and evaluate the effectiveness of the ESP operationalization in the project area. The baseline household survey was conducted during October 1998 - March 1999 and included 9,298 households (2,950 in Abhoynagar, 3,883 in Mirsarai, and 2,465 in Patiya) with 50,519 populations in all the unions under survey. Data were collected from currently-married women of reproductive age (MWRA) of 15–49 years who were included as respondents in the survey and who responded on behalf of the household. The survey was conducted within the panel sampling frame and design, adopted by the project longitudinal surveillance in the projected area. The age structure of the study population showed that only 5–11% of currently MWRA were aged less than 20 years. The proportion of women per stratum gradually declined with age, beginning with the 25–29 year cohort, and this trend was commonly observed in all the areas. Over half (53%) of the respondent familiars had 1–2 child in Abhoynagar compared to about 37% in Chittagong area (Mirsarai and Patiya). Most women (89% in Abhoynagar, 72% in Mirsarai and 69% in P) were married before they reached 18 years of age. The proposition of getting married after 18 years was relatively more in Chittagong area (23%) than in Jessore area (9%). The total married fertility rate of the population in Abhoynager was 2.6 and in Mirsarai and Patiya, it was 3.5 and 3.4 respectively. Knowledge of at least one contraceptive method was universal among the women of the study area. Overall, 64%, 44% and 51% of the currently married women in Abhoynagar, Mirsarai, and Patiya respectfully were using a contraceptive method during the survey. Modern method was much preferred. Household visits by the Govt. health workers were the most frequent supply of contraceptive, except in one union of Abhoynagar. The proportion of unmet need was 15% in Abhoynagar in both who wanted child after two years and who did not want anymore child. Of those who received antenatal care in last year 10% - 16% paid five or more visits for antenatal care (12% in Abhoynager, 10% in Mirsarai, and 17% in Patiya). Twenty-seven percent to 47% of the pregnant mother used some sort of postnatal care (PNC) services. Data showed that child immunization by 24 months attained a universal level (87% in Patiya, 88% in Mirsaria and 96% in Abhoynagar). The two weak prevalence of acute respiratory infection was noted as 43% in Abhoynagar and Patiya and 58% in Mirsarai. The study revealed certain inter region and intra-region differentials in fertility, contraceptive use control need for family planning, childhood immunization, etc. However, this report provided a benchmark for the ESP indicators to monitor the progress of ESP delivery system in the project area over time.

## **2.8 MCH-FP PERSONNEL EVALUATION**

### **317. Anonymous. Community acceptance and utilization of trained TBA's, their role for the reduction of maternal morbidity and mortality ratio in rural Bangladesh: final report. Dhaka: Directorate of Family Planning, TBA Training Project, 1999.**

The study was conducted with the objective of improving safe motherhood by increasing referral of all pregnant women to institutional facilities. For the study, a three-stage stratified sampling strategy was followed with mothers as the ultimate sampling units. The scheme was more advantageous than simple random sampling because of the expected variability between strata. About 520 trained TBAs and 300 non-trained TBAs were interviewed. The non-trained TBAs were older than the trained TBAs by 5 years on the average. Illiteracy was also more prevalence among the NTBAs. Use of FP method among the TTBAAs was higher than among the NTBAs. The trained TBAs had working experience of 11 years, while their counterpart NTBAs had 17 years experience in this service. Despite such a long involvement of the TBAs, they were found to possess poor knowledge on the management of pregnancy related problems. More TTBAAs than NTBAs were aware of the fact that TT vaccination was given to prevent mothers and children from Tetanus. NTBAs were found to possess extremely poor knowledge on the determination of EDD. In recognizing the sign and symptoms of pregnancy, the TTBAAs were reported to have much better knowledge than the NTBAs. This appeared to be a direct effect of the TBA Training received by the TTBAAs. Correct advice on food health and hygiene were more prevalent among the mothers served by TTBAAs than among the mothers served by NTBAs. TTBAAs were more aware of the fact that prevention is better than cure. As a result, more TTBAAs (95%) than NTBAAs (71%) were in the opinion that vaccination is a must to prevent mother and their children from immunizable diseases. The results of the mothers' survey by and large, substantiated the findings of the TBA survey. On a query to whether the TBAs provided any advice to them during their pregnancy period, nearly three-fourths gave positive response. This was 50% for NTBA mothers. Regarding vaccination, more TTBA mothers than NTBA mothers received advice. The difference was statistically significant. As reported by the mothers, TTBAAs were more helpful to provide antenatal advice to mothers than the NTBAAs. Rural women still depends more on traditional birth attendants. As reported by the mothers they did not make such distinction between a trained TBA and a non-trained TBA while they really needed services. This happened perhaps because of the fact that their mothers and grand mothers all had their births delivered by village dais and in most cases that dais were untrained. The findings of the study suggested that the refreshers training for TBAs should be arranged to update the knowledge and skills on a routine basis.

### **318. Anonymous. A report on performance of the TOT and training programs for the scout patrol leaders on primary health care and community development. Dhaka: MOHFW, LIP & Bangladesh Scouts, 2004.**

The objectives of these TOT programs were to equip the TOT participants with necessary knowledge and skills on health care and other community development activities. They will, in run, train the scout patrol leaders/rover mates on the same areas. The methodology was adopted for the TOT programs: call-up notice were served to 648 TOT participants, TOT participants were trained in 19 batches at 09 training centers, training was conducted by a group of six resource person for each center: National Scout representatives, divisional commissioner, Deputy commissioners of host district, Deputy Director. The TOT programs were conducted through class lecture followed by discussion session. The overall scores

attained by the trainees in the post tests are very encouraging and those indicate the overall improvement in the level of knowledge. The percentage of trainees scoring less than 50.0 percent in the pre-tests was reduced to 8.0% only in the post-tests. Similarly, 10.0% of the trainees scoring 71-90.0% in the pre-tests but in the post-tests, one fifth of the trainees scored more than 90.0%. Moreover there have been division-wise variations in the attainments of scores in cases of attaining more than 90.0% > It varied from 4.0% in Dhaka to 43.0% in Rajshahi followed by Sylhet (29.0%) and Barisal (10.0%). There had been almost uniformities of scores, 71.0 to 90.0% obtained in the post-tests in all the six divisions. This clear evidences the successful conduct of this training program in terms of increased knowledge of the participants. These types of training programs should be organized with reasonable time in hand so that call-up notice can be served in time and suitable training venues can be selected, the selections of schools/colleges be based on having functional scouting programs, as far as practicable, the Directorate of Family Planning be requested to make at least one officer UFPO/AUFPO or MO(MCH-FP) available in LIP upazillas where vacancies exist, future training methodologies be planned and used in a way to make the training program more attractive, informative.

**319. Aroends-Kuenning M; Hossain MB; Barkat-e-Khuda. The effects of family planning worker's contact on fertility preferences: evidence from Bangladesh. *Studies in Family Planning*. 1999; 30(3):183-192.**

This study investigates how the decline in desired family size is related to visits from family planning workers for three intervals: 1982-85, 1985-90, and 1990-93. By using of logistic regression analysis, the number of rounds during which women received visits from family planning workers. Longitudinal data collected from Bangladesh 1982 to 1993 shows that women's desired family sizes have declined dramatically. The study findings revealed that the women surveyed who said they wanted no more children, wanted more children, or that the number of children they had was "up to God" according to the number of their living children. The proportion of women who responded "up to God" declined from 14% in 1982 to 2% in 1993, and their response is most common for women have found living children. Family planning workers visits might provide young women with the support they need to express and act on their fertility desires (Simmons et al. 1988). The impact of a family planning program on fertility preferences could be measured, if after contact with family planning workers, young women were more likely to say that they wanted no more children than to give a fatalistic answer or to say that they wanted additional children. During the period of the four surveys, the proportion of women with two or more living children who indicated that they wanted to stop childbearing increased. Women's behavior reflected changes in their fertility preferences. Women's fertility decreased for all age groups between 1982 and 1993. The fertility decline was evident although small, even in the 1982-85 and 1990, coinciding with the largest changes in preferences and with the increase in family planning workers visits. The findings of the study suggests that family planning workers visit have little direct effect on fertility preferences in rural Bangladesh, specifically on the transition in women's preferences from wanting more children to wanting no more children.

**320. Bhuiyan RH; Rahman S; Rahman QM; Kabir H; Hossain M. Evaluate the level of knowledge, skill and efficiency of service providers and field workers regarding family planning service delivery. Dhaka: NIPORT, 2006.**

The study was intended to identify the level of knowledge, skill and efficiency in all level workers to identify the problems associated areas of activity for mitigating the inside into the problems of family planning programme in Bangladesh. The data were collected from the primary, secondary and tertiary sources. Both the quantitative and qualitative methods were used for collection of the data. Data from published report, newsletter and journal were also taken off. The five year studies where out of 1411 SACMO, only 6.3% said they received Vaccine of measles. Majority (55.5%) of the MO-MCH, 66% MO-FW, 33.3% and 13.2% JOMBO received the gynecological and obstetrical training with EDC. Out of 36 MOMCH, 55.5% said the training increases the efficiency, 69.4% pointed out need more time for the duration of training to understanding the basic concept of the respective topic. More than 70% MOFW said their responding office is MO and 20.8% said Sr. FWV. Out of 36 MO (MCH-FP), largest majority (83.3%) opined that they have the responsibilities on maternal and child health and nutrition out of 36 MO (MCH-FP), highest majority (77.7%) to advise nutritious foods and vegetables. Seventy eight percent service providers noted that they have the 78% knowledge on physical materials all sectors of family planning, MCH, nutrition and health education. More than 75% FWV and 74% SACMO said that aged couple can use the contraceptive method for permanent protection of subsequent unwanted child. All the MO (FW) said injection is best for long-term protection of child. About 78% MO (MCH) said the Norplant is safe for five years period in the protection of unwanted child. Condom can play a vital role in preventing HIV/AIDS. All of the MOs (MCH-FP) noted that IUD displaced most of the time but only 8.3% agreed this opinion. Most common problem of injection is cases of bleeding. Oral pill, condoms also cause some side effects for almost every user. The study suggests that further training on MR, RTI, and STI, IUD & ENT treatment of mother and child care and management training is felt. Almost all of them require EOC training, modern pathological lab, adequate supply of medicine and better transport facilities.

**321. Chowdhury S; Chowdhury SF. Skilled birth attendance at delivery. *Bangladesh J Obstetric and Gynaecology*. 2002; 17(2): 67-71.**

This paper emphasized on the need of having a skilled birth attendant at delivery to reduce maternal death. The maternal mortality and morbidity was unacceptably high in Bangladesh. The Maternal Mortality Ratio (MMR) was reported as 300 per 10,000 live births in Bangladesh in the year 1998. There was no consistent improvement in the MMR in Bangladesh during the last decade. Eclampsia, obstructed labour, hemorrhage, and septic abortion were responsible for the majority of the maternal deaths during the last decade. In Bangladesh, most of the reproductive women lived in the villages and most of them depend on trained or untrained Traditional Birth Attendants (TBA) and relatives for their child birth and other care. In a report of Bangladesh Breastfeeding Foundation in 1999 showed that 91.6% delivery in the rural area occurred at home of which 80% births were assisted by relatives and untrained traditional birth attendants. Only 16% of mothers reported to have their deliveries conducted by trained health personnel such as doctors, paramedics and trained TBAs. The author suggested; i) to train authorize and equip midwives, nurses and community physicians to provide all feasible obstetric services needed within community especially emergency intervention and to prescribe medication. Establish systems for training supervisors and supporting these providers, and for linking them to higher level health facilities for back-up;

ii) to upgrade, establish and expand comprehensive midwifery training programmes that include life saving skills for dealing with obstetric emergencies, and iii) to create clearly-defined protocols for routine care and the management of complication. Establish systems for supervising and supporting skilled birth attendants, and for emergency referral and treatment.

**322. Gazi R; Alamgir S; Nazrul H. Study of depot-holders in rural service delivery partnership: implications for selective visitation. Dhaka: ICDDR,B, 2000. (ICDDR,B working paper; no. 140).**

The present study was designed to select information in the current work-load of DHs, the community's perceptions and expectations of DHs' activities, and finally to generate information to finalize selective visitation strategy by the DHs. The study was conducted in 5 selected areas of 5 Technical Assistance units of the RSDP during May-July 1999. The study adapted a rapid appraisal technique that included free listing, ranking, social mapping, and daily time-use assessments. Data were collected through 40 in-depth interviews with the DHs and 10 group discussions with women. Information was also collected through 3 group discussions with the community Mobilizers (CMc) informal discussions with health workers (3 FWAs and 3 FWVs), and observations of 3 satellite clinics. The majority of users reported at the DHs and satellite clinics met most of their family planning needs. Woman who belonged to the no-user group could not always specifically identify the local DHs, but were aware to a large extent, what services the DHs provide. Almost all the participants preferred the DHs as the source of family planning supplies because of their easy accessibility and credit options. Some users preferred to collect methods from FWAs/FWVs because they could get them free of charge. Both users and non-users reported that it would be helpful if they could obtain common drugs from the DHs for simple health problems. The non-user women were asked the reasons for refraining from using family planning methods because, they were practicing safe period contraception, believed that they were not fertile, fear of side effects, lack of knowledge about suitable methods for them etc. However, most non-users could be potential clients for the DHs. There was a wide variation in number of catchment households by the DHs varying from less than 100 to 500 households. The working areas of the DHs were usually not clearly defined. In one area, there was a duplication of satellite clinics by local NGO and the government workers. On an average, DHs visited clients, houses for 3 days a week to motivate them to come to the satellite clinics for antenatal care, child immunization, injectable methods of family planning, and other general health service. The study recommended that selective visitation by the DHs to selected clients might require: i) clear demarcation of the working areas; ii) an effective, convenient and uniform record keeping system; iii) a simple work plan for targeting selected clients; and iv) more training for DHs for distributing additional commodities.

**323. Hossain, MB. Analyzing the relationship between family planning workers' contact and contraceptive switching in rural Bangladesh using multilevel modelling. *J Biosoc. Sci.* 2005;37:529-554.**

The purpose of this study was to examine the association between outreach workers contact and contraceptive switching and upon the risk of an unintended pregnancy. Using longitudinal data on contraceptive use from the Operations Research Project (ORP) of the ICDDR, B Bangladesh multiple regression life table analysis and multilevel discrete time competing risk hazards models were used to estimate the cumulative probabilities of switching to an alternative form of contraceptive use after a women engaged in a discussion with an outreach

worker. After controlling for the effects of socio-demographic and economic characteristics, the analysis revealed that family planning outreach workers contact with women significantly decrease the risk of transitioning to the non use of contraceptives. This contact also reduces the risk of unintended pregnancy. Family planning workers contact with women is associated with the increased risk of a women switching from one modern method of another modern method. The study results indicated that the side effects and other method related reasons on the two primary rebukes for contraceptive discontinuation to rural Bangladesh. This research suggested that contraception use increased as well as prevalence rate increased.

**324. Jonwitz B; Holtman M; Johnson L; Trottier D. The Importance of field-workers in Bangladesh's family planning program: the high cost and low quality of services indicate that other models of service delivery need to be considered. *Asia-Pacific Population Journal*. 1999; 14(2): 23-35.**

The purpose of the article was to know what the field-workers do in their interactions with clients to motivate them to adopt and continue to use contraception and whether the clients value those interactions. Data from field-workers observations were used to determine if field-workers provide information relevant to the client's method use status. Three separate sources of data were used to develop the analysis. The first data set provided information that was as part of a study to calculate the costs of both the clinic and home service delivery programme of the government. A second data set provided information on the perspective of the field-workers' clients. A third source of data provided information on willingness and ability to pay for doorstep delivery of contraceptives in two rural divisions of Bangladesh. Using data on observations of field-workers which were collected as part of the cost study developed a score based on the number of possible discussion and activity items that might be covered in various types of family planning visits. An aggregate FP/MCH score was then calculated for each woman using the number of items in the component scores as weights. The impact of length of visits on the aggregate score was then assessed for various subgroups of clients using Pearson's co-relations. Data from three independent studies indicated that the length of client-provider interactions was short. The percentage of visits in which various family planning and MCH topics were discussed and that was low. The findings also showed that, even poorer quality of care services than those recently reported by Koenig and others (1997). Women reported that visits were short (4% reported that visits were 5 minutes or less). They also reported that visits often did not involve discussions of family planning methods (26%). Thus, the result indicated that field-workers were not doing a good job in motivating women to adopt contraceptive use. In conclusion, the government of Bangladesh has two choices, either concentrated its resources on improving the quality of the field-worker programme, or it could be changed the service delivery model.

**325. Routh S; Jahan SA. Selective home visits for motivation: evidence from the urban intervention on non-users of family planning. Dhaka: ICDDR,B, 2000. (Working paper; no. 136).**

The study was carried out to develop a systematic approach to effectively target the non-users of modern family planning methods through segmentation analysis to: (i) design and test strategic based on home visits to motivate the selected target sub-populations; (ii) to examine the effects of selective visits on acceptance of modern family planning methods among the corresponding non-users. The intervention was developed and field-tested within the operations research on alternative service delivery strategic for MCH-FP services. In

partnership with the relevant government agencies and the Concerned Women for Family Development, the study was conducted in two areas of Dhaka City from 1996 to 1997. The selective home visits for motivation produced encouraging results in terms of new acceptance among the non-users of modern family methods. Both qualitative and quantitative methods were used for analyzing the effects of the selective visitation approach. This study showed that it was possible to segment to population and focus on the resulting target population. Moreover, it showed that the information to do such an analysis was available with the FRS in their couple registers. Thus a clinic-based service delivery strategy, complemented by selective community based activities performed by reduced number of field-workers, proved to be an effective approach. The selective home visitation approach made it possible to reduce the number of FWVs by 40 percent findings from the observations of field workers that they spent about four hours in the community to visit homes. Prior to the intervention, a FW visited on average 22 clients every working day. During the in-depth interviews, 24 new acceptors expressed their satisfaction with regard to the intervention approach. Of the 24 acceptors, 11 adopted pills, another 11 condom, one IUD and a female sterilization. Non-users of modern family planning methods due to post-partum amenorrhea and pregnancy were two groups that the FWVs considered prospective and easier to convert. The intervention findings suggested to undertake community-based promotional and motivational activities targeted toward selective sub-population to make the clinic-based service delivery strategies effective. In future involvement of nominally paid community volunteers could be explored to perform this activity.

**326. Saha T. Bangladesh service provision assessment survey 1999-2000. Dhaka: NIPORT & MEASURE DHS+, ORC Macro, 2002.**

The main objective of this survey was to assess the strengths and weakness of reproductive and child health services provision including i) family planning and contraceptive options, ii) maternity and delivery care, and iii) treatment of childhood diseases. The study was carried out in conjunction with the 1999-2000 BDHS, covering 341 clusters. The survey instruments used both standard and uniquely designed questions for data collection. The report presented data on various indicators of the availability and quality of reproductive and child health services in 1999-2000 from 550 government and 262 non-government health facilities in Bangladesh. In addition, data were presented on findings from interviews with 656 government providers (FWVs and SACMOs) and 253 NGO health personnel, as well as 566 government and 103 NGO field workers. Major findings presented information on indicators of the availability and quality of reproductive and child health services at government and non-governmental health facilities and other services. It was found that more than three-quarters of the BSPA facilities provided a full range of reproductive and child health services that was the most uniformly offered in all types of facilities. Eighty-five percent of the facilities reported having outreach services in which facility staff visit villages on a regular basis and organize satellite clinics to deliver services. Government facilities such as Upazilla health complexes, union health and family welfare centers, and rural dispensaries provided services to a larger number of outpatients than non-governmental health facilities. Facilities of trained and competent providers were needed to provide high quality health care services. About 90% of providers and two-third of the field workers had basic training. Most of the providers (80%) and field workers (90%) provided child health services. Also majority of them offered family planning services. About 90% of Ouches were providing sterilization and IUDs. The providers and fieldworkers for family planning services offered several methods.



Practically all UHFWCs and 85% of the UHCs and NGO facilities provided antenatal care. Eighty-five percent of the facilities offering child health services had an out reach program. The finding would be helpful and valuable for policy formation and program planning of the health and population sector program (HPSP).

## 2.9 WOMEN IN DEVELOPMENT

**327. Ahmed MK; Ginneken JV; Razzaque A; Alam N. Violent deaths among women of reproductive age in rural Bangladesh. *Social Science and Medicine*. 2004; 59: 311-319.**

This paper was initiated to investigate the levels and trends in mortality due to violence in women of reproductive age and the social and demographic factors associated with such mortality. The study took place in Matlab, rural sub district in Bangladesh between 1982 and 1998. The data were furnished by longitudinal population based demographic surveillance system located in that area. A case control design study was used to identify factors associated with death due to violence, and data from death registration forms were analyzed. The death rate due to violence defined interims of suicides and homicides was higher among women than men. Death rates from violence remind at the same level during the study period while death rates from other cause decreased. Young not yet married women were a high risk group with respect to death from violence. Oppressions, physical and mental abuse by husbands and relatives often preceded suicides and homicides. The disadvantaged position of women in Bangladesh society is the key underlying social cause of the violence out occurred. In order for violence against women to decrease, improvement in the social position of women is essential. The study results suggested that more data are needed on existence of various forms of violence in Bangladesh society and their impact on mortality, morbidity, physical and mental week being. Further studies should also be undertaken on the mechanisms and processes operating at various level of Bangladesh society conducive to violence against women.

**328. Anonymous. Report on baseline survey of the project on gender based violence during pregnancy. Dhaka: FPAB, 2006.**

The objectives of the study were to explore the extents of knowledge, attitude and practice in gender based violence among different population groups (married women ageing up to 49.0 years including pregnant women and married males aging up to 55.0 years as primary target groups, adolescents' influential persons and community leaders as other targets. Under quantitative method, primary data were generated by means of interviewing 240 married women and another 240 adult males by using a structured questionnaire. The study revealed that among the total respondents with secondary education was seen to be the highest (25.6%) whereas, 10.4% constituted no education group. In combined group business constituted the highest 19.8% more than the former group of male and female, 76% among mixed group of male and female, 76% discovered to see a female was beaten. Husband was seen as the male perforators in the highest 99.2% of the cases. Hand/leg/pulling hair revealed as the highest 98.9% of the females and 98.4% of the male respondents. Delays in cooking/breaking materials were other causes of torture. About 61.4% of the female respondents reported beating of the pregnant whereas 34.4% of the male respondents endorsed that about 72.2% female reported <2 number of victims beaten during pregnancy. About 99.6% of the female respondents and 92% male reported to see females psychologically abused. Vast majority (99.1%) of the female and male (96.9%) described that the place of fortune was own house at fathers house and most often at won time. As per the statements of the respondents, local govt. is the main source of assistances. About 92.9% of the females reported to see females sexually abused by bad proposal, eye contact, vulgar messages etc. About 72-80% females are tortured both physically and psychologically for the birth of crippled or mentally retarded baby and compelled to do hard work and in-adequate rest and leave them without any medical help. The

study findings recommends that the concerned authorities should take strong steps to stop dowry, spread of education should be assured, awareness among the women are to be created, social movement should be created to stop this violence, financial support is needed to make women self reliant and to establish their other rights to make their lives much more smooth going.

**329. Bates LM; Schuler SR; Islam F; Islam K. Socioeconomic factors and processes associated with domestic violence in rural Bangladesh. *International Family Planning Perspectives*. 2004; 30(4): 190-199.**

Although the pervasiveness of domestic violence against women in Bangladesh is well documented, specific risk factors, particularly those that can be affected by policies and programs, are not well understood. In 2001–2002, surveys, in-depth interviews and small group discussions were conducted with married women from six Bangladeshi villages to examine the types and severity of domestic violence, and to explore the pathways through which women's social and economic circumstances may influence their vulnerability to violence in marriage. Women's odds of experiencing domestic violence in the past year were assessed by logistic regression analysis. Results of about 1,200 women surveyed showed that 67% had ever experienced domestic violence, and 35% had done so in the past year. According to the qualitative findings, participants expected women with more education and income to be less vulnerable to domestic violence; they also believed (or hoped) that having a dowry or a registered marriage could strengthen a women's position in her marriage. Yet, of these potential factors, only education was associated with significantly reduced odds of violence; meanwhile, the odds were increased for women who had a dowry agreement or had personal earnings that contributed more than nominally to the marital household. Women strongly supported educating their daughters, but pressures remain to marry them early, in part to avoid high dowry costs. In rural Bangladesh, women's social and economic circumstances may influence their risk of domestic violence in complex and contradictory ways. Findings also suggest disconnecting between women's emerging expectations and their current realities.

**330. Gazi R; Chowdhury ZH; Alam SMN; Chowdhury E; Ahmed F; Begum S. Trafficking of women and children in Bangladesh: an overview. Dhaka: ICDDR,B, 2001. (ICDDR,B Special publication; no. 111).**

This review was undertaken to produce a comprehensive summary of available information concerning trafficking of women and children in Bangladesh. The review also highlighted the current activities of different local non-government organizations (NGOs) to address the problems. Research reports and publications of various organizations working in the area of trafficking, journal reports, booklets, newsletters, photographs, and newspaper clippings were reviewed. Several key-information selected from NGOs and resumed organizations were interviewed to add an additional perspective on trafficking and to increase the range of activities and interventions on trafficking covered in this report. The trafficking issue was closely linked with the human rights issue with important ratifications in the area of health, and enforcing, and socio-economic development in general. Poverty, attitudes toward women and deeply entrenched gender discrimination unemployment cultural norms about marriage, well organized national and international networks of traffickers weak law-enforcing agencies were few critical factors relating to trafficking of woman and children in Bangladesh. The review found that many research reports were based on information gathered through anecdotes from secondary analysis and unreliable data. The review also quoted extensively for

a few good reports that collected field information and described the trafficking routes. The study finally suggested that there was needed for study that could generate first hand information on social, economic, political and health implications of the problem. This regional approach implied the development of legal a framework that would ensure arrest, conviction, and extradition of traffickers and that also enables prosecution of traffickers and abuses even when crimes were committed in foreign soil.

**331. Geirbo HC; Imam N. Dowry and the transition to marriage. Dhaka: BRAC, 2006.**

The goal of this study is to see how the practice of dowry is a means of transition to socially sanctioned adult statuses. The survey is based on a qualitative research conducted in Domar upazila in Nilphamari district in 2005. The study revealed that the practice of dowry is illegal in Bangladesh, but it is widely practiced. Up to the independence in 1971, bride wealth was the common practice among Bangladeshi Muslims (Rozario: 2001). A number of economic transactions are connected to both the formalization of a marriage contact and the ending of it in rural Bangladesh. In Domar, it was found four major marriage transactions: demand, den-mohr and bhoron poson. Among the poor the Dan and demand are mostly agreed upon in detail before the wedding takes place. The sum is often very large in relation to their income. Demand is commonly given in installments. A part of it is given before on during the marriage registration. The demand depends first and foremost on the perceived quality of the groom. A certain level of education is considered a desirable attribute of a bride. Mohr is commonly calculated in relation to the demand given on either the double or the triple amount though giving the Mohr at the time of wedding is not common. According to local norms Mohr should be claimed after a divorce. Demand is seen as a necessary means for a woman to enter a socially acceptable marriage. A motivation behind giving demand is to give the daughter security within her marriage. Another motivation is securing her incase of divorce. A woman is not only vulnerable to social risk she also represents a social risk for her family and community. A mature unmarried girl is considered a shame for the whole neighborhood. The study suggests that reducing the risk factors that make married status and demand crucial for women in a way to combat the practice. Livelihood programmes can also be effective to a greater extent regarding this issue and this has to be challenged systematically among both girls and boys from an early age.

**332. Islam MS; Guha RK; Naher BN. Skill training opportunities for rural women: problems and prospects. Comilla: BARD, 2000.**

The objectives of the study are the present status of skill training for rural women; to analyze the management and implementation aspects of skill training courses offered by different institutions; to find out the impact of skill training at the beneficiary level. Primary as well as secondary sources were used to gather required information. Annual reports and related published materials of different concerned government and non-government organization were mainly consulted to collect secondary data. Relevant personnel of selected organizations and their field level beneficiaries were the primary sources for gathering necessary facts and figures. Though different GOs and NGOs have been working with rural women providing skill training for their betterment but they could not achieve the objective due to various limiting factors identified in this study. The effectiveness of any training course depends on effective use of the gained knowledge in the practical field of operation. It was observed that the rural women who had to remain busy with the household works, have no ample scope to

utilize their knowledge in a wide range but beside their household works they were able to contribute some extent to their family income by utilizing their knowledge. Moreover, they felt very confident to maintain their family

**333. Khanum PA; Islam A; Quaiyum MA; Millsap J. Use of obstetric care services in Bangladesh: does knowledge of husband matter? Dhaka: ICDDR,B, 2002. (ICDDR,B working paper;153)**

The objectives of the study were to (a) ascertain the knowledge of husband on signs of obstetric complications, (b) to examine the association between the knowledge of husbands on obstetric complications, (c) identify the determining factors in using services of trained care provider, (d) identify the factors associated with the knowledge of husbands on obstetric complications. The cross sectional study was conducted in four rural upazilas of Bangladesh. The respondents were selected from the sample registration system. A total of 7218 husbands whose wives had at least one pregnancy outcome within the last five years preceding the interviews conducted. The findings showed that the majority (77%) of the husbands were aware of at least one symptom of complication relating to pregnancy and childbirth. Ninety percent of the respondents were aware of Upazila health complex and 20% mentioned district hospital as health facilities for the management of complications. Twelve percent reported that their wives encountered one or more than one complications. Forty-seven percent of them sought care from the medically trained providers for management of these complications. Majority consulted the village practitioners for their wives but the practitioners had no professional training. Husband themselves were the decision-makers very few took joint-decision for obstetric care service. It was concluded that the role of husbands in the use of obstetric care services by their wives is an important area of concern. For the improvement of maternal health, an intervention targeted to males, particularly husbands, to get their support and for their involvement in the decision-making process for use of obstetric care services by their wives was, thus require in the socio-cultural context of Bangladesh. It was also equally important to empower women to take decision by themselves.

**334. Khan AH; Kabir NN; Quddus MD; Begum S. Impact of major ongoing WID projects on rural women. Comilla: BARD, 2000.**

The objectives of the study are to make advocacy to the policy planners at different levels to give more attention in adopting appropriate strategies of integrating rural females in economic and social development activities as per the findings of the study. Data on various aspects as mentioned under the objectives were collected from 10 WID projects 6 under GOs 4 under NGOs. The selected projects were and spread over 4 greater divisions of the country namely Dhaka, Gazipur, Narayanganj, and Mymensingh, two districts in Chittagong division namely Comilla and Brahmanbaria, two districts in Rajshahi division namely Rajshahi and Bogra, and three districts in Khulna, Shatkhira and Bagerhat. Data on organizational aspects and field level activities of the projects were collected mostly on issues addressed, strategies and methods adopted for project implementation, component activities, monitoring and evaluation, and strengths and weakness. For identifying feasible IGAs and assessing their impacts on target population 60 households from each selected project were randomly selected for collecting household level data. The findings of the study revealed that out of 367 eligible couples in the Gos; 77.9% adopted contraceptive measures against 75.0% in the NGOs. The highest rate was found among the couples of 40-44 years age group in both programs (89%). Its use was also high at ages 20-39 (77.8%). Present study revealed that only 21.4 and 23.7%

respectively of the wives surveyed in GOs and NGOs made their own decisions about organization use. The preponderance of both permanent and temporary methods of contraception showed inequality between male and female in bearing responsibility. Political parties have practices such as not bringing females into the mainstream of the party and put insignificant agenda on female's issues. Moreover contradictions in constitutional provisions, legal rights and its implementation in reality put females at an unequal position which hampers equal participation in all spheres of life. Development organization should work closely with political process of the country to motivate them to incorporate gender issues in their manifesto and agenda significantly and made campaigns and advocate to choose female candidates programme in their activities. As regards to participation in decision making process new strategies should be build up where members will be trained and facilitated to make their own decisions and demands in the systems. Involvement of females in gainful employment and IGAs and their economic independence is crucial to their economic empowerment.

**335. Koenig MA; Ahmed S; Hossain MB; Mozumder ABMKA. Women's status and domestic violence in rural Bangladesh: individual and community level effect. *Demography*. 2003;40(2):269-88.**

The aim of this article was to contribute to the limited body of population based researcher domestic violence in developing countries used data from a large cross sectional survey of reproductive aged women in rural Bangladesh, this study made several new and important contributions to the existing literature on domestic violence in developing countries. First it was explored whether women's status was protective against, or instead a precipitating factor in, domestic violence. Second was that the study was expanding existing analytical frame works by incorporating community level, in addition to individual levels determinants of domestic violence. Third it assessed the extent to which the effects of individual and community level women's status variables on violence are conditional on the broader sociocultural context in which women reside. The study found increased education, higher socio-economic status, non-Muslim religion, and extended family residence to be associated with lower risk of violence. The findings of the study revealed that the effect of women status on violence was found to be highly context specific. In the more culturally conservative area, higher individual level women's autonomy and short term membership in savings and credit groups were both associated with significantly accelerated risks of violence, and community level variables were unrelated to violence. In the less culturally conservative areas, in contrast individual level women's status were associated with significantly lower risks of violence, presumably by reinforcing nascent normative changes in gender relation. The study recommended that more research should be done on the specific contextual and normative factors that create influence of women's risk of violence.

**336. Mahbub, A. Exploring changes in the lives of BRAC women; a gender perspective. Dhaka, BRAC & ICDDR, B, 2001. (Joint Research project working paper; no. 32)**

The study was conducted to explore the changes in ideology, attitude and aspiration of the rural women involved with BRAC Vo regarding gender issues and to compare and contrast the differences between women involved with BRAC and other women of identical socio-economic status with respect to gender issues. This study used a number of qualitative methods to describe the prevailing scenario regarding gender issues in Matlab. It also

compares the situation of BRAC and non BRAC women. The study was conducted in 3 villages of Matlab Thala. Two were located in areas in which BRAC/RDP activities were on going and the remaining village was without any BRAC intervention. The existed literature suggested that BRAC interventions rendered substantial changes in women's lives in terms of facilitating their material, perceptual and relational pathways to empowerment, both at the individual and family level (Mustafa et al. 1996, Hussain 1998, Bahu et al. 1998, Islam 1998, Khan 1998, Huda and Mahmood 1998) In certain areas, the thought and ideology of BRAC women appear quite distinct from non-BRAC women. Many of these differences were apparent in their attitude and some through their actual practices and behavior. Notable differences were also evident in their notion of purdah and male power in the house hold, compared to non-BRAC women. A remarkable shift in gender preferences with regard to boy and girl children was also apparent among BRAC women in the study. Two issues can be identified in explaining this spectacular change. One is government's scholarship for girls' education and another is job availability in the garment industries in the cities. Clearly, involvement in BRAC produced important changes in women's notions of the value of girl children by reinforcing the legal rights of women and exposing them to the outside world. Three factors are crucial which have a major influence on BRAC women's thought and ideology- Money (savings and credit), knowledge and skill, and mobility. It can be concluded that development interventions like BRAC's Rural Development Program (RDP) have stimulated changes in patriarchal ideology and attitudes; however, the translation of these cognitive changes into equitable opportunities and outcomes for women will take many years to accomplish.

**337. Rahman MM; Kabir M; Shahidullah M. Domestic violence against female adolescents and factors influencing in Bangladesh. *Journal of Statistical Studies*. 2004; 24:39-46.**

This study attempted to assess the pattern of domestic violence against adolescents and also to identify the factors influencing it. Adolescents aged 10-19 years constituted the study population. A multistage cluster sampling technique was adopted to select the sample. Data on 3362 female adolescents from rural and urban areas were analyzed. Analysis of the study revealed that among the adolescents interviewed about 33% were unmarried and 67% were married adolescents. More than one fifth of them were illiterate (23.3%). One-third (33.6%) of the adolescents experienced domestic violence during the last six months preceding the survey. It was 31.5% among married and 37.9% among unmarried adolescents. The average number of domestic violence was 3.2. Verbal abuses using slang and pulling of hair were more among the married adolescents, whereas slapping, punching were higher among unmarried adolescents. Among the married adolescents, familial matters appeared to be the highest reasons for abuse (37.3%) followed by wrong doing or mistake done in work (15.8%), reproductive issues such as failure to give birth or giving birth of a female child (14.4%), sexual disharmony including forced sex (12.0%), dowry related harassments (10.1%), prevention of husband's anti-social activity (5.8%), whereas among the unmarried adolescents, not working as per instruction (40.3%) appeared to be the highest reasons for abuse followed by wrong doing (31.7%), love affairs with boyfriends (18.6%) appeared to be the most frequent reasons for domestic violence. Husbands (73.8%) appeared to be the main perpetrators of domestic violence followed by mothers in law (38.5%) for married adolescents while among the unmarried adolescents, mothers (82.3%) followed by fathers appeared to be

the main perpetrators of violence. Regression analysis revealed religion, joint family and family size having positive association with domestic violence.

**338. Rahman MM; Kabir M; Shahidullah M; Rashid HA. Domestic violence against married adolescent in Bangladesh. *Northern Medical Journal*. 2002; 11(1): 20-29.**

The main objective of the study was to assess the pattern of domestic violence against adolescents and also to identify the factors influencing it. A cross-sectional study conducted in rural and urban settings. The married adolescents aged 10-19 years constituted the study population. A multistage cluster sampling technique was adopted to select the sample. Data on 2005 married adolescents from rural and urban areas were analyzed. The mean age of the respondents was  $16.9 \pm 0.03$  years with rural-urban ratio of 2.7:1. Among the respondents, 31.3% had history of violence in last 6 months. The average number of violence was  $3.3 \pm 0.07$  ranging from 1 to 15. Among the respondents, husbands (74.2%) appeared to be the main preparator of violence followed by mothers-in-law (37.8%). Regarding the reasons of violence, 38.6% of the adolescents were abused due to household matters followed by wrong doing or mistake in work (14.2%), failure to give birth or birth of a female child (13.6%), dowry related (11.3%), sexual disharmony (9.7%), prevention of husband's anti-social activity (5.3%), were the main reasons for abuse. In step-wise forward regression analysis revealed that religion ( $p=0.004$ , OR=1.643, CI=1.171-2.307), number of children ( $p=0.005$ ; OR=1.308; CI=1.078-1.588), duration of marriage ( $p=0.008$ , OR=1.108, CI=1.026-1.196) and spousal age difference ( $p=0.013$ , OR=1.047, CI=1.009-1.085) were positively related with violence, but no statistically significant association was found with age of the respondents, age of the husband and age at marriage ( $p>0.05$ ). It was also found that rural residence ( $p=0.014$ , OR=1.650, CI=1.106-2.463), parental illiteracy ( $p=0.002$ , OR=1.669, CI=1.191-2.339), number of children ( $p=0.030$ , OR=1.323, CI=1.013-1.150) and spousal age difference ( $p=0.030$ , OR=1.323, CI=1.013-1.150) significantly positively associated with severity of violence, whereas age at marriage ( $p=0.001$ , OR=0.7580, CI=0.656-0.874) was significantly negatively associated with severity of violence. The study concluded that both short and long term policy action should be adopted to ameliorate the problem of violence against adolescents.



## **2.10 COST-BENEFIT ANALYSIS**

### **339. Anonymous. User fees and aspects of perceived quality of service some empirical indicators from Bagerhat and Comilla. Dhaka: TFIPP, 1999. (TFIPP working paper; no.3)**

The main purpose of the study was to obtain an impression of the perceived quality of services (in terms of choice of services, information received by clients, continuity of treatment and perceived hygiene factors) in the THCs. This study was carried out in the framework of TFIPP operation. To meet the purpose mainly two techniques such as FGD (two series of FGDs on the subject of user fees and their relation to perceived quality of services) and monitoring of user fee schemes under operation were used in the study. Both the qualitative and quantitative research methods were applied. This study covered 3 THCs of Comilla and 4 THC of Bagerhat district. Findings of this study identified medicine shortage as a major service quality problem but almost every client shown a keen interest to pay for a good quality service package. They claimed that the doctors often denied visiting the residence without money in case of emergency. It was noticed that gradually it was increasing the dissatisfaction about the availability of services, 50% mentioned that existing services were not adequate. The overall clients' perception of the quality aspects of services at out patient department in an average with a tendency to moderately negative, on the other hand, perception at in-patient department was moderately too fairly positive. It was seen that nearly all the clients had registered themselves for IPD and 63% had to pay for it officially, only 35% did not pay, 82% agreed positively with the 'paying bed' system. A very important observation in the study was the difference in perceptions of clients and provided with respect to quality of care. It was seen an interesting thing that those who paid less cost, they felt less satisfied. Not only the quantity but also the quality of the services should be improved that provided by the Government at the Thana Health Complex. The study suggested introduce fees system for cost sharing in the government facilities and price setting for services should be less than the price in any other health facility. Finally, the behavioural aspects could be recommended to address in training approaches undertaken in HPSP.

### **340. Barkat A; Karim MA; Khan SH; Sabina N. Costing Essential Services Package: an issue paper. Dhaka: HDRC, 2000.**

The principal objective of this study is to identify the major issues, topics, and frame work to improve upon the ESP costing, based on review of all relevant studies, one-to-one discussion with all relevant persons and participatory inputs from workshop environment. The review paper was an outcome of relentless efforts of four consultants of the Policy Project, NIPHP etc. and out of four steps envisaged in the assignment e.g. (i) reviewed of relevant materials/studies, one-to-one (informed) discussion with relevant persons, (ii) preparation of an issue paper on costing ESP; (iii) workshop on costing ESP and; (iv) finally development of a full document blown logistics on methodological issues costing ESP for the policy makers. Based on the in-depth analysis of the relevant studies, brain storming sessions and on-to-one discussion with the relevant persons the following key issues were, in order to improve upon the ESP costing frame work for the future: i) both the top-down and bottom-up procedures generated useful information. However, appropriate combination of top-down and bottom-up procedure was needed to arrive at a closer-to-reality costing estimate (i) the level of accuracy and utility of top-down estimation of salary and operating expenditure could be enhanced through work pattern analysis. This needed to be done in the future to rid of the assumption

that present staff skill mix, work efficiency and working routines were adequate. A detailed study involving various dimensions of work pattern analysis was warranted; (iii) information full cost of ESP by components be made available be applied to meet the requirements of technical efficiency, allocation efficiency and dimensions of financial sustainability; iv) information about non-ESP in ESP and ESP in non-ESP should be available. Wide used of 'notions' any guesses, and rule of them' should be gradually replaced by appointment exercises to the extent feasible. These exercises needed also for capital and joint cost allocations to input co efficient need to be estimated; to appropriate appointment exercises were needed to estimate unit cost by component; ESP costs' share to the poor, woman and poor man need to be estimated to have clear idea about the equity consideration of public health benefits, studies on user-profile and benefit incidence might appeared useful; appropriate means and ways needed to be devised to ensure that the census reached were followed up.

**341. Hutchinson P; Lance P; Guilkey DK; Shahjahan M; Haque S. Measuring the cost effectiveness of a national health communication program in rural Bangladesh. *Journal of Health Communication*. 2006; 11 (SP2): 91-121.**

This article intended to examine the cost effectiveness of the Smiling Sun campaign on use of NSDP services. The data for this article came from two sources: (1) cost data for the development, production, implementation, and promotion of the Smiling Sun campaign from 2000 to 2003; and (2) population based household, surveys of reproductive age women conducted in 2001 and 2003 in rural areas of Bangladesh. Cost data were collected by the BCCP for program inputs at the national, NGO and local levels. This analysis relates the costs of the smiling sun campaign at the national and local level to measures the change in the use of health services namely, antenatal care and childhood immunizations. The statistical approach, bivariate profit estimation, controls for non random exposure to the programs media messages advertisements and signs. Using national level data, this articles found that the smiling sun campaign was both effective and cost effective, including higher levels of service utilization for only 0.05 per additional antenatal care (ANC) user and only 0.30 and 0.36 for each additional child vaccinated for measles and DPT3 respectively. With respect to local proportion activities the cost per attributable behavior change was considerably higher nearly \$8 per new ANC user, \$37 per new DPT3 vaccination and \$32 per new measles vaccination. Addressing and overcoming some limitations which could find although it should prove to be a rich and productive area for future work.

**342. Khan MM; Saha KK; Ahmed S. Adopting integrated management of childhood illness module at local level in Bangladesh: implications for recurrent costs. *J Health Popul Nutr*. 2002; 20(1):42-50.**

This study estimated the recurrent cost implications of adopting Integrated Management of Childhood Illness (IMCI) at the first-level healthcare facilities in Bangladesh. Data on illnesses of children who sought care either from community health workers (CHWs) or from paramedics over a four-month period were collected in a rural community. A total of 5,505 children sought care. About 75% of symptoms mentioned by mothers were directly related to illnesses that are agreed in the IMCI. Cough and fever represented 64% of all reported complaints. Referral of patients to higher facilities varied from 3% for the paramedic o 77% for the CHWs. Had the IMCI module been followed, proportion of children needing referral should have been around 8%. Significant differences were observed between IMCI-

recommended drug treatment and current practice followed by the paramedics. Adoption of IMCI should save about US\$7 million on drugs alone for the whole country. Proper implementation of IMCI will require employment of additional health workers that will cost about US\$2.7 million. If the current level of healthcare use is assumed, introduction of IMCI in Bangladesh will save over US\$4 million.

**343. Quayyum Z; Routh S; Rahman MA; Jahan M; Bakat-e-Khuda. Cost recovery strategies in the health and population programmes of Bangladesh: issues for the application of user fees. Dhaka: ICDDR,B, 1999. (ICDDR,B special publication; no.90).**

The main purpose of the study was to guide the design of an operations research intervention on Cost recovery strategies for the delivery of the essential services package. Data were collected through review of the literature in review of the former MCH-FP Extension Projects Experiences with cost recovery an analysis of the Operations Research Project (ORP)'s surveillance data, visit to related govt. and NGO programmes discussion with program managers and supervisors. The study revealed that in the public sector, payments made for many of the services offered are higher than the official rates set by the government. Among other things indicated that the expenditures of health and family planning exceeds the cost involved in delivery them. Studies showed the people are willing to pay more than what they are currently paying for medical services. As a measure of attaining improved sustainability, most NGOs began to charge nominal fees in the early nineties. SMC had attained considerable success in cost recovery and recovered around 70% of the programmer's cost. But, in most of the NGOs the fees had been set arbitrarily. The structural adjustment agenda that are being adopted in developing countries have led to a heavy reliance on user fees for cost recovery in the health and family planning sector. Experiences showed that pricing can potentially contribute to the improvement of the financial base of the health sector. ICDDR, B's MCH-FP Extension Project experiences with charging for pills, condoms and injectables at a differential fee structure in Mirsarai and Abhoynagar thanas within the GOB programme showed that the introduction of user's fees had no adverse effect on CPR or utilization of services. The programme needed to adopt a systematic approach to the introduction or revision of prices that considers demand and supply factors. The strategies needed to consider all of the services of the package offended, with necessary cross subsidization and safely net measures for vulnerable groups and similarly a clear out guideline should be needed to be developed for the management of resulting revenues.

**344. Routh S; Thwin AA; Kane TT; Baqui AH. User-fees for family-planning methods: an analysis of payment behaviour among urban contraceptors in Bangladesh. *J Health Popul Nutr.* 2000; 18(2): 69-78.**

The study was carried out to review the experience with the existing user-fee strategies and examine the socioeconomic and demographic factors associated with payment behaviour among contraceptors in urban Bangladesh for selected contraceptive methods, such as injectables, pill and condom. The study was done by extensive reviewing the existing information on the pricing strategies of various family-planning programmes in Bangladesh and a cross-sectional survey of more than 5,000 married women of reproductive age. The survey was conducted during October-December 1996 within the sample frame of the Urban Panel Survey (UPS) of ICDDR,B. The findings of the study showed that most (80%) urban contraceptors have been paying for selected family-planning services. This indicated the existence of a notable demand for contraceptives suggested that there was scope for improving

financial sustainability of the family-planning programme through charging appropriate user-fees for contraceptives with proper analysis of willingness-to-pay among the contraceptors and price elasticity's of demand. Higher socioeconomic status of households, marked by higher levels of education and house rent and location of residence in non-slum areas, was predictive of paying for contraception. The findings of this study had clear policy implications. There seemed to have a sizeable demand for contraceptives and a considerable scope for pursuing cost-recovery measures on the basis of appropriate pricing. The current user-fees were nominal. Higher levels of prices might be set through further analyses of willingness-to-pay and price elasticity's of demand, which in turn, should contribute to enhanced financial sustainability of the family-planning programmes.

**345. Schuler SR; Bates LM; Islam MK. Reconciling cost recovery with health equity concerns in a context of gender inequality and poverty in Bangladesh: findings from a new family health initiative in Bangladesh. *International Family Planning Perspectives*. 2002; 28(4): 196-204.**

The study was undertaken to examine the effects of programme reorientation on patterns of service use, client-provider relations, client-satisfaction, and household level decision-making about family planning and other reproductive health services. The qualitative data were collected at three rural and two urban sites through in-depth, individual interviews with clients, their husbands, other community members and service providers, group interviews and observations in clinics and satellite clinics. The researchers use this information to examine responses to the new model of health care provision in the light of health seeking strategies commonly used by the poor and analyze continuing barriers to access and constraints to cost recovery, including gender and poverty. The second estimate was derived by calculating what a typical family would pay for basic health services as a proportion of total expenditures; household with, cost-to-expenditure ratios exceeding 1.5% were considered unable to pay. In addition, approximately 29% of clients in our sample needed credit, a proportion that might not be reflected was a survey using hypothetical questions, or in calculation based on household expenditure levels. Staff did not provide fee waivers openly and systematically, for fear that this would be raised concerns about airlines and make it difficult to enforce the posted prices for the majority of clients. Clients often interpreted fee waivers as personal favors rather than something to which they were entitled. NGOs wanted to maximize cost recovery while making the basic services they offered accessible to most people. The findings suggested that a transparent system for providing credit and fee exemptions based on need would be helped NGOs to achieve these goals.

## 2.11 NUTRITION

**346. Ahmed F; Khan MR; Islam M; Kabir I; Fuchs GJ. Anaemia and iron deficiency among adolescent school girls in peri urban Bangladesh. *European Journal of Clinical Nutrition*. 2000; 54: 678-683.**

The study was undertaken to investigate the prevalence of anaemia and iron deficiency among adolescent school girls in peri-urban Bangladesh and to identify various factors associated with anaemia in this population. The study group consisted of 548 girls aged 11-16 years, who were students of grades VI-X in nine different high schools for girls in five sub districts of Dhaka. Two schools were selected from all but one of the five sub districts. Twelve girls were selected by random sampling. Thus 60 girls from each school and 120 from each sub-district were selected. A questionnaire was developed to obtain information on the socio-economic conditions, personal characteristics and current morbidity. Univariate analysis consisted of simple frequency distribution of selected variable. Data were presented as mean  $\pm$  standard deviation. Anaemia was identified according to the WHO criterion ie Hb level  $<120\text{g}$ . The findings of the study showed that the prevalence of anaemia among the participants was 27%. Sixteen percent had depleted iron stores. Of all anaemia girls 32% had iron deficiency anaemia. When the girls were classified by serum vitamin A, the third with the lowest serum retained levels had significantly lower than SF levels. Significant positive correlations were observed between Hb and serum iron, TS, SF and retinol, while there was a negative correlation with serum TIBC. Occupancy, frequency of consumption of large fish, serum iron, TIBC, TS, SF and serum vitamin A were strongly related to Hb by multiple regression analysis. For change in SF concentration, there was a 0.046g/l change in Hb. When adjusted for all other factors. In conclusion, the results suggested that anaemia among peri-urban Bangladeshi adolescent school girls could not be explained by iron deficiency. Other causes might also be existed in the population.

**347. Ahmed L; Rahman N. Child care practice in two ecologically different rural areas: a case study. *Bangladesh Journal of Nutrition*. 2001; 14: 71-82.**

In this study attempts were made to look for the existing child feeding and health seeking behaviour by the rural families in two ecologically different locations in rural Bangladesh. Two ecologically different locations were purposively selected for the study; location one is a high land, triple crop area and location II is a low lying flood prone, double crop area. Children under 2 years of age were studied. Nutritional health care (both preventive and curative) and growth status of the target children were evaluated. In order to get the results, breastfeeding was found universal, but exclusive breastfeeding was non-existent in both the areas. Pre-lactated feeding was a normal practice. Sweet water was offered as first feed to more than half of the infants. One half of the mothers found initiated breastfeeding within 24 hours of delivery. Seventy percent babies received colostrums. Over sixty percent of the target mothers were still continuing breastfeeding their babies. Complementary feeding, which was practiced by a fewer number of mothers usually started with rice gruel and some with cow's milk. Late weaning was observed in location I. Mashed banana was introduced in that locality as the primary weaning food whereas mashed rice/mixed food dominated in location II. Family food rather than food specially prepared for the babies were served. Twenty to thirty percent of the studied children was reported to suffer either from diarrhoea or from ARI. Immunization or VAC coverage found satisfactory. During illness most of the families found to seek help from the paramedics/traditional healer rather than going to the Thana Health

Complex. Malnutrition prevalence expressed as percentage of children with z-score shows very few to be classified as normal nutritionally. More than 40% children in location I was found to suffer from third degree malnutrition. Severity of malnutrition between the two ecologically different rural areas was significant.

**348. Ahmed S; Parveen SD; Islam A. Infant feeding practices in rural Bangladesh: policy implications. *Journal of Tropical Pediatrics*. 1999; 45: 37-40.**

The present study was undertaken to assess the current knowledge and practice of methods regarding breast-feeding in rural Bangladesh and the factors affecting them. Data of this study were collected from a household survey conducted in four rural Sub-Districts of Bangladesh during May to August 1996. A total of 2105 married women who had delivered within a year of the survey were interviewed using a pre-tested structured questionnaire. The findings showed that mothers' knowledge regarding proper breast-feeding was poor. Among all the women interviewed, only 12% stated that the first food for newborns should be colostrums, and 27% knew that exclusive breast-feeding should be given for at least 5 months. In practice, of the 1878 women who had live births, 10% gave colostrums only while the rest gave pre-lacteal feeds to their infants. Only 15% of the infants were exclusively breastfed at 5 months of age. A significant relationship was found to exist between knowledge and practice of giving colostrums. Also, women between 20 and 24 years of age were more likely to give colostrums as well as to breastfeed exclusively for the first 5 months. Women who had their deliveries attended by medically trained personnel and those who already knew about the appropriate duration of exclusive breast-feeding were also more likely to practice exclusive breast feeding for the first 5 months. Findings from this study suggested that it was important to raise awareness among mothers, especially in rural Bangladesh, regarding proper breast feeding practice, including giving colostrums. It also suggested that the national programme should further strengthen its activities to address the needs of the community, especially in the rural areas of the country.

**349. Alam DS; Raaij JMAV; Hautvast JGAJ; Yunus M; Fuchs GJ. Energy stress during pregnancy and lactation: consequences for maternal nutrition in rural Bangladesh. *European Journal of Clinical Nutrition*. 2003; 57: 151-156.**

The objective of this study was to examine the extent to which energy stress during pregnancy and lactation of maternal body's stores in marginally malnourished rural Bangladeshi women. The study was conducted between November 1995 and October 1997 in eight villages in Matlab. An interview was conducted in socioeconomic, demographic and household characteristics. The responses along with obstetric history were recorded on pre-tested questionnaires. Two hundred and fifty two women were followed from 5-7 months of pregnancy until 6 months postpartum. Energy intake was estimated during pregnancy and at 3 and 6 months postpartum using 24<sup>th</sup> dietary recall. Body weight was reassured on enrollment, another once or twice during pregnancy and at 1, 3 and 6 month(s) postpartum. Weight and length of the infants measured at birth and approximately 1, 3 and 6 months. The findings of the study indicates that maternal energy intake at 5-7 months of gestation was 1464+ 416 Kcal/day. Women gained a total of 4 kg during the second half of pregnancy. Dietary energy during lactation exceeded the intake during pregnancy by 248-64 Kcal/day. Mothers lost an estimated average of 1 kg of weight during the first 6 months of lactation. The mean birth weight was 2.55+0.38Kg and the prevalence of low birth weight was 48%. Infants exhibited some catch-up growth only during the first 3 months but overall growth during the first 6

months did not change from their relative status and when compared with NCHs reference. The study said in conclusion that the situation of Bangladeshi pregnant women are really critical and needs to take immediate intervention to protect maternal nutrition and to prevent extremely high occurrence of low birth weight in this population.

**350. Ali ME; Amanatullah AZ; Mannan MA; Rahman L. Non-formal training on homestead gardening to reduce micronutrient deficiencies. *South Asian J. Nutr.* 2001; 3 (1 & 2): 47-52.**

This study aimed to assess the effect of non-formal training to create awareness on the production and consumption of home gardening products to reduce micronutrient malnutrition in the rural community. A total of 968 and 735 from families were selected randomly as pre- and post-intervention sample families from 35 rural block areas of five administrative divisions in Bangladesh. Structure questionnaire was used for data collection. The study workers, family lead farmers and farm families were trained for management and monitoring of the home gardening activities. Non-formal training was important to the farm families to create awareness on the vegetable production and consumption and food-based micronutrient therapy to reduce micronutrient malnutrition in the rural community. The study results indicated more than 37% of the farm families were educated ranging from secondary to post-graduation. The non-formal training on vegetables and fruits production, processing and consumption increases the average awareness level from 2.1 to 6.6 grade points out of 10. Average monthly production and consumption of vegetables in 3 consecutive years were 65 kg (SD  $\pm$  40) and 58kg (SD  $\pm$  18). Understanding of anemia, importance of vitamin C, iodine deficiency disorders was 31% and 83% and 86%, 24% , and 81%, and 39%, and 94% respectively at pre- and post intervention. All forms of vitamin A deficiencies were identified at about 7.0% and 3.3% respectively during pre- and post-survey. Micronutrient deficiency reduced from 33% to 20% among the family members. The study suggested that non-formal training and food-based intervention reduce micronutrient deficiencies.

**351. Ali SM; Humaera S; Edib K; Bhuyan MNH; Pramanik MMA; Ahmed N; Islam K; Yeasmin R. Effect of lathyrus protein concentrate feeding on the growing of children. *Bangladesh Journal of Nutrition.* 2003; 16: 117-122.**

This study was carried out to examine the effectiveness of Lathyrus Protein Concentrate (LPC) in reducing protein energy malnutrition (PEM) through enhancing the growth among these children. A cross sectional study with a total of 10 children aged 1-3 years was taken to find out the effectiveness of Lath rum Protein Concentrate (LPC) feeding on the growth of children. Before intervention of 59.6 gm of Suji-based diet along with 20 gm of LPC was fed to each child daily for a period of 15 weeks. The findings of food supplementation along with LPC showed that at the end of the feeding information the nutritional status in respect of weight for age Z-score was improved of nutritional status of the children which was a shift from severe to moderately under weight. Mean weight gain was 1.22 kg in children feed with Suji containing LPC during a period of 15 weeks intervention. It was found a significant positive correlation between weight gain and duration of LPC containing food supplementation. Effectiveness of the intervention program for attaining growth among children was 44.05%. The findings revealed that in depth study with LPC supplementation a large number of subjects was recommended so to facilitate effort to produce LPC at a large scale for consumption throughout the country.

**352. Anonymous. Vitamin-A status throughout the lifecycle in rural Bangladesh: national vitamin-A survey 1997– 98. Dhaka: Helen Keller International, 1999.**

The vitamin A (VA) survey was designed under the broader context of child and maternal health and survival. The sample size for the survey was estimated based on the WHO criteria of prevalence of exophthalmia. Multi-stage sampling frame was employed to select study sites and households. The total survey included data on 23,984 households from 800 clusters throughout rural Bangladesh. Special questionnaire were developed and pre-tested. The survey findings revealed that the clinical VA deficiency among preschool age children in rural Bangladesh had been reduced to levels below the cut-off established by the WHO used to define a public health problem. Night blindness among the children 12–59 months of age had been reduced from 3.5% in 1982/83 to 0.62% (95% Cal. 0.57-0.78) in 1997/98. The proportion of eligible children covered in the campaign prior to the survey ranged from a high of 93% in Khulna to lows of 78% and 80% in Sylhet and Chittagong respectively. Breast-feeding and maternal education were also key risk factors for child night-blindness. Children who were not breast fed were 2-6 times more likely to be night blind than those who fed and children whose mother had no formal education were 3.7 times more likely to be night blindness than those who had at least one year of formal education. More than 30% of the children in the survey had not consumed VA rich foods in the previous 24 hours. More than 2.7% of pregnant women, 2.4% of lactating and 1.7% of non-pregnant/non-lactating women were night blind. Among pregnant women, only 13% consumed more than 1000 RE/day, the recommended daily intake during pregnancy. Among the lactating women, 11% consumed more than 1200 RE, the recommended daily intake during lactation. Approximately 12% of adolescent girls in the survey (n=189) had screen retinal values below 0.7 umol/litre (20 mg/dl) and 47% below 1.05 umol/litre (30 mg/dl). The survey confirmed that the VA capsule distribution program had played a major role in the dramatic decline of VA deficiency among preschool children in rural Bangladesh. The findings of the study suggested that VA status of women in Bangladesh should be increased in befitting manner. Simultaneously, GO and NGO should pursue the feasibility of reaching women with fortified foods and food-based interventions and counseling to increase women's intake of VA-rich foods, particularly during pregnancy and lactation. VA programs should be good components of a broader effort to reduce malnutrition. Synergistic planning of health programs, actions to maintain and increase the VA capsule distribution and initiatives to increase dietary intake of VA-rich foods would be the key steps for the future.

**353. Anonymous. Iron deficiency anemia throughout the lifecycle in rural Bangladesh: national vitamin-A survey. Dhaka: Helen Keller International, 1999.**

This study was conducted to estimate the anemia among women, preschool children, school age children and adolescent girls, and identified key risk factors associated with anemia in these sub groups in rural Bangladesh. The data were collected from a nationally representative sub-sample of households as part of the national vitamin A survey in late 1997. Blood samples were collected from households in 10 clusters each in 10 rural Thanas. In addition to collecting blood samples, the survey teams interviewed households to obtain information on child and maternal health, food consumption, family planning and homestead food production activities. The findings of the survey revealed that approximately 52.7% of Bangladesh children between 6-59 months were anemia (hemoglobin levels below 11.0 mg/dl). This overall rate of anemia among this age group marked the high rates that were found among younger children. The prevalence of anemia (Hb<11.0 g/dl) was 78% among children 6-11



months of age and 64% among children 12-23 months of age. Children were more likely to be anemic if their mother was also suffering from anemia. Anemia among pregnant and non-pregnant women of reproductive age was also common. At about 50% of pregnant women and 45% of non-pregnant women suffered for anemia. The key factors associated with maternal anemia in rural Bangladesh included malnutrition. Approximately 28.6% of adolescent girls aged 11–16 years had hemoglobin levels below 11.5 g/dl and 43.0% below 12.0 g/dl. The findings of the study suggested that more efforts needed to expand and refine programs for pregnant if the country would like to reach the goals for 2010 set by the National Plan of Action for nutrition to reduce anemia. Moreover, there were clear synergies between iron deficiencies and overall nutritional status, therefore programs should be done to address macro and micro nutrient deficiencies simultaneously.

**354. Anonymous. Report on consultancy services for breast feeding programme in Bangladesh under Bangladesh Integrated Nutrition Project Year 1996-2001. Dhaka: TFIPP, 2001.**

This review is structured on the basis of the exchange that was provided by the expert group on a project of Bangladesh Breast Feeding Foundation name “The Campaign for the protection & promotion of breast-feeding.” The single goal of the campaign is to significantly lower the morbidity and mortality of children and women in Bangladesh through successful breast-feeding. The project activities includes the breast-feeding protection, promotion and support activities are sustained through behavior change interventions by public, private and civil society initiative, and mainstreamed in the context of HPSP. The activities were carried out with close collaboration between BINP and BBF. Breast feeding activities covered all types of health facilities (GOB, NGO and private) throughout the country. BBF introduced various indicators in ensuring accountability and maintain management. According to management and supervision strategy BBF personnel planned and guided the implementation of project activities in national level. BBF has a structure of 15 members' board of trustees and sub-committees of seven that worked as volunteer. At the field level BINP operates Thana Promoters (CNP, CNO, of CBNC component). Also has monitoring and supervising set up at divisional and district level. Already the project has achieved a number of significant achievement in the field of training, BFHI assessment, and also introduce lactation management clinic, forty hours counseling course, established BFHI monitoring of 66% baby friendly hospitals. Developed, printed and distributed a number of production for communication and social mobilization (BBF research Bulletin, animation films, billboard, day observance organizing seminar etc) during the whole contract period with BINP, BBF succeed in its campaign for the promotion and protection and support of breast feeding throughout Bangladesh. Marching the maternity leave from three to four months is a breakthrough achievement of BBF in 2001.

**355. Anonymous. Baseline survey report: School Health and Nutrition (SNH) Program. Dhaka: Save the Children, USA, 2004.**

The objectives of the baseline survey were to measure the magnitude of worm infestation and prevalence of anaemia, to estimate the use of health services, safe water and sanitation among primary school children and their families in Nasirnagar upazila and to assess to extent of their knowledge and practice regarding specific and relevant health issues. An analytical and comparative study design was adopted to evaluate the baseline status of the existing SNH program in six unions. A total of 745 children in intervention area and 744 in control were

taken by multistage satisfied random sampling. Data were collected by face to face interview using pre-tested structured questionnaire by trained data collectors. Blood, stool and hemoglobin estimation and ever count at the mini-laboratory which was also been established at the field. The socio-demographic characteristics of the children of both the intervention and the non-intervention areas were almost the same. In the intervention area almost 99% of students were aware about the school health services, whereas, in the control area the proportion was only 12.4%. Recommendable and safer water-sanitation practice was also observed among higher proportion of students of the intervention area (approximately 37% practice safe-sanitation, almost 51% washed hands with soap after defecation). However, majority of the students were suffering from anaemia. It can be explained as almost 87% enrolled primary school children from intervention areas were found to host intestinal parasites compared to approximately 94% primary school children from non-intervention areas. Mass deworming for all enrolled primary school children and their family members as well as school teachers and their families possibly would allow optimum benefit towards children with such worm load. Iron supplementation to enrolled school children would also need to be accompanying de-worming rounds. It would be worth planning to supplement vitamin A along with iron supplementation as the best results are found when both are combined. Provision of safe water and sanitation status at community level and maintenance of recommended level of personal hygiene needs to be improved to prevent recurrent worm infestation among the children.

**356. Arifeen SE; Black RE; Caulfield LE; Antelman G; Baqui AH. Determinants of infant growth in the slums of Dhaka: size and maturity at birth breastfeeding and morbidity. *European J Clinical Nutrition*. 2001; 55: 167-178.**

The study was driven to investigate the influences of site at birth, breast feeding and morbidity of growth during infancy in poor areas of Urban Bangladesh. This was a prospective observational study of a cohort of newborn infants followed until 12 months of age. A total of 1654 singleton live born newborns were enrolled in the study during 1993- 1995 from a sample of slum areas of five of Dhaka city. Enrollment was limited to newborns that could be reached within 13 days of birth. A standardized post-natal physical gestational age assessment was conducted. Information on household and parental characteristics, the mother's fertility experiences and the date of her last menstrual period (LMP) were collected before birth. The study came into light with the results – after adjusting for other variables, mean differences in body weight by birth weight and length, small- for- gestational age and prematurely categories remained relatively constant throughout infancy. A positive impact of exclusive breast feeding in the last 3- 5 months on infant growth was detectable at 12 months of age. Through the bigger babies in the sample tended to grow relatively even bigger, exclusive breast feeding appeared to counteract this pattern. Reported diarrhoea was associated with lower body weights and lengths even after adjusting for feeding patterns. The sustained effect on growth and the even more beneficial effect in lighter infants are compelling reasons for promotion of exclusive breast feeding in early infancy. Effective strategies for improving birth weight, poorly addressed till now in Bangladesh, are highly needed.

**357. Bari MA. Nutritional knowledge and food habit of the slum mothers of Dhaka city. *JOPSOM*. 2001; 20(1) 68-73.**

The study was designed to know the socio-economic condition, and knowledge and practice of slum mothers about nutrition. The study was conducted among 114 purposively selected slum

women having children. The data were collected by face-to face interview using a semi-structured questionnaire. The study was carried out in the Department of Community Medicine of ZH Sikder Women's Medical College and Hospital during May 1999. Mean  $\pm$ SD age of the mothers was  $25\pm 8$  years. Majority of the respondents (87.72%) was within 35 years of age and 31.58% was literate. On an average, size of each family was 5 and children below 14 years of age were 43%. The study revealed that adult female members of the family were 36% and males were 21%. Most of them (70%) do only household activities and rests do additional job other than household works. Monthly income of 81.59% of the families varied from Tk.1500 to Tk 3500 with a mean  $\pm$ SD of Tk. 2746 $\pm$ 1178. Majority (66.70%) had knowledge about the necessity of additional food during pregnancy. Of the respondent, 57% said in favour of feeding colostrums to the newborn babies and 24.56% said in favour of continuing breast-feeding for 2 years. Majority (58.78%) showed knowledge about proper timing of complementary food. A good number of mothers (76.32%) showed knowledge about necessity of food during diarrhoea; 61.40% said for giving ORS during diarrhoea while others (12.29%) have opined that soft diet was suitable during diarrhoea but 21.05 % said that any diet could be given during diarrhoea. Regarding use of extra water that arised from vegetables during cooking, 31.57% said that they discarded it and rest of the respondents could not clearly recall it. Meals of most respondents commonly consisted of rice with vegetables; 47.36% took such meals at breakfast, 60.52% at lunch and 57.89% at dinner. The slum mothers lack proper knowledge about food values, its' processing, preparation and needed quantity, which led them to malnutrition. Government of Bangladesh should be taken appropriate measures to prevent malnutrition among these destitute women.

**358. Begum HA. Maternal nutrition and postpartum amenorrhoea. *JOPSOM*. 2003; 22(2): 75-80.**

The work was initiated to review the relevant information regarding maternal nutrition and postpartum amenorrhoea. The materials of the review were collected through conventional review from published journal, reports and various texts item. This review was revealed about under-nutrition and weight loss delay menarche and causes cessation of already established ovulate cycles. High energy output also affects menstrual periodicity and the onset of menarche. Drastic reduction in food intake and consequent acute under-nutrition are associated with amenorrhoea and reduction of fertility in women. Malnutrition lowers the reproductive capacity of populations. One of the effects of supplementing diet of pregnant and lactating women is to reduce the duration of post partum amenorrhoea. Post partum amenorrhoea also varies with season and a country's economic condition. The supplemented group experienced  $7.5 \pm 2.6$  months amenorrhoea, compared with the unsupplemented control group with  $14.0 \pm 4.0$  months postpartum amenorrhoea. However, it has been suggested that the shorter duration of lactational amenorrhoea might at least in part be attributable to confounding variables such as the earlier introduction of supplements and schedule feeding among well nourished women, rather than a better nutritional status.

**359. Bhuiyan MAH; Abdullah-Al-Mahmud M; Rahman SMM; Rahman MK; Shaheen AN. Nutrition education exposure and nutritional status of selected household member in three agro-ecological locations of Bangladesh. *Bangladesh Journal of Nutrition*. 2001; 14: 31-40**

The study was undertaken to obtain comparative information regarding their socio-economic, educational aspects, exposure to nutritional knowledge and also to determine their nutrients

intake and nutritional status of selected households from selected location of three different agro-ecological zones of Bangladesh. A cross sectional study was conducted in three selected locations of Bangladesh among 150 households of Dhaka, Chittagong and Khulna divisions. Each village was selected by random sampling method in this study. An initial questionnaire was developed by obtaining information on monthly family income, educational qualifications, occupation, religion, family size etc. Data was collected through the researchers' visiting the respondents. The study results showed that among the respondent households, 26.7% in Dhaka and Brahmanbaria and 32.6% in Bagerhat were Muslims and rest of the households were Hindu and Christian. Most of the households were 17.3% in Dhaka, 8.7% in Brahmanbaria and 15.3% in Bagerhat were farmers. In terms of occupational sides, the most striking findings were 12% business populations were residing in Brahmanbaria. Most of the household (12.7% in Dhaka, 10.7% in Brahmanbaria & 14.6% in Bagerhat) monthly income was between Taka 1500-3000. Half (50%) of the respondents of Dhaka had previous exposure to nutrition education where as in Brahmanbaria two-third and Bagerhat one-third of the respondents had exposure to nutrition education. Mean per capita calorie-intake of the respondent household's member was 2157 kcal where as about 53% children were malnourished according to weight for age using Z score. Of them, 40% children in Dhaka, 48% in Brahmanbaria and 72% in Bagerhat were underweight. Different agro-ecological locations had significant association with under weight children of 2-5 years. This study did not suggest any single variable as the cause of malnutrition rather cumulative effect of lack of nutrition education improper dietary practices etc. also played vital role in this regard.

**360. Bhuiyan MAH; Hossain AMMM; Shaheen N. Nutritional knowledge and practice of Dhakaiya population. *Bangladesh Journal of Nutrition*. 2001; 14: 63 – 70.**

The study was designed to assess the nutritional knowledge and practice of Dhakayya population. A cross sectional study was conducted on 200 mothers having children under five. This respondent mother belongs to different socio-economic group of Dhakayyah population and living in the old part of Dhaka City at least for five generations. A systematized structure of questionnaire was formulated to collect the information regarding nutritional knowledge, attitude and practice about nutrition, health and food habit of the research population. Results of the research showed that, more than 50% of the respondents had education up to secondary level whereas 3.5% were illiterate. Almost half (45%) of them were in 30–39 years age group, 35.5% of were 20-29 years, and 17.0% were of 40–49 years age groups. Majority (76.5%) of the respondents was in upper income level and 99% of them were housewives, only 7% were service holders. Majority of the respondents (66%) washed vegetables after cutting them into small pieces and almost all (93.5%) threw rise water away after cooking. Knowledge about all the energy giving foods like rice, bread and potato were significantly associated with monthly income when income was classified into two groups (<10,000 and above 10,000 Taka per month). All most half (42.86%) of the respondents feed their babies cereals as home made supplementary food whereas only 23.8% of mothers gave egg to their babies. The findings suggested that health education messages should stress the importance of gradually introducing homemade supply energy food of children by age 6-9 months to reduce malnutrition in children under five.

**361. Bhuiyan MAH ; Rahman SMM; Bhuiya MMH; Bhuiyan MNH; Zaher MA. Nutrition status and food intake pattern among selected foot ball players in Bangladesh. JOPSOM. 1999; 18 (2) 68-72.**

This study intended to examine the existing food behavior of some selected football players of Dhaka City in order to underscore their dietary adequacy. This was a cross sectional study conducted among 90 male football players from 5 clubs of Dhaka City. A pre-tested questionnaire was used to collect data. Percent Body Mass Index (PBMI) of the respondents was calculated with the formula,  $(\text{BMI}/\text{Standard BMI}) \times 100$  using Standard BMI of 21.1 for male. A food scoring on individual respondent was also done based on the food intake frequency and items of food groups. Finally, bivariate and correlation analyses were done to see the relationship of food scoring with the nutritional status of the football players. The study was carried out during March to May, 1995 under the Institute of Nutrition and Food Sciences, University of Dhaka. The study revealed that 44.4% of the football players were of 25-29 years age group and 39% were in 20-24 years age group. It revealed that 46% of the football players had score between 1 and 10 for dairy food. For meat/protein food the scores were between 20 and 30 among majority of the players (64.4%). For grain food 51% of the players had score between 30 and 40 and another 31% players had score between 40 and 50. For majority if the football players (33.3%), scores for vegetables were between 30-40 and another 23% had score between 40 and 50. Most of the players (94.5%) had scores for fatty/alcohol food between 20 and 30. For other types of foods, 31% of respondents had score between 30 and 40. Based on PBMI, nutritional status of 96.7% of the football players was within normal range. Thirty-seven percent players' food scores were between 200 and 225. The correlation value between PBMI and food score was 0.3, which was significant at 1% level. Although there was a long tradition of football game, on study was yet available in Bangladesh to see the dietary pattern of the players. The present study explored some relationships between food intake pattern and work performance of the players.

**362. Bhuiyan RH; Rahman S; Rahman QM; Kabir H. Follow-up/impact evaluation study on poultry for nutrition training of the National Nutrition Program (NNP). Dhaka: NIPORT, 2005.**

The objective of the study is to carry out the follow-up and/or impact evaluation of training on poultry activities for nutrition of the National Nutrition Project (NNP) provided through the anatomy of Model I and Model II. Both the quantitative and qualitative methods were used to collect data. The specific method was face to face interview. Five field survey teams each consists of 1 male and 1 female, four investigators conducted the survey. The study showed that average age of respondents was 25-29 yeas. Largest majority (89%) were married and read up to class six. Most of the respondents were agriculturist with an average monthly income of Tk. 3,000/- to 4,000/-. Training was held by the local expert trainers but subjects of training varied from cadre to cadre with some common subjects for all. Majority (83%) mentioned to have training for 5 days. Training materials were not available for all the cadres. Conveyance and daily allowances were not satisfactory and in most cases beneficiaries were fed out of daily allowances. About 50% of trainees found training knowledge fairly helpful in job performances. Several cadres like CR, KR and MR were involved in poultry rearing following the training instructions. Lack of funds caused new concerns to fulfill their plans. Most of the respondents did not have fair knowledge about the treatment and their prevention of most commonly found diseases. Poultry Health supervisor (PHS) provides services for KR, CR and MR. Their main work was educational program on different aspects of chick rearing

and provision of vaccination to poultry birds. A little more than one third could utilize their knowledge from training fairly well and same number mentioned about poor utilization. Most of the respondent egg sellers suffered from fragility of eggs, low price, non-availability of vaccine in time, most eggs don't hatch and lack of capital. It is recommended that there should be uniformity in course outline, contents of topics, training methodology materials and their distribution. Methodology showed is practice oriented. Minimum qualification of the PHS should be SSC and their selection should be made by specially constituted selection committee. Allowance should be increased. Sufficient stock of vaccine and medicine in the upazilla offices should be arranged. Easy availability of loans for repayment on easy installment should be assured.

**363. Bilkes F; Wahul MA. Weaning practices in low income families of an urban slum area in Dhaka city. *Bangladesh Journal of Nutrition*. 2001; 14:41-48.**

This study had been conducted in an urban slum area of Dhaka city in Bangladesh in order to investigate the weaning practices and the nutritional status of the children living in the slum. A cross-sectional study was done by a survey through interview, observation and weaning analysis of food. The study was conducted during April 1994 to March 1995 in an urban slum in Dhaka city. The study results showed that the prevalence of exclusive breastfeeding was 20% and alarming more than half were severely malnourished based on NCHs standard. Eighty eight percent of the children had been suffering from different grades of malnutrition. It was observed that none of the mothers/caregivers were prepared any special food or separate cooking as weaning food for their children/infants in the slum area. Weaning food was not introduced to the infant at any particular time. Sometimes it was either too early or too late. Seventy-nine percent infants were being given food from family pot which was mentioned here as supplementary or extra food. 70% of the total energy intake was from carbohydrate, even though the average energy intake was grossly (about 40%) inadequate compared with recommended Dietary Allowances by the children of 6-24 age groups. The study results recommended appropriate weaning practices should also be emphasized and encouraged.

**364. Chowdhury AY; Rahman ABMM; Biswas KK. Training follow-up/impact evaluation study on vulnerable group development under VGD-NNP implementation collaboration project. Dhaka: NIPORT, 2005.**

The objectives of the study were to measure and analyze the performance of the project in regard to the planning and implementation of the training; changes in knowledge, attitude and behaviour of the beneficiaries in regard to development support and nutritional services; and identify the strength and weakness of the training and performance of the trainers. The study employed a representative two stage sample that was selected from the VGD-NNP collaboration areas covering 23 randomly selected upazilas during the cycle of January 2003-December 2004 list. The lists consist of 271 primary sampling units (PSUs) with enough PSUs in each division except for Sylhet division. The primary sampling unit was the union. A total of 132 PSUs were used for the study. A systematic sample of 4,000 VGD women was selected from union wise VGD women list of BRAC. In addition, 107 VGD trainers/managers were interviewed. The findings of the study revealed that mean age of the VGD women was 38 years; 82 percent had no formal education and on an average a VGD woman had 3.3 children. About 60 percent of VGD women are currently married. Another 30 percent of VGD women are widowed. Rest 10 percent women are either deserted or divorced or separated.

The VGD women received income generation training and awareness development training. Almost all VGD women participated in the training program. Only 5% did not participate. Nearly ninety percent of the VGD women reported that the attendance in the training sessions was good. Seventy one percent respondents reported that they had received credit for income generation activities whereas 99 percent of them had saving practices. Almost all of the VGD women received food aid for the full cycle that is 24 months. The credits were used for cow goat rearing and small business. Majority of the target women achieved the practice of savings after the enrolments as VGD member. Most of the VGD women were aware about diarrhoea and immunization, prevention of height blindness, benefits of colostrums, and signs of vitamin A deficiency while only a few knew the danger signs of pregnancy. All trained VGD women are aware of existence of a community nutrition services in the location. The numbers of newly wed couples were few among the trained VGD households but make them half of the newly wed couples and received health and nutrition education services. The study recommended that efforts are needed to choose VGD women following standard criteria to VGD implementation manual; the training topics should be selected according to the list of VGD implementation manual; emphasis should be given to hands on practice training; uses of different IEC materials have to be carefully planned and implemented; the VGD program needs to be expanded so that more vulnerable women are benefited from this program.

**365. Chowdhury S. Maternal malnutrition and low birth. *J Obstet. Gynaecol.* 1999; 14 (2): 63-69.**

The aim of this report was to describe the magnitude of the problem of maternal malnutrition and its consequence in the term of low birth weight in the developing countries. The study used mostly quantitative approach, incidences of low birth weight (LBW) derived estimates of IUGR, LBW of SEAR countries from 1985-1995 were collected. Data from different sources, WHO data base on LBW (WHO-1992), MOHFW of Bangladesh (BNNP, 1997) were collected and analyzed. It was found that factors contributing to low birth weight in developing countries was low maternal caloric intake, inadequate weight gain in pregnancy, low pre-pregnancy weight short stature malaria and female sex of the fetus. Most of these factors of LBW are related to maternal malnutrition. And affecting the next generation and maintaining a vicious cycle. The evidence from systematic reviews of randomized controlled trials on intervention based assessment of factors evaluated for their effect on low birth weight showed that strategies should be taken to improve pre-pregnancy weight, increase in age at marriage improving maternal education, gestation weight gain calorie intake, prevention of malaria and tobacco chewing to reduce low birth weight. Low plasma zinc concentrates showed three to seven times increase in premature rupture membranes than women with normal zinc. Caulfield noted longer gestation times and 25% to 50% reduction in pre-term delivers and zinc supplement women. In women receiving supplement providing an additional 300 calories and 16g protein daily during the last trimester of pregnancy, the mean birth weight in infants was significantly higher and the incidence of LBW lower (21.7 % compared to 34.7 % in then on-supplemented groups). Delaying adolescent pregnancy efforts to improve nutrition for pre-pregnancy weight gain and nutrition education with food supplementation during pregnancy access to ANC, rest in pregnancy, malaria prophylaxis in endemic areas may be improved female education and women's status. Sanitation and water supply, efforts to stop smoking and tobacco chewing were the main causes which were suggested in public health intervention to reduce LBW. Improving nutrition status by making the food available also, could help in reducing LBW.

**366. Chowdhury S; Shahabuddin AKM; Seal AJ; Talukder KK; Hasan Q; Begum RA; Rahman Q; Tomkins A; Costello A; Talukder MQK. Nutritional status and age at menarche in a rural area of Bangladesh. *Annals of Human Biololgy*. 2000; 27(3):249-256.**

The purpose of this study was to determine the current age at menarche of adolescents girls in a rural area of Bangladesh and to identify its association with nutritional status. A cross sectional study was performed to collect data on 483 adjacent girls aged 10-17 years. Among them complete data were obtained from 436 girls. Among the 165 girls commenced menarche. Data was collected through October to December 1996 by using a pre-tested structured questionnaire interview schedule, and nutritional status was measured by weight, height, body mass index and physical examination. The median age at menarche determined by the stationer method was 13.0. The study results revealed that among the adolescent 60% were their (BMI <5<sup>th</sup> canticle WHO recommended reference) and 48.2% were stunted (<3<sup>rd</sup> centile NCHS/WHO). The mean weight and BMI were significantly higher among the menstruating girls of 13, 14 and 15 years than non menstruating girls. The mean height was found to be significantly higher at 11-14 years among the menstruating girls. A lower prevalence of regular stomatitis was found among the menstruating adolescent girls compared with the non-menstruating girls, 36.4% versus 46.5%, although this was statistically non significant odds ratio = 0.66, 95%. For glossities, no significant difference was found. Among the menstruating girls 12.1% were suffering from menorrhoea and 31.5% from dysmenorrhoeal. The study findings revealed that the age of menarche among this rural Bangladesh community is not as delayed as expected. Not surprisingly, menarche is associated with better nutritional status. The surveyed population had extremely high rates of under nutrition got from the findings. Therefore, the study recommended that adolescents in this and similar situations require specific interventions programs to improve their nutritional status and further studies are required to investigate the social pressure and beliefs that lead to the high school drop-out rates of menstruating girls.

**367. Chowdhury S. Maternal nutrition and its effect on pregnancy outcome. *Bangladesh J Obstet and Gynaecol*. 2000; 15(2): 73-81**

This paper reviewed the maternal nutritional status and its consequences in Bangladesh. In Bangladesh it has been observed that there is high prevalence of maternal malnutrition with mean maternal weight of 40 kg, height 147cm and body mass index (BMI) 18.5. As a consequence of which there is a high incidence of low birth weight babies and high incidence of complications during pregnancy and at delivery. Maternal short stature and low weight are often associated with high morbidity and pregnancy complications like obstructed labour, prenatal and infant mortality. Nutrition in pregnancy is an important determinant for the survival of mother and baby. It is now well established that both maternal pre-pregnancy BMI and weight gain during pregnancy are important determinants of foetal growth. The importance of maternal nutrition are: healthy mother gives birth to healthy baby, it influences birth weight, growth and development of baby, good maternal nutrition prevents neonatal and maternal mortality and morbidity, and adequate maternal nutrition leads to better breastfeeding performance. To improve nutritional status of pregnant women nutrition education and basic nutritional assessment and guidelines should be provided to them by primary health care providers.



**368. Chowdhury S; Sarkar NR; Roy SK. Impact of lactational performance on bone mineral density in marginally-nourished Bangladeshi women. *J Health Popul Nutr.* 2002; 20(1):26-30.**

This cross-sectional study, carried out during July 1997-June 1998, evaluated the effects of prolonged breast-feeding and lactational amenorrhea on bone mineral density (BMD) in 400 marginally-nourished Bangladeshi women aged 20-81 years. A bone densitometer was used for measuring BMD in the distal and ultra-distal end of radius and ulna. The results showed that the women who breastfed for 60 months or less had a higher mean BMD compared to those who breastfed for 61-120 months and for over 120 months. There was a significantly higher BMD in the women who had a shorter duration of lactational amenorrhea compared to those having a longer duration of lactational amenorrhoea. BMD was significantly and negatively correlated with total duration of lactational amenorrhea (slope -0.024,  $p < 0.05$ ) after controlling for parity, physical workload, and total duration of breast-feeding. The study concluded that there was a negative correlation between longer duration of breast-feeding and BMD, but it was not found when other factors were controlled in multivariate analysis. The duration of lactational amenorrhea, which is a proxy indicator of breast-feeding, showed a negative correlation with BMD. It is recommended that all lactating women be given diet with adequate calcium to support breast-feeding for maintaining good nutrition of their bones

**369. Giash-uddin MS; Kabir M; Rahman A. Factors associated with nutritional status and morbidity in Bangladeshi breastfed children. *Bangladesh Journal of Nutrition.* 2002; 15: 5-14.**

This study was designed to assess the exclusive breast feeding practice and also examined the influence of socio-economic and demographic characteristics influenced on nutrition and morbidity in Bangladesh. Data from a national survey named "Surveillance on breast-feeding and weaning situation and child and maternal health in Bangladesh" Conducted by the ICMH was used. Information was selected on 2781 Children between 0-2 years of age from their mothers. The results of the study showed that only 16% of women exclusively breast feed their babies for a 6 months. Among the children 38.1% were stunted and 38% were underweight for their age, while 46% were affected by some diseases. In birth rate analysis of factors associated with exclusive breast feeding a significant association was found with maternal education ( $P < 0.001$ ) and family income ( $p < .01$ ). Exclusively breast-feed children were less stunted than non-exclusive breast feed children ( $p < 0.001$ ). Logistic regression analysis showed that children of illiterate women were more stunted than children of higher educated women (OR=1.69, 95%, CI=1.33-2.15). Male children were more likely to be stunted than female children. Non exclusive breast feed children had 1.6 times higher risk of morbidity and 3.57 times higher risk of morbidity and 3.57 times higher risk of occurrence of diarrhea ( $p < .001$ ). In conclusion, exclusive breast-feeding improved linear growth and reduced morbidity of below 2-year children. Despite all efforts of different government agencies and NGOs, the study showed that exclusive breast feeding rate was still low in Bangladesh. The study recommended that more steps were needed to encourage exclusive breast-feeding for 6 months of age in order to improve the physical growth of children in Bangladesh.

**370. Haider R; Kabir I; Ashworth A. Are breast-feeding promotion messages influencing mothers in Bangladesh? : results from an urban survey in Dhaka, Bangladesh. *Journal of Tropical Pediatrics*. 1999; 45: 315-317.**

This study was carried out to understand the mothers' perception of the campaign messages (National Breast feeding Promotion Campaign that was launched in 1989 in Bangladesh) and the reasons for current practices. The study area covered approximately 30,000 households from Rampura to Khilkheta in Dhaka. A random sample households with infants aged 0-6 months were selected and mothers were interviewed at home from September to December 1995 by four trained female interviewers. The study results showed that 99% of mothers fed colostrums within 3 days of delivery, 92% of mothers also gave one or more traditional pre-lactated and 68% gave post lacteals. This could be due to ambiguity of the messages, which simply advocated giving colostrums without indicating its exclusive use, thereby appearing compatible with traditional perceptions that colostrums alone were sufficient. Ninety-nine percent of mothers reported hearing the breast feeding messages or receiving advice, and 97% stated that they understood the meaning of exclusive breast-feeding. But this concept was not correctly understood, as many thought it meant feeding breast milk and water. The prevalence of exclusive breast-feeding was 15%, and complementary foods were introduced early (median 30 days). Many mothers doubted the message that breast milk alone was sufficient for 5 months. Messages to promote improved breast feeding practices in Bangladesh need to be revised to clear misconceptions.

**371. Haider SJ; Alam MH; Ferdous MS; Begum F; Gias-uddin S; Pervin D. Follow-up study to evaluate impact of Community Nutrition Organizer (CNO) and Community Nutrition Promoter (CNP) Training of the National Nutrition Programme (NNP). Dhaka: NIPORT, 2005.**

The objective of the study was to assess and determine the efficacy of the CNO/CNP training program in implementing NGO services. The survey data were collected by trained and experienced interviewers using pre-designed and pre-tested data collection instruments both for qualitative and quantitative investigations in November-December 2004. The results of the study were that more than half of the CNOs (54%) and about one third of CNPs (36%) recommended changes in the curricula and emphasized on printed training materials. Monitoring and supervisory visits during the training were considered important to enhance quality of training. Most of the trainees recommended the extension of the duration of training for the basic course. Majority of the sites lack electronic media supply. About two thirds (64-74%) of the CNPs stated that the training changed their attitude in providing health education regularly at the CNCs. Almost (99%) the CNPs reported that they promoted nutrition gardening in the community and more than half (55%) provided seeds and fertilizers for nutrition gardening. Highest proportion of the users of family planning methods is from among the mothers of U5 children (73-76%) and the lowest proportion is from among the newly weds (23-35%). The rate of use of family planning methods among the lactating mothers varies between 49 to 51%. Highest proportion of the samples, women on adolescents, recollected their orientation on Nutrition Gardening followed by Poultry Raising and Supplementary food preparation. Further recommendations are as followed: training curricula should be redesigned with latest training facilities; counseling on Family planning is necessary, women are intensively targeted under this program, intensive motivation education of the beneficiaries may be strengthened; potential community support system should be developed; the access of mother and children health care services should be increased.

**372. Haque MF; Hussain M; Sarker AK; Hoque MM; Anjuman-Ara F; Sultana S. Breast-feeding counseling and its effect on the prevalence of exclusive breast-feeding. *J Health Popul Nutr.* 2002; 20(4):312-316.**

The important and excellent intervention study was initiated to assess the impact of repeated breast feeding counseling on the rate of exclusive breast feeding up to five months. The study was carried out during March 1998- February 2000. Two breast feeding counseling centres were established in the vicinity of the two maternity centres. Another centre was established in children hospital in Dhaka city. Eighty four pregnant mothers who attended the maternity facilities for delivery of babies were randomly selected and counseling regarding breast feeding one just before delivery and subsequently at the completion of 1,2,3,4,5,6,7,8,9 and 12 months of age of the child. These child mother pairs comprised the intervention group. Another group of 90 child mother pairs was selected from the maternity facilities. Mothers in this group received a single session of breast feeding counseling just before delivery of babies. Fifty-nine and fifty-five child mother pairs in the intervention and the comparison groups respectively completed in the mean years follow up. In the intervention group, 54.2% and in the comparison group 36.4% of the babies were exclusively breastfed up to five months of age. Forty-two children in the intervention group and 29 (53%) in the comparison group were given complementary foods at the optimum time. After completion of five months, and 81% of the children in the intervention group and 100% of the children in the comparison group were given complementary foods in the first year of life. It was also food that repeated organized breast feeding counseling significantly improved the prevalence of exclusive breast feeding to 54% which is much above the existing national prevalence in Bangladesh. The findings of the study suggested it should be established an organized repeated breastfeeding counseling centre especially at the community level so that the maximum number of pregnant and lactating mothers may have easy access.

**373. Holman DJ; Grimes MA. Colostrum feeding behavior and initiation of breast-feeding in rural Bangladesh. *Journal of Biosocial Science.* 2001; 33: 139-154.**

The purpose of this study was to examine the prevalence of colostrums feeding and time to initiation of breast-feeding in rural Bangladeshi women. Factors that affected the proportion of women who fed their children colostrums, and factors that affected the time to initiation of breast-feeding were examined. The effect of study design was examined by comparing results obtained from interviews taken shortly after parturition with those taken weeks and months after parturition. This study was part of a larger 11 months prospective study of birth spacing and fecundity conducted in 1993 among 28 rural villages in Matlab Thana. The study showed that 90% of the mothers reported feeding their child colostrums. A logistic regression found no effect on the prevalence of colostrums feeding from the following covered: mothers' age, parity, history of pregnancy loss, child's sex, mothers' self-report of delivery complications and the time from birth to interview. Fifty-nine percent of mothers initiated breast-feeding within 4 hours and 88% within 12 hours of parturition. Survival analysis was used to estimate the effects of covariates on the time from delivery to initial breast-feeding. Time to initial breast-feeding was delayed slightly, but significantly, for older mothers, for male infants and by mothers who did not report delivery complications. The percentage of mothers who fed their child colostrums was higher and times to initial breast-feeding were shorter, than almost all-previous reports from South Asia. These findings must be explained, in part, by methodological differences among studies, but it suggested that recent changes towards earlier initiation of breast-feeding which had taken place in the rural Bangladesh.

**374. Hossain MA; Khanom K; Begum J; Jahan N. Nutritional status of under five children of mothers working in some selected garment factories of Dhaka city. *JOPSOM*. 2001; 22 Suppl.: 10-13.**

The objective of the study was to determine the nutritional status of under-five children of mothers working in some selected garment factories in Dhaka city. This cross sectional study included 103 purposively selected mothers of under-five children working in garments factories. Data were collected by interviews of the mothers using a structured questionnaire. Anthropometric measurements of the children were taken to assess their nutritional status. Respondents were selected from two garment factories, one at Mohakhali and the other at Shyamoli. The study period was from March to June 1999. The study found out of 103 children, 41% had 1<sup>st</sup> degree malnutrition, 35% had 2<sup>nd</sup> degree, 9% had 3<sup>rd</sup> degree malnutrition and only 16.53% had normal nutritional status. Among all children, 57.3% was under weight and 8% was miasmic. Z-score classification found 46% children as nutritionally normal, 43% as stunted, 5% as wasted and 9% as both stunted and wasted. Measurement of mid-upper arm circumference showed 38% children as nutritionally normal, 42% with mild to moderate malnutrition, 19% having severe malnutrition and with 1% having extremely severe malnutrition. Seventy percent of the study mothers were illiterate and most of their children (64%) were malnourished. Children's nutritional status was significantly ( $p < 0.05$ ) associated with maternal education, nutritional knowledge and weaning practices. There was no statistical association between family income, immunization, child rearing practice and family type. The findings of the study suggested that maternal education, nutritional knowledge and child feeding practice specially weaning practice have important positive role to improve children's nutritional status.

**375. Hossain MI; Wahed MA; Ahmed S. Increased food intake after the addition of amylaserich flour to supplementary food for malnourished children in rural communities of Bangladesh. *Food and Nutrition Bulletin*. 2005; 26(4): 323-329.**

The main objective of this study was to assess the effect on food intake of adding amylase rich flour (ARF) from germinated wheat to supplementary food among children in nine rural community Nutrition Centers under the BINP. This study was carried out in nine BINP community nutrition centers in Sadar Thana of Norsingdi District of Bangladesh from December 1998 to April 1999. The centers were selected randomly from all CNC in the district and were randomized in equal number to three different diets. The composition of the diets was the same. However, the consistency and calorie density were altered by adding either ARF in water. The study results revealed that the mean SD intake of supplementary food from a single meal by children completing six weeks of the diets was higher for children recurring ARF-SF than for those receiving S-SF or W-SF. The weight of vomited food was significantly higher for children receiving W-SF than for children in the other two groups. Weight gain and increments in length and weight for height were higher for children who received ARF-SF than for children in the other two groups but the differences were not statistically significant. The acceptability of ARF-SF was higher than that of the two other diets. In its conclusion, it may be stated that addition of ARF in existing standard supplementary food, as used under the BINP program is a simple and effective means to increase the intake of food by changing its consistency, thus making it easier for malnourished children to digest.

**376. Hyder SMZ; Persson LA; Chowdhury AMR; Lonnerdal B; Ekstrom EC. Effectiveness of the daily and weekly doses of iron supplementation in pregnancy and puerperium on haemoglobin and iron status at 6 weeks postpartum. Dhaka: BRAC, 2000.**

The study was undertaken to describe the effectiveness of continuous daily and weekly doses of iron supplementation during pregnancy and puerperium on hemoglobin and iron status at 6 weeks postpartum. For the study, an iron supplementation trial conducted at antenatal care center (ANCC) assigned randomly either to the daily (1x60-mg) or weekly (2x60-mg) doses of iron supplementation. The study was conducted on fifty community based ANCs in a rural area of Bangladesh. In the trial 209 women during 2<sup>nd</sup> trimester were recruited. Fifty-one were lost to follow-up and the final sample size consisted of 158 women. In the intervention process of the study, each woman in the daily group received 1 tablet (60mg Fe) per day and in the weekly group 2 tablets (120mg Fe) per week. The study findings revealed that at 6 weeks postpartum, hemoglobin and iron status did not differ between the two-supplementation groups. However, an overall improvement in hemoglobin and iron status was observed compared to the baseline status. Women who took  $\geq 40$  doses tablets in 11 weeks had higher hemoglobin ( $p=0.05$ ) and SFT ( $P=0.04$ ) and lower sTfR ( $P=0.32$ ) at 6 weeks postpartum. A significant observation of the study was a lack of response between the daily and weekly doses of iron supplementation. The study confirmed that higher number of iron tablet intake during pregnancy and puerperium was associated with better hemoglobin and iron status at 6 weeks postpartum.

**377. Islam F; Chowdhury S; Rahman F. Impact of zinc supplementation during pregnancy on low birth-weight in a periurban area of Bangladesh: randomised, placebo controlled trial. *Bangladesh J Child Health*. 2004; 28(3): 90-94.**

The study was driven to evaluate the impact of zinc supplementation in pregnant women during last two trimesters in low birth weight. A double blind, placebo controlled trial has been conducted at the Institute of Child and Mother Health (ICMH). A total of 320 pregnant women in second trimester (22-24 weeks) attending the ANC clinics of ICMH were recruited and randomly assigned to receive 30 mg elemental zinc/days (n=160) and placebo (n=160). Supplementation continued until delivery. Whole blood zinc was estimated before starting zinc supplementation and from cord blood of the babies after delivery. Finally, birth weight of 164 singleton newborns was measured within 30 minutes of birth at ICMH. The study focused cord blood zinc level was significantly higher in the zinc supplemented group than in the placebo group (6.94  $\mu\text{mol/L}$  compared with 5.77  $\mu\text{mol/L}$ ,  $p=0.002$ ). No significant effect of zinc supplementation was observed on birth weight (2856  $\pm$  524 gm compared with 2803  $\pm$  496 gm,  $p=0.50$ ) proportion of birth weight was slightly lower in zinc supplemented group (21.4%) than that of placebo group (22.7%). This trial did not find enough evidence on the positive impact of zinc supplementation on low birth weight (LBW). Hospital based recruitment and hospital delivery render high drop out (49%) which had high chance of altering the outcome. Large scale community based research was needed to establish the benefit of zinc supplementation in pregnancy to reduce low-birth-weight.

**378. Islam SKN; Ahsan T; Khatun S; Khan MNI; Haque S; Ahsan M. Correlation between vitamins (E,C &A ) and blood pressure in pregnant and non-pregnant women. *Bangladesh Journal of Nutrition*. 2003; 16: 59 -64.**

The purpose of this study was to determine serum concentration of vitamin E, C and A of pregnant and non-pregnant women, and to examine their relation with blood pressure and maternal characteristics. The study was performed prospectively in the Dhaka Medical College Hospital and Bangabandhu Sheikh Mujib Medical University. The study included 30 pregnant women of 28 to 42 weeks of singleton gestations, and thirty non-pregnant women of childbearing age. The results of the study revealed that the serum vitamin E, C and A levels of the pregnant women were found to be  $23.54 \pm 8.5$ ,  $14.0 \pm 8.2$  and  $0.85 \pm 0.24$   $\mu\text{mol/l}$   $20.4$  and  $0.99 \pm 0.20$   $\mu\text{mol/l}$  respectively with non-pregnant ones. Major variations were demonstrated in the concentrations of the vitamins in both pregnant and non pregnant women. Significant correlations were observed within vitamin C and diastolic blood pressure and between vitamin E and parity in the case of pregnant women. It was also turned to be significant between vitamin C and vitamin E and diastolic pressure in the case of non pregnant women. It came out from liner regression analysis that regression co-efficient  $B=0.301$  with  $P=0.079$  and  $L=1.814$  for vitamin and diastolic pressure, and  $B=-0.272$  with  $P=0.115$  and  $L=1.621$  for vitamin E and parity for pregnant mothers category. While the regression co efficient  $B=0.348$  with  $P=0.059$  and  $E=1.966$  for vitamin C and systolic pressure,  $B=0.352$  with  $p=0.056$  and  $t=1.990$  for vitamin A and systolic pressure, and  $B=0.317$  with  $p=0.088$  and  $t=1.769$  for vitamin E and diastolic pressure were recorded for non pregnant women. Maternal characteristics do not have much influence on the antioxidant vitamins. Some strong attempts are needed to overcome this situation.

**379. Islam SKN; Ahsan T; Khatun S; Hossain KJ; Kalam MA; Ahsan M. Antioxidant vitamin status of healthy man, woman and pregnant mother: a baseline study. *Bangladesh Journal of Nutrition*. 2001; 14: 5–12.**

The study was intended to assess the antioxidant vitamin status of healthy man, woman and pregnant mother in Bangladesh. A Cohort of one hundred and fifteen subjects, comprising fifty men, thirty non-pregnant women and thirty five pregnant mothers had been investigated for their serum- $\alpha$ -tocopherol, ascorbic acid and retinal levels. HPLC was employed to analyses the serum  $\alpha$ -tocopherol, retinal and spectrophotometric method was used for estimation of serum ascorbic acid level. Mean serum  $\alpha$  tocopherol levels for men, women and pregnant mothers were found to be  $14.9 \pm 3.2$ ,  $13.1 \pm 5.96$  and  $22.5 \pm 8.07$   $\mu\text{mol/L}$  respectively, while their serum ascorbic acid were found to be  $31.6 \pm 11.4$ ,  $30.7 \pm 20.4$  and  $14.0 \pm 8.5$   $\mu\text{mol/L}$  respectively. Their serum retinal levels were found  $1.38 \pm 0.33$ ,  $0.99 \pm 0.20$  and  $0.85 \pm 0.25$   $\mu\text{mol/L}$  respectively. Serum ascorbic acid for man ( $31.6 \pm 11.4$   $\mu\text{mol/L}$ ) and non-pregnant woman ( $30.7 \pm 0.4$   $\mu\text{mol/L}$ ) were also found to be equivalent, but were significantly ( $p < 0.001$ ) higher than that for pregnant mother ( $14.0 \pm 8.5$   $\mu\text{mol/L}$ ). Serum retinol level for man ( $1.38 \pm 0.33$   $\mu\text{mol/L}$ ) was found to be significantly higher than that for non-pregnant ( $0.99 \pm 0.20$   $\mu\text{mol/L}$ ,  $p < 0.0001$ ) and pregnant mother ( $0.85 \pm 0.25$   $\mu\text{mol/L}$ ,  $p < 0.001$ ). Pregnant mothers were found to have higher level of serum  $\alpha$ -tocopherol, but lower levels of serum ascorbic acid and retinol as compared to the non- pregnant woman. The later two serum vitamins were observed to be higher for man as compared to those for pregnant mother. Amongst pregnant mother, 22.9%, 45.7% and 20.0% mothers were found to have respectively low serum levels of  $\alpha$  tocopherol, ascorbic acid and retinol.

**380. Kabir A; Barbhuiya MAK; Islam MS. Duration of breast-feeding and its determinants in Bangladesh. *JOPSOM*. 2000; 19(1): 12-17.**

The objective of the study was to identify and analyze the factors influencing the duration of breast-feeding in Bangladesh. The study utilized data derived from the 1989 Bangladesh Fertility Survey (BFS 1989). In BFS 1989 through two-stage probability sampling, 11,729 households were selected. A total of 12,096 married women were interviewed. Multiple classification analysis (MCA) was chosen as the method of data analysis. The results of the multiple classification analysis indicated that younger women tended to have shorter duration of breast-feeding than older women breast-feed. The study revealed a significant change in the breast-feeding pattern by parity and age of mother. A negative relationship was found within the education and breast-feeding. It was seen that rural women breast-fed their babies for longer period. No statistically significant relationship was observed between duration of breast-feeding with women's work, sex of the child, religion or region. Most women in Bangladesh breast-fed their infants for a long duration. Children of higher parity were breast-fed for longer periods than children of lower parity and children born to older women were more likely to breast-feed for longer periods than children born to younger mothers were. Among the socio-economic and cultural factors that influenced on the duration of breast-feeding, the educational attainment emerges as most important. Lower educational levels and rural lifestyle tended to be associated with a greater likelihood of continuing breast-feeding. Each of the factors associated with longer duration of breast-feeding appears to signify a division between the more traditional and modern groups in Bangladesh. Higher parity and aged lower educational attainment and rural residences are all associated with a more traditional life-style that was more conducive to prolonged breast-feeding. Among the same groups, the economic resources and access to easily prepared supplementary foods might be absent thereby encouraging prolonged breast-feeding. The results suggested that the duration of breast-feeding trends to go down as the education of the mothers increased. The results also suggest that in all the instances, women with rural background experienced a higher duration of breast-feeding than their urban counterpart.

**381. Kabir AFMI; Levinson J. Bangladesh: breaking the malnutrition barrier key to development. Dhaka: World Bank, 2001**

This study was carried out to review the nutrition sector to look at past achievements and current programs condition to ensure that malnutrition would cease to be a major public health issue in Bangladesh, as envisaged in national plan of action for nutrition. For this study several documents and national plans have been reviewed. The study findings exposed that level of malnutrition in Bangladesh remained highest in the world, 58% of under-5 children were underweight and 51% are stunted; nearly 50% women suffer from chronic energy deficit; low birth weight estimated at 45%, the economic consequences of Bangladesh's malnutrition problems were profound. A first generation of strategic goals had been achieved in Bangladesh, most of them in the last sector review. They had been gained a significant support from the Government for nutrition which was substantial. Although the focus remains on direct service delivery, rather than addressing the underlying cause of the problem. An effective programmatic approach (the Bangladesh Integrated Nutrition project, BINP) had been developed, and eventually would be incorporated into national nutrition program. Major health sector reforms and rationalization on food policies which support nutrition goals had also been implemented. The review made clear that malnutrition reduction would be impossible without policy and programmatic attention to household food security. While lauding Bangladesh's

rational food policy reforms, it pointed out that consumptions effect must be assessed and incorporated in decision making on agricultural policy measures, if these policy measures was to have the requisite effect on rural incomes and food access. With regard to financial considerations, the provisional estimate indicated that the cost of a carefully reasonably, and well within the limit of 0.5% of GDP suggested for countries with similar level of malnutrition. The study confirmed that the current cost of malnutrition had been estimated at \$1billion annually. The recommended actions would cost, when fully implemented, only one-quarter of that amount, about \$ 246 million annually. Making this investment and breaking the malnutrition barrier was keen to Bangladesh economic and social development.

**382. Karim R; Desplats G; Schaetzel T; Herforth A; Ahmed F; Salamatullah Q; Shahjahan M; Akhtaruzzaman M; Levinson FJ. Seeking optimal means to address micronutrient deficiencies in food supplements: a case study from the Bangladesh Integrated Nutrition Project. *J Health Popul Nutr.* 2005; 23 (4): 369-376.**

The purpose of this research was to identify the optimal means of increasing the micronutrient contents of the BINP d supplement to make it more appropriate to the needs of the beneficiaries. Micronutrient gaps for the four BINP beneficiary groups were determined using methodology developed specifically for this project by beater, modeled after beater earlier work. The four groups of project beneficiaries with target intakes defined as requirements for iron, calcium, zinc vitamin A, vitamin-C, riboflavin, riancin, and vitamin B12 recommended by the FAO/WHO. Primary focus was placed on iron and vitamin A. cost and bulk constraints analysis, based on cost of supplement, feasibility of delivery and serving volume needed to achieve micronutrient targets, were used for comparing the supplement options. In terns of this analysis, the micronutrient multi-mix proved, by far to be the most advantages. Food options, however, are arguably desirable in that dietary, they provide dietary benefits additional to that of known micronutrients and may increase demand to boost production of domestic fruits and vegetables for the population as a whole. The study recommended that the use of pro-ward micronutrient mixes for such specific purposes as supplementary food enrichment and food fortification is fully justified. But encouraging the production and consumption of micronutrient rich foods through programme messages is needed.

**383. Khan MSH; Chakraborty N; Rahman APMS; Nasrin T. Follow-up/impact evaluation study on nutrition gardening training of the National Nutrition Program (NNP): Dhaka: NIPORT, 2005.**

The objective of this study was to determine the efficacy of the project's service delivery and training components. The specific objectives were: to measure and analyze the performance of the project in regard to the planning and implementation of the training; to measure the performance of the training personnel with particular emphasis on quality and coverage of training; to determine wherever there were changes in the acceptance of nutrition gardening services in the communities served and target beneficiaries. A dramatic change was reported in production and consumption of vegetables after receiving nutrition gardening training. While 27% beneficiary women produced radish before the training, it increased to 74% after the nutrition gardening training. Similar changes have also been observed for most of the different types of vegetables such as tomatoes 19-50%, lalshak 34-91%, palongshak 13-70% and kalmie 3-41%. Nutrition gardening is a source of surplus vegetable for about 46% beneficiary women who can now sell and earn money from it. On the average a beneficiary women could earn about 80 taka per week by selling their surplus vegetable products.



However for vast majority 95%, nutrition garden is a source of more vegetables for consumption, and an opportunity for extra income 74%. The respondents were asked about their opinion regarding the benefit of nutrition gardening program as well as the mode of benefit they derived from such program. Almost all mentioned that they got some benefit from the program. Their opinions were no need to purchase vegetables (81%), opportunities to consume more vegetables (74%), create opportunities for extra income (48%), and added solvency in the family 20%. The nutrition gardening training needs to be expanded so that more villagers, especially more women are engaged in nutrition gardening for production of micro-nutrient rich vegetables and fruits. It is recommended that the program should give more emphasis to certain aspects such as: how to manage and control insect attacks, use of fertilizer, and how to preserve the quality of produced goods in regard to nutritional value and market price. Emphasis should be given to hands-on practice training. It would be helpful if CNPs or other government agricultural extension workers and associated NGO staff demonstrate how to make nutrition garden. Training for only 2-3 days seems to be not enough. It is also recommended to organize refresher training to maintain and accelerate momentum in the practice of nutrition gardening.

**384. Khan MM; Ahmed S; Protik AE; Dhar BC; Roy SK. Effects of food supplementation program on the nutritional status of pregnant women in Bangladesh. *Food and Nutrition Bulletin*. 2005; 26(4): 330-337.**

This paper estimates the effectiveness of BINP's food supplementation and nutrition education on the nutritional status of pregnant women. Three effectiveness measures were considered in the study: target efficiency, improvements in the nutritional status of beneficiaries, and the persistence of nutritional effects. To isolate the effects of the intervention, the nutritional status of participants and non participants was compared after controlling for various demographic and socio economic characteristics. Data were collected in 2000 from a random sample of 3,262 household in a BINP intervention area. The results showed thirty nine percent of pregnant women were correctly targeted by the programs food supplementation activities, the nutrition program reduced the prevalence of thinness among participant women by about 3 percentage points' per-months of enrollment. The prevalence of thinness among program graduates was 62% which was much higher than that of the matched (non participant) group (35%). This finding is perplexing but it may simply imply that these who enrolled at the initial phase of the project were severely under weight and they fell back to their original status within a short period of time. The prevalence of nutrient or severe under weight in women who exited the program after completion of the enrollment period was found to be much higher than in women of similar age and socioeconomic status in the community. This apparent lack of persistence of program benefits requires careful re- evaluation of alternative mechanisms for improving the long- term nutritional status of women.

**385. Khan MR; Sultana N; Ahmed F. Nutritional status and food habit of adolescent school girls in a rural area of Bangladesh. *Bangladesh Journal of Nutrition*. 2000; 13: 1-10.**

This study was designed to analyze the nutritional status and food habit of a selected group of rural adolescent school's girls. A total of 136 rural adolescent school's girls were examined for their nutritional status and food habit. The girls were students of class seven to ten of two girls' high school in a rural area of the district of Gazipur. Anthropometric grading was made by comparing with the NCHS medium. The results of the finding showed that 60% of were girls

were stunted (height for age <95%), 36% were underweight (weight for age <75%), 32% were thin (weight for height <90%). Analysis of blood revealed presence of anemia (Hb <12g/dl) in 21% of the girls. Seven percent of the girls had sub-optimal serum retinal concentrations (<30 ug/dl). Low serum iron concentration (<60 mg/dl) was observed in 40% girls, and 57% of the girls were iron deficient (TS < 15%). Nearly all of the girls were marginally deficient in zinc and 12% were marginally deficient in copper. Seven-day food frequency analysis showed wide variation in food intake pattern. Among the foods of animal origin, fish were more common than meat. Eggs and milk did not occupy satisfactory positions in their diet. Most surprisingly, vegetables were not much common in their diet. In absence of adequate amount of meat in their diet, vegetables could be an important provider of dietary iron. The study suggested that there was needed to change their diet behavior through proper nutrition education.

**386. Khan MR; Ahmed L; Rahman MM; Abdullah M. Epidemiology of vitamin A deficiency in selected vulnerable population groups of Bangladesh. *Bangladesh Journal of Nutrition*. 2003;16:1-12.**

The main objective of this study was to delineate socio – economic, environmental, ecological and seasonal attributes of vitamin A malnutrition. Multistage sampling technique was used in this study. Accordingly, sixty households having at least one child from 2-5 years were selected purposively from among the landless or marginally landholding groups in each location. Data on food intake and clinical examinations were collected in two different seasons, namely rainy season (June-July) and winter (December-January). Poor intake of energy and nutrients were observed among the studied population. Almost all vitamin A is provided by vegetable sources. Total intake of vitamin A was significantly higher ( $P < 0.05$ ) in the rainy season in all the locations excepting the lower Ganges flood plain, where a higher but statistically non significant intake was observed in winter. Mean use rate pattern of food score of the observed children was significantly higher in the rainy season in all rural locations. Such seasonal differences were not found in the urban locations. A shift in VPF score distribution toward higher risk category in the winter was observed in the rural locations and also in the rural locations and also in slums in Dhaka. No cases of exophthalmia were found in the costal district of Patuakhali and slums in Dhaka. Prevalence of infections diseases was higher in the rainy season, and most of the exophthalmia affected children were focused to have suffered from diarrhea, dysentery, or measles before developing ocular signs. Seasonality and geographical variation in availability and intake of vitamin A, rich food sources and prevalence of exophthalmia were markedly observed. Children in the coastal region did not manifest any sign of vitamin A deficiency probably due to easy availability of small fishes.

**387. Kimmons JE; Dewey KG; Haque E; Chakraborty J; Dsendarp S; Brown KS. Low nutrient intakes among infants in rural Bangladesh are attributable to low intake and micronutrient density of complementary foods. *Journal of Nutrition*. 2005; 135: 444-451.**

This study assessed the adequacy of nutrient intake of 135 rural Bangladeshi breast-fed infants 6- 12 months of age and examined nutritional trade- off due to possible displacement of breast milk by complementary foods. Observers completed 12- hour daytime measurements of breast milk and complementary food intakes. Data for the previous 12 h were obtained from maternal recall, yielding estimates of total 24-h intakes. On average, infants mildly wasted (Mean + SD

weight-for length Z- score = - 0.92 +- 0.88) and mode rarely stunted (length-for- age Z – score = - 1.49+ 0.96). Total energy intakes at 6- 8 and 9- 12 months were 88 and 86 % of absolute energy require meant (kj / d), 106 and 105 % of require meats per kg body weight, and 97 and 94 % of requirements per median weight for – length, respectively. Breast milk contributed 78 % energy intakes at 6 -8 mo and 75 % at 9- 12 mo. Mean meal frequency and energy density of complementary foods were generally consistent with recommendations, but only small amounts of food were offered. Never the less, only 72 % of the food energy offered was consumed .Total energy intake was positively correlated with meal frequency quantity consumed per meal, and energy intake from breast milk, but not with energy density of complementary foods. Energy intake from complementary foods was inversely related to energy intake from breast milk. The dies fell short of recommended intakes for numerous vitamins and minerals. To conclude, although greater intakes of complementary foods were associated with higher total energy intake micronutrient intake remained low due to the low micro- nutrient density of the complementary foods consumed and the partial displacement of breast milk. Recommendations to increase the quantity frequency, or variety of foods offered should be accompanied by appropriate food safety guidelines

**388. Kimmons JU; Dewey KG; Haque E; Chakraborty J; Osendarp SJM; Brown KH. Behavior change trials to assess the facility of improving complementary feeding practices and micro-nutrient intake of infants in rural Bangladesh. *Food and Nutrition Bulletin*. 2004; 25(3): 228-238.**

The principal objective of the study was to determine the optimal means of improving complementary feeding of rural Bangladeshi infants, considering issues of local feasibility acceptability, and likely sustainability this study used a series of qualitative and quantitative techniques. It also used simple rapid assessment techniques. The study was conducted in rural Bangladesh and involved four separate short-term behavioral change trials. Depending on the trial, field workers recruited 30 to 45 infants 6- 12 months of age. Following recommendations to increase the amount of food provided to infants, the mean intakes form single meals increased form 40 + 23 g on day 1 to 64+ 30 g on day 7 (p< 0.05 ). In a second trial, the mean meal frequency increased form 2.2 + 1.3 on day 1 to 4.1 + 1.3 on day 7 ( p< 0.05). Provision of high energy–density diets, prepared by decreasing viscosity with x analyze on by hand-mashing piece and dhal into a paste before feeding, increased single- meal energy consumption form 54+ 35 kcal to 79 + 52 kcal or 75 + 37 +kcal ( p<0.05 ), respectively. Both types of micronutrient supplements were well accepted and used according to recommendations. In fine, it was possible to change short term child- feeding behaviors to promote increased food intake, meal frequency and micro nutrient consumption. Because each of these interventions lasted for only about one week, however, the long term, the sustainability of these changes is not known. The effect of increased feeding of complementary foods intakes of breast milk and total daily consumption of energy and nutrients requires further study.

**389. Kiss L; Arifeen SE; Khan SR. Nutritional status of mothers and children in Bangladesh. In: *BDHS 1996-97 special analysis*. Dhaka: NIPORT/Measure DHS+, 2000. pp. 134-166.**

The objective of this study was to identify the nutritional status of mothers and children in Bangladesh. Reviewing several documents and survey reports including BDHS was considered for this study. The study findings revealed that still the prevalence of malnutrition

in Bangladesh was comparatively high. Malnutrition contributed to more than 50% of all childhood mortality. Inadequate food intake and illness caused nutrition problem to children. In recent years malnutrition was gradually declining. The majority of children began to breast feed within 24 hours but it delayed for 40% of children. One of the major findings was that a large number of children were not receiving appropriate foods by 6-11 months of age. Approximately 55% of children aged under-five years were stunted and 18% were wasted and 57% of children were underweight. Several findings here had immediate policy implications. Improvement in nutritional status should be expected as the family planning programme achieves success. The study showed strong association between nutritional status and socio-demographic indicators. Children living in poor households or born to parents who were not educated were at much risk of being stunted. Findings about nutritional status of women showed that maternal malnutrition was a major problem in Bangladesh. More than 50% of non-pregnant women suffered from chronic energy deficiency and more than 13% had short stature, signaling a greater risk to obtain of obstetric compliance. Maternal malnutrition estimated BMI less than 18.5% was associated with poverty that reflects food insecurity. Lactating women were more likely to malnourished, in part because of their higher food/nutrient requirements. The study suggested that additional programs/activities to promote better nutrition and increasing food consumption during pregnancy and lactation needed and it also needed long-term efforts to improve household food security. Facility of health care services should be increased and small-scale obesity prevention programs could be piloted to the high-risk populations.

**390. Lopa SK; Alim SR; Mohiduzzaman M; Salamatullah Q. Knowledge and practice on vitamin-A among populations of two different socio-economic classes. *Bangladesh Journal of Nutrition*. 2002; 15: 33–40.**

The study was undertaken to assess the knowledge and practice on vitamin-A among two different socioeconomic classes of respondents' from Dhaka University Staff Quarter and Zigatala slum area. This study includes 200 households where, 100 were from Dhaka University Staff Quarter and the remaining 100 were from Zigatala slum area. Questionnaire was designed to collect information regarding knowledge and practice on collect information regarding knowledge and practice on vitamin-A. For collecting data, researchers visited the house of the respondents. The study findings revealed that education and solvency were the two prime factors in terms of knowledge and practice. About 83% respondents of DUSQ and 32% respondents of slum were aware about vitamin-A deficiency diseases. Regarding practice 57% household of DUSQ and only 28% of slum dwellers fed vegetables to their children within six months of age. A difference in the knowledge about vitamin A rich food was also observed among the two respondent groups. In the contrary 95% respondent from DUSQ and 92% respondent from slum had knowledge about VAD and 84% from slum and 40% form DUSQ feed VAC to their children. This difference was due to the fact that health workers visited the slum and administer vitamin-A capsule VAC to the children, such service was not available for the DUSQ respondents. The study recommended that effective and continuous dissemination about VAD must be propagated and also the present KAP program on vitamin-A should be strengthened to achieve a better health of our nation.

**391. Mannan MA; Malek MA; Sultana N. National food and nutrition policy activities in Bangladesh. *South Asian Journal of Nutrition*. 2001; 3 (1 & 2): 37-46.**

This study was taken to assess the policy formulation process, implementation status and progress of achievements in the country. Qualitative method was used for information and data collection. Rapid appraisal technique was used to collect key information on the formulation process, implementation status, and progress of the national food and nutrition policy of Bangladesh. A semi structured interview guide was designed for interviewing key informants. Six focus group discussions (4 sessions with 7 persons in each group and two sessions with 8 persons in each group) were held separately with a total of 44 participants. The food and nutrition policy in Bangladesh was formulated by multi-sect oral approach, facing several conflicts and reaching consensus through compromises. Continuity of political commitment and stakeholders' interest towards nutritional improvement is essential for successful policy implementation. Information on the implementation of four major sect oral policy guidelines showed some positive progress, but still some of the activities need to be initiated. Achievement in food production, increased awareness on nutrition, use of dietary guidelines, increased budgetary allocation and reduction of malnutrition are encouraging progress of the policy. Strong co-ordination among government and non- governmental organization in implementing the policy guidelines to achieve the desired goal is important.

**392. Moni MA; Rahman M; Flora MS; Rahman MA; Haque MA; Islam MS; Akter SFU; Ahmed K. Nutritional status of infants under six months of age. *JOPSOM*. 2006; 25(1): 1-7.**

The objective of the study was to determine the nutritional status of infants aged six months and below. The cross sectional study was carried out on infants under-six months of age in the out patient departments of ICMH, Matuail, Dhaka. A total of 190 children were taken as sample and convening sampling technique was used. A pre tested interview schedule and check list were used to collect data. Data were analyzed by computer using SPSS. The study was done on infants up to six months of age in ICMH, Matuail Dhaka. A total of 190 infants were studied. Among 190 infants 60.5% were male and 39.5% were female. Nutritional status of infants was determined by Z score of weight for age, height for age and weight for height and head circumference percentile for age. By WHZ scoring only 1.6% infants were wasted 96.8% were normal and 1.6% was obese. In WHZ score, 3.2% infants were under weight, and the rest were normal weight. In HAZ score, 14.2% infants were stunted. By HCPFA, 10.5% infants fall under normal cut off value of 5<sup>th</sup> percentile and the rest were within the normal range of 5<sup>th</sup> to 98<sup>th</sup> percentile. The findings of the study indicated that majority of infants was well nourished in term of wasting and underweight. Stunting and microcephaly were focused higher in proportion.

**393. Mozumder ABMKA; Barkat-e-Khuda; Kane TT; Levin A; Ahmed S. The effect of birth interval on malnutrition in Bangladeshi infants and young children. *Journal of Biosocial Science*. 2000; 32: 289-300.**

This study was undertaken to investigate the independent effect of the length of birth interval on malnutrition in infants and children aged 6-39 months. Data for this study were drawn from a post-flood survey conducted during October-December 1988 at Sirajganj of the Sirajganj district and at Gopalpur of the Tangail district in Bangladesh. The survey recorded the individual weights of the 1887 children. Cross-tabulations and logistic regression procedures

were applied to analyze the data. The proportion of children whose weight-for-age was below 70% (moderate-to-severely malnourished) and 60% (severely malnourished) of the NCHs median was tabulated against various duration of previous and subsequent birth intervals. The odds of being moderately or severely malnourished were computed for various birth intervals e.g. (i) controlling for the number of older surviving siblings; (ii) maternal education and age; (iii) housing area (a proxy for wealth); (iv) age and sex of the index child; (v) the prevalence of diarrhoea in the previous 2 weeks for the index child. The results of the study clearly indicated that the index children in families with short subsequent birth intervals were significantly more likely to be moderate-to-severely or severely malnourished than those children in families having longer intervals before the birth of another child in the family. The proportion of children who were under 60% weight-for-age decreased with the increase in the length of the subsequent birth interval, maternal education and housing area. The proportion of malnourished children increased with the number of the old surviving children. Children were at higher risk of malnutrition if they were female, their mothers were less educated, they had several siblings, and either previous or subsequent siblings were born within 24 months. The study indicated the potential importance of longer birth intervals in reducing malnutrition in children. The study showed significant findings that must point the way to development of a number of specific interventions that would help to reduce the still unacceptably high level of malnutrition in Bangladesh, and many other countries of the world.

**394. Ortolano SE; Mahmud Z; Kabir AFMI; Levinson FJ. Effect of targeted food supplementation and services in the Bangladesh Integrated Nutrition Project on women and their pregnancy outcomes. *J Health Popul Nutr.* 2003; 21(2): 83-89.**

Monitoring data from the Bangladesh Integrated Nutrition Project and new data collected for this purpose were analyzed to assess the effects of targeted project services, including supplementation of food, on malnourished pregnant women (women with a body mass index [BMI] of  $\leq 18.5$  in early pregnancy). Monitoring data on 456 women – 195 receiving food supplement and 261 not – were collected from 17 pails (sub-districts) in four districts of Bangladesh. The assessment found that, despite lower economic status, the women with low BMI receiving supplementation of food and intensified services were more likely to have adequate pregnancy-related weight gain than the more economically-advantaged women with higher BMI. Primigravida receiving supplementation were also more likely to have adequate pregnancy-related weight gain than the better-off non-supplemented primigravida (85.7% vs 51.9%,  $p=0.044$ ). The mean birth-weights of infants of the supplemented women with low BMI were comparable to those of the better-off, non-supplemented women. Results suggested that well-designed and well-implemented pregnancy interventions, like those implemented in the BINP, at least in areas where BMI was particularly low, have the potential to affect pregnancy outcomes in a significantly positive fashion, and, by extension, the nutritional and well-being of the nutrition and health of mothers and young children. Review of monitoring data should not be the primary means for stating such a conclusion but could help identify areas for further research.

**395. Rahman MF; Bhuiyan MAM; Alam MT; Alam MJ. Breast feeding practices among working mothers: a community survey. *Bangladesh Armed Forces Medical Journal.* 2002; 30: 15-19.**

The objective of the study was to identify the problems being faced by working mothers residing in the slum areas at Dhaka City to breast-feed their babies. This study was carried out

on 200 working mothers in a selected slum area in Dhaka City to assess their breast feeding practices during the period from March-June 1998. Of the 200 working mothers, 70 (35%) were maid servants, 60 (30%) were garments workers, 50 (25%) were found to do business (road side self lifting shop and ferrying) 18 (9%) were NGO worker and 2 (1%) were Govt. employees. The financial conditions of 82 (41%) working mothers were found to be satisfactory and 118(59%) working mothers had unsatisfactory income. In satisfactory income group of working mothers 17(8.5%) gave exclusive breast feeding up to 3 months since birth. Of the working mothers, 47.50% were literate and 52.50% were illiterate. The findings of the present study revealed that 22% working mothers gave exclusive breast feeding to their child up to 3 month, 30% gave up to 5 months. The illiterate working mothers with unsatisfactory income were found to give exclusive breast-feeding for longer duration than the literate working mothers. Seventy-six percent mothers who were working in garments could not give breast feeding to their child during working hours. Fifty-five point percent working mothers were found to have knowledge regarding how to enhance breast milk. Seventy-six point five percent mothers were found to have awareness that the children suffered from health deficiency if they were deprived of breast-feeding. Seventy percent mothers reported that they were not allowed to carry their child to their working places for the purpose of breast-feeding. Sixty-five percent mothers perceived that their work interfered with the breast feeding practices. According to time interval it was found that 90 (45%) working mothers gave first breast feeding to their child within an hour of birth, 23% gave first breast feeding within 1-6 hours of birth and 32% working mothers gave first breast feeding to their child within 7-72 hours of birth. Forty-five percent working mothers gave breast feeding to their child during working hours while 55% could not during working hours. It was concluded that the working women children were deprived of different degrees from breast milk which was essential for growth and development of a child but was not replaceable artificially. The Organizational authority should create facilities in the working place to kept children of working mothers so that they could breast fed their children during break time and in between working hours.

**396. Rahman S; Nessa F; Banu S; Rashid MA. Effect of nutrition education and iron-folate supplementation during pregnancy on birth weight. *South Asian J. Nutr.* 2001; 3 (1 & 2): 53-58.**

The study was undertaken to examine the effect of nutrition education and use of iron and folic acid by pregnant women on birth weight of the newborn. This study was conducted in four unions of a selected Thana of Rajshahi District. Two unions were used as experimental group and two as control group. One hundred and fifty pregnant women from each area were exposed to nutrition education and supplied with iron and folic acid tablets. The field investigators in the experimental area visited the sampled women regularly to ensure supply of iron and folic acid tablets support services and compliance. Every newborn was weighed within 48 hours after birth. The study results showed that pregnant women in the experimental unions in their last trimester were exposed to nutrition education and supplied with iron and folic acid. Percentage of low birth weight babies was much low in experimental area compared to the control area. Mean birth weight of the new born in the experimental area was 2688g, compared to 2498g in the control area. There was general improvement in the hemoglobin level among the women in the experimental area and pregnant women in this area also gained more weight compared to the control area. Study in Bangladesh that the birth weight of the infant was found to be related to mothers' weight height and body mass index. Iron supplementation, antenatal visits and some socio-economic variables were also related to

birth weight of babies. Newborn with weight 3100g and more were 10.6% in the experimental area and 4.0% in the control area.

**397. Rahman SMM; Kabir I; Akhter BMD; Begum H; Khaled MA; Rashid HA; Bhuyan MAH; Malek MA; Khan MR. Energy intake and expenditure of obese and non-obese urban Bangladeshi children. *BMRC Bulletin*. 2002; 28(2): 54-60.**

This study's aim was to compare the energy intake and expenditure of the obese children with those of non-obese in the Dhaka City of Bangladesh. This case control study was conducted among 220 obese children of 4-10 years age and selected randomly by age and sex methods controls from 5000 children. A 24-hour dietary recall was used to assess the energy intake and data on energy expenditure was obtained by 24-hours physical activity recall. The findings of the study revealed that the mean energy intake of obese children ( $2056 \pm 751$  Eal/d) was found to be significantly higher ( $P < 0.001$ ) than the non obese ( $1508 \pm 529$  Eal/d). No sex difference was found in those two groups. Mean energy expenditure of the obese children ( $1868 \pm 313$  kal/d vs.  $1459 \pm 200$  kal/d) was significantly higher than the non-obese ( $P < 0.001$ ). Of the obese, boys expended more energy than the girls ( $P = 0.01$ ). Furthermore, physical activity level (PAL) was significantly higher among the non-obese children ( $P < 0.001$ ). However, energy balance was significantly higher among the obese ( $P < 0.001$ ). Dose response of energy balance showed the estimated relative risk of obesity increased with higher level of energy balance ( $P < 0.001$ ). The findings of this study revealed that energy balances as a result of higher energy intake and lower energy expenditure was one of the important risk factors for the development of obesity among the children of Dhaka city. Thus, appropriate interventions like behavioral change regarding food habits and physical activities were recommended.

**398. Rice AL; Stoltzfus RJ; Franciso AD; Chakraborty J; Kjolhede CL; Wahed MA. Maternal vitamin-A or  $\beta$ -carotene supplementation in lactating Bangladeshi women benefits mothers and infants but does not prevent sub-clinical deficiency. *Journal of Nutrition*. 1999; 129: 356-365.**

The study was carried out to measure the effects of postpartum maternal vitamin A or B carotene supplementation on maternal and infant vitamin A status. Modified relative dose response (MRDR) ratios and breast milk A concentration were assessed during a community based trial in Matlab, Bangladesh. At 103 weeks postpartum women were randomly assigned to receive either a single dose of 200,000 interventional units 160,000 ratio equivalents vitamin A followed by daily placebo daily doses of B carotene 17.8 mg or B1 daily placebos until 9 no postpartum. Compare to placebos, vitamin A supplementation resulted in lower maternal MRDR ratios (i.e. increased liver stores) and higher milk vitamin A concentration at 3 mos, but these improvements were not sustained. The B carotene supplementation acted more slowly, resulting in milk vitamin A concentration higher than the placebo group only at 9 mo. Irrespective of treatment groups over 50% of women produced milk with low vitamin-A concentration throughout the study. Overall mean maternal serum rational concentrations were not affected by supplementation. Compared to the placebo groups the mean MRDR ration of 6 mo old infants were higher in the vitamin A groups. Infants (33%) had serum rational concentrations  $< 0.70$  pmol/L and 88% had MRDR ratios 70.06. The study suggested that while both interventions were beneficial neither was sufficient to current the underlying sub clinical vitamin-A deficiency of the women, nor to bring their infants into adequate vitamin status.



**399. Roy RD; Hyder SMZ; Chowdhury AMR; Manmud Z. Food supplementation and nutrition education for adolescent girls: lessons learned from a pilot nutrition initiative. Dhaka: BRAC, 1999.**

The study was designed to assess and compare the impact of a nutrition education programme, with or without food supplementation on long- term behavioral changes in health and nutrition practices among adolescent girls. The study population included three groups: adolescent girls receiving nutrition education and food supplementation under the pilot Nutrition initiative of BRAC from 1993- 95 in Muktagacha (n= 161) (NFPE- supple) adolescent girls receiving only nutrition education through BRAC non- formed primary education from 1993 – 95 in Samvuganj (n = 93) (NFPE); and comparable adolescent girls who did not receive either of the interventions in Dapunia (n = 151) (Comparison). Data were collected through house- to – house interview using a structured questionnaire. Results showed that nutrition intervention in the first two groups, with or without food supplementation, did not differ significantly with respect to the majority of the indicators. For example, knowledge about nutrition, attendance at the ante natal centre and growth monitoring sessions, feeding of colostrums, introduction of complementary foods at the correct age, composition of complementary foods, latrine use, hand washing practices after defecation, garbage disposal and maintaining a clean courtyard ( $P >0.05$ ) showed similar results for both groups. They both had significantly better knowledge and practices in all health and nutrition aspects than the comparison group ( $P <0.05$ ). While food supplementation may be useful in maintaining nutritional status during acute food shortage, it does not increase the effectiveness of nutrition education intervention intended to bring out long- term positive behavioral changes nutrition further attempts are required to increase the effectiveness of nutrition education intervention.

**400. Roy SK; Mannan MA; Islam KE; Laboni A. Impact of vitamin A supplementation on subsequent growth of Bangladeshi children with persistent diarrhoea. *South Asian J Nutr.* 2001; 3 (1 & 2): 31-36.**

The study was conducted to evaluate the impact of severe vitamin A level after vitamin A supplementation during persistent diarrhoea on subsequent growth during 3 months follow up. A double blind randomized placebo-controlled trial with prospective follow-up was carried out at the Center for Health and Population Research, ICDDR,B, Dhaka, Bangladesh. A total of 154 moderately malnourished (weight for age -2SD to 3-SD of NCHS standard) children of both the sexes aged 4-24 months with diarrhoea for more than 14 days were selected for the study. Vitamin A 3000 IU in a multivitamin syrup were given daily for 14 days, in addition to standard treatment for persistent diarrhea in the Dhaka Hospital of ICDDR, B. Compared to baseline values, the mean serum retinol level increased significantly 22 $\mu$ g/dl vs. 40 $\mu$ g/dl,  $p$  (0.001) after two week supplementation of vitamin A and there was significant co-relation ( $r=0.5$ ,  $p<0.001$ ) between weight gain and serum retinol level. The children having the lowest third of serum retinol level showed significantly reduced weight gain compared to those having higher serum retinol (-13g/kg vs. 69 g/kg body weight,  $p<0.0001$ ). The increase in body weight continued to be higher in the higher retinol group for subsequent eight weeks after supplementation (179g vs. 241g/kg of body weight  $p<0.03$ ). Weight gain of the children was positively correlative with the serum retinol level ( $p<0.01$ ) and inversely correlated with length of the child at admission ( $p<0.001$ ). Vitamin A supplementation improves serum retinol level and weight gain of malnourished children with persistent diarrhea. The study suggested

that here is also need to investigate why some children do not respond to vitamin A supplementation during persistent diarrhea.

**401. Roy SK; Fuchs GJ; Mahmud Z; Ara G; Islam S; Shafique S; Akhter SS; Chakraborty B. Intensive nutrition education with or without supplementary feeding improves the nutritional status of moderately-malnourished children in Bangladesh. *J Health Popul Nutr.* 2005; 23(4): 320-330.**

The purpose of the study was to find effective means of reducing moderate malnutrition in children through specific nutritional education the household level and also to change behaviour of mothers relating to child feeding practices care giving, and health seeking practices under the BINP. The study was conducted in rural Bangladesh among 282 moderately malnourished children aged 6-24 months. The results of the study showed that the nutritional status of children significantly improved in their home environment in a relatively short period, which has not been reported earlier. The study also showed that the nutritional status of children significantly improved in their house environment a relatively short period, which has not been reported earlier. The group having birth intensive nutrition education and food supplementation and better weight gain or improvement in nutritional status compare to the comparison group and the group which revived only interview nutrition education. The changing of feeding behaviour after nutrition education in the study had shown a significant shift from the traditional concepts and reacts of child feeding in the region. The frequencies of child feeding and have based complementary feeding improved significantly ( $p < 0.06$   $< p < 0.001$ ) in both the intervention groups after three months of intervention and six months of observation. Body weight gain was positively associated with length for age weight for frequent of feeding. Khichuri egg and potato ( $P < 0.05$ ) use of separate feeding parts, frequency of feeding and cooking of additional complementary foods improved significantly in the NE+SF groups compared to the comparison groups after three months of interventions and six month of observation. It many be concluded from the findings of the study that intensive nutrition education significantly improved the status of moderately malnourished children with or without supplementary feeding.

**402. Sarker NR; Taylor R. Weight loss during prolonged lactation in rural Bangladeshi mothers. *J Health Popul Nutr.* 2005; 23(2): 177-183.**

This article investigates the prolonged duration of lactation which is associated with weight loss in rural Bangladeshi mothers and its relationship with consumption patterns of principal food items. A cross sectional study was carried out among 791 lactating rural Bangladeshi mothers aged 18-40 years. The results of this paper showed that it was compared with 333 non pregnant and non lactating mothers of a similar age group. The duration of lactation was up to 60 months. This study identified that the frequency of consumption of different types of energy rich foods by lactating women was similar to those by non pregnant, non lactating women. Results of linear regression analysis showed that body weight was positively correlated with consumption of meat and milk. Probably the lactating mothers did not eat sufficient amounts of other energy rich foods, such as fish, egg, and pulse, to affect body weight. In lactating women energy needs increase by 30% over those of non pregnant, non lactating women. Therefore, during lactation rural mothers in this study lost body weight presumably because the energy needs of lactation plus normal energy must exceeded their energy intake. The study finally confirms that lactating mothers do not take additional foods during their lactation and loose body weight during the first 24 months of lactation due to the

effect of lactation. According to the findings of the study, it may be recommended that any food supplementation programme for breastfeeding mothers be continued up to the first 24 months of lactation to prevent weight loss due to the effect of lactation.

**403. Sarwar H; Bhuiyan AH; Mamum AA; Rahim ATMA. Impact of micro-credit on food consumption and nutritional status of selected rural poor. Comilla: BARD, 2003.**

The general objective of the study was to understand the scope of micro-credit on food consumption and nutritional status of the beneficiaries of small farmers and landless laborers' development project of Bangladesh Academy for Rural Development (BARD). The study was conducted in Comilla sadar Upazila among the landless household beneficiaries (possessed 0-0.5 acre of cultivable land) of small farmers and landless labors development project of Bangladesh Academy for Rural Development (BARD) those who were receiving micro-credit for at least five years from the project. To elicit information regarding this programme sample households were selected thoroughly stratified sampling procedure and data were collected through a standardized questionnaire. The study findings revealed that family size of SFDP beneficiaries (5.64) was bigger than non beneficiaries (5.20) of SFDP. Literary rate and per capita annual income were also higher at SFDP beneficiary level. Maximum beneficiaries received micro credit within the range of Tk. 4534.00 to Tk. 16,270.00 for income generating activities. Maximum beneficiaries used the micro credit for petty business and earned an amount of Tk. 8,349 to 25,073 as profit from income generating activities. Per capita per day food intake of SFDP beneficiaries was higher than non beneficiaries. In comparison per capita per day energy protein fat and carbohydrate intake of SFDP beneficiaries were higher than per capita per day intake of non beneficiaries of SFDP. By weight for age, the children of non-beneficiaries level by weight for age the children of non beneficiaries of SFDP were more victim of malnutrition compared with the children of SFDP beneficiaries. By height for age 77.59 percent of children of non beneficiaries and 70 percent of children of beneficiaries possessed height according to their age below standard and normal height for age. By weight for height, 68.39 percent children of non beneficiaries and 66.0 percent children of beneficiaries possessed weight according to their height below standard and normal weight for height. It is therefore, reasonable to recommend that micro credit should be given to poor to increase their income which in turn will help to improve their nutritional status.

**404. Shahaduzzaman; Bhiuyan MSA; Nahar P. A comparative study on knowledge of nutrition among adolescent girls exposed and non-exposed to nutrition intervention program. JOPSOM. 2001; 20(2): 73-76.**

The study objectives were to assess and compare the knowledge on nutrition among adolescent girls, exposed and non-exposed to nutrition intervention program. This study was conducted in Muktagacha Thana in Mymensing district where community based comprehensive nutrition intervention program of BRAC was running from 1992. The study population was two groups of adolescent girls from the non-formal primary schools of BRAC. One group was from the girls those were exposed to comprehensive nutrition intervention program and the other group was from those girls who are not exposed to such program. There were 75 girls in each group. The study was conducted by the Department of Health Education, National Institute of Preventive and social Medicine (NIPSOM), Dhaka in 1995. The study revealed that the 69% respondents from exposed group and 29% from non-exposed group answered correctly ( $P < 0.05$ ). The study investigated that the ability of the adolescent girls to recall specific information regarding different aspects from the exposed group 90%, 92% and

77% respondents could say the correct reason for extra food during adolescent pregnancy and lactation respectively. But only 26%, 45% and 24% from the non-exposed group could say it correctly. The study found that 97% from exposed group and 61% from non-exposed group know that colostrums were beneficial for the child. Regarding knowledge on correct time of weaning 53% and 41% from exposed and non-exposed group know it ( $P < 0.05$ ). All of the non-exposed groups correctly said that normal food should not be stopped during diarrhoea, while 67% from the non-exposed group said it should be stopped ( $p < 0.05$ ). There was significant improvement in knowledge of adolescent girls exposed to comprehensive nutrition intervention program, compared to non-exposed group.

**405. Shaheen N; Nahar S; Mohiduzzaman M; Bhuyan MAH. Assessment and effect of nutritional education on iodine nutriture status of children under five years from selected slum areas in Dhaka city. *Bangladesh Journal of Nutrition*. 2003; 16: 83-94.**

The study was conducted purposively to explore the cumulative effect of nutritional education as a supportive intervention with the USI for the improvement of IDD situation, this study was also undertaken among the literate and low socio economic population of urban slum in Dhaka city. The study included 106 slums dwelling households from Shahjahanpur and Shantibagh situated in the Dhaka city. Out of 125 children below five years, 44% of them were females and 55.2% of them were males. The study findings also showed that nearly half of the respondent mothers were housewives and 38.7% of those women were maidservants. Occupations of the respondent's husbands were rickshwpullers (21.7%), drivers (26.4%) or unemployed (25.5%). Majority of the respondents belongs to the age group of 20-29 years and about 82.1% of them were illiterate. More than fifty percent of the household income was below Tk. 4,000/- per month, whereas 57.6% of these households have five members or more in their families. In addition, seventy one percent of the subjects showed normal urinary iodine level but 29.3% had urinary iodine level below the cut-off point. Nutritional education sessions using a specific method and structured questionnaire were conducted after obtaining the base line information from the households. Which showed that the knowledge of the respondent mothers had increased by 86.8%, the use of iodized salt had increased by 10.6% and the use of plastic pots for the storing salts had increased by 13.7%. A result median urinary iodine level of exuding had increased from 247.35 pg/l to 307.75 pg/l and 229.10 pg/l to 271.10 pg/l respectively in boys and girls; and median value had increased by 60.4 pg/l and 42.0 pg/l respectively in boys and girls. Although median urinary iodine levels were in the normal range in both baseline and follow-up cases but liner trends between the baseline and the follow up urinary iodine level showed significant improvement of the situation. From these findings it can be concluded that nutritional education may be considered as a supportive intervention in addition to Universal Salt Iodization (USI) for reducing IDD among the under five children of slum areas.

**406. Sharmin FE; Alim SR; Mohiduzzaman M; Shaheen N; Banu CP; Salamatullah Q. Nutritional and socio-economic status of female garment factory workers of urban Dhaka. *Bangladesh Journal of Nutrition*. 2001; 14: 49-56.**

The study was initiated to examine the socio economic as well as nutritional status of the female garment factory workers of Dhaka city. The study was conducted among the garment factory workers of different parts of Dhaka city. The samples were selected randomly. Study population consisted of female workers aged between 14-30 years working at different factories of Dhaka city. A total of 402 female workers from 7 selected garments factories were

included in this study. Half of the respondents (56%) were adolescents. The results of the study showed that among the respondents near about 37% were found illiterate and 45% were educated up to elementary class. Though mean income was found 1150 taka per month, 43% draw less than 1000 taka. As a consequence most of the workers lived in slum. According to the body mass index 24% respondents were malnourished. In this study mean height and body weight were found a little bit higher than the previously known data. Prevalence of anaemia was also found higher among the workers. About 51% subjects had blood hemoglobin level below 12 g/dl. On the other hand highly paid group was found to have relatively better health condition and living a comfortable life. Finally it can be pointed out that the causes of malnutrition and anemia among the female garment factory workers are both due to poverty and lack of knowledge.

**407. Sultana W; Nahar L. Nutrition profile of pre-school children of Dhaka University employee. *Bangladesh Journal of Nutrition*. 2003; 16: 41- 48.**

The present study was undertaken to determine the magnitude of malnutrition with special reference of protein energy malnutrition and nutritional anemia amongst under-5 children of University employees. A cross sectional study was conducted in two areas (Shibbari and Ambagan) inhabited by the employees of Dhaka University. Nutritional status and socio economic status of the under-5 children were studied. The study was conducted during June 1994 to February 1995. Nutritional status was determined anthropometrically and biochemical (hemoglobin estimation). Anthropometric measurements were compared with that of NCHS standard. Prevalence of stunting wasting and underweight was 26.8%, 23.4% and 37.8% respectively. Taking both H/A & W/H into consideration, 55% children could be considered as normal at all. According to MUAC measurement, 22.5% children were malnourish the cut off point 13.5 cm. Prevalence of anemia was 49.34% and mean hemoglobin level was 10.91 g/dl. Prevalence of anemia was highest in the age groups of 7-11 months. Most of the employees earned Tk. 3000-4499 per month. Where as 29.2% of the employees was earned Tk. 1500-2999 per month. Rest of the employees earned Tk. 4500 and above per month. Almost equal number of employees completed primary and secondary level of education, whereas 17% of the employees were illiterate.

**408. Tasnim S; Chowdhury S; Rahman F. Nutritional status of pregnant women attending a peri-urban antenatal outpatient clinic. *Bangladesh Journal of Medical Science*. 2002; 8(1): 35-38.**

This study was done to determine the anthropometric characteristics of a group of pregnant women attending a peri-urban health clinic. A retrospective analysis was done on clinical records of women who had two or more antenatal visits at the Jalkuri branch of Institute of Child and Mother Health during January to December 1997. As such there were 246 cases among a total of 1722 pregnant population who attended for antenatal check up. This center was located in 8 k.m. area from Dhaka Metropolitan City. It was predominantly rural. Anthropometric characteristics that had been retrieved from clinical records were height, weight and mid arm circumference of the women at first visit during first trimester and weight change in subsequent visits. Characteristics of study sample (n=246) showed the mean age to be  $22.68 \pm 4.51$  years, primigravida 45.5% and mean height and weight to be  $150.36 \pm 4.6$  cm and  $45.87 \pm 7.5$  kg respectively. Mean mid arm circumference (MAC) was  $22.39 \pm 2.9$  cm. Hemoglobin was available in 1.38 cases (58.5%) and 4.3 % had Hb level  $< 7$  gm/dl. Mean Body Mass Index (BMI) was  $20.34 \pm 3.5$  and 48.4% had BMI value below 19.5. The pattern of

antenatal visits showed that among those availing antenatal care (n=1722) 84.5% had a single visit and only 6.4% had 3-4 visit. Among the study population 39.4% came within the first trimester for antenatal check up. In developing countries where data on pre-pregnancy weight was not available maternal weight during early pregnancy (12-14 weeks) can be taken as a proxy to pre-pregnancy weight. In various studies of maternal anthropometry pre-pregnancy weight has been calculated based on measurements early in pregnancy. Baseline nutritional status is important to recommend for optimal gestational weight gain. Monitoring of weight gain during pregnancy had the potential to assess the foetal growth and early detection of major complications like pre-eclampsia and intrauterine growth retardation. The compliance of antenatal care as evident by the regularity of the visits was poor even in a periurban area where the health -care facility was quite accessible. It should be necessary to find out the means that would improve the compliance of antenatal care and contribute to have a positive impact towards safe pregnancy and child birth.

**409. Tasnim S; Afroza S; Rahman F; Talukder MQK; Shahbuddin AKM. Final report on what should be the optimum duration of supplementation for infants? Dhaka: ICMH, 1999. 42pp.**

The study explored the effect of various length of supplementation on pattern of weight gain and identified optimum duration of supplementation for growth faltered infants within ongoing BINP program. The study was carried out among 510 infants aged 6-24 months in one BINP in Faridpur sadar. All the Community Nutrition Centers (CNC) were assigned randomly in three groups of A, B and C for providing supplementation of foods for 30, 60 and 90 days respectively. Children of a particular CNC was selected by existing BINP criteria for inclusion into the supplementary food program from 1<sup>st</sup> November '98 and onwards in the study till 154 children in each group were achieved. Data were collected through 3 sets of structured questionnaires to collect baseline data on socioeconomic and nutritional status, feeding practice and morbidity and record weight and height of the infant monthly till 90 days. There was no difference for selected sociodemographic factors among the study population at enrolment. The proportions of graduation were of 22.1% after 30 days, 48.4% after 60 days and 77.3% 90 days supplementation. Mean weight gain of infants after 90 days were 1.21 (.45) kg in group I (graduating at 30 days supplementation), 0.926(.41) kg in group II (and 0.820(.50) (graduating at 60 days supplementation) and .979(.08) kg in group III (graduating at 90 days supplementation) respectively. Mean weight of group I and II was significantly lower than group III at enrolment but the difference between group I and II was not statistically significant. Total weight gain was higher in group I and II than III but the difference was not significant. The proportion of graduation was 23.1% after 30 days, 50% and 77.3% after 60 and 90 days respectively. Considering cost involvement for continuing supplementation and lack of significant difference of its effectiveness it appears that 60 days supplementation was preferable to 90 days supplementation and could be considered as optimum duration in the present context.

**410. Tofail F; Kabir I; Hamadani JD; Chowdhury F; Yesmin S; Mehreen F; Huda SN. Supplementation of fish-oil and Soya-oil during pregnancy psychomotor development of infants. *J Health Popul Nutr.* 2006; 24(1): 48-56.**

The aim of this research was to assess the impact of supplementation of docosahexaenoic acid (DHA) during pregnancy on development of infants and that aimed at also improving pregnancy outcomes by supplementing women with BHA during the last trimester of their

pregnancy. In the main study, a house to house survey was conducted during January to March 2000, and 400 eligible pregnant women at 25 weeks of gestation were enrolled and randomly assigned either to the treatment or to the placebo groups after obtaining informal consent. The study results showed that there were no significant differences in the fish oil groups and soy oil groups in any of the developmental (mean  $\pm$ SD mental development in decks: 102.5 $\pm$ 8.0 vs 101.5 $\pm$ 7.8, psychomotor development index : 101.7 $\pm$ 10.0 vs 100.5 $\pm$ 10.1) or behavioral outcomes. About 28% of mothers of this population suffered from maternal under nutrition, taking pregnancy BMI out of 19.8 and were likely to have low hepatic and adipose tissue reserves. Studies in adequately nourished mothers have noted a gross fall in maternal DHA status during the last trimester of pregnancy. It may be concluded that supplementation of fish oil during the last trimester of pregnancy may not have any added benefit over supplementation of soy oil on the development or behavioral of infants in this population when assessed by the Bahley Scale of Infant Development. The study recommended to do further studies with a true placebo and if possible with more sensitive tests are recommended to ascertain the role of antenatal supplementation of fish oil on the development of children.

**411. Yasmeen F; Nahar B. Nutrient intake and food habit of a group of urban elderly people of Bangladesh. *Bangladesh Journal of Nutrition*. 2003; 16:23-32.**

A prospective study was attempted to assess the nutrient intake and food habit of a group of elderly people attending a geriatric centre in Dhaka, Bangladesh. The study information was collected during every working day except Saturday from January to August, 1999. The sample is consisted of 209 males and 206 females aged 60+ to 80 years. The dietary intake was estimated using 24 hours recall method. The habitual pattern of food in take was examined using a 7 day food frequency questionnaire. The adequacy of the different nutrient intake was determined in comparison with recommended dietary allowance. Mean intakes of energy, protein, zinc, riboflavin and vitamin A were found below RDA in both sexes. About half of the participators failed to meet 50% of RDA for zinc, riboflavin and vitamin A while the intake of fat, calcium, iron and vitamin C were above RDA. One third of the males (37%) and the females (35%) failed to meet 50% of RDA for vitamin C. A large portion of the males and females consumed pulses, green leafy vegetables regularly, but the consumption of pulses was only 25 g/d and intake of green leafy vegetables was 13g and 21g/d in males and females respectively. One third of the participants drank milk regularly. Fish was more commonly eaten than meat. This study suggested that the elderly people are at risk for poor nutrition status. A large scale national nutrition survey of the elderly is necessary.

## 2.12 HIV/AIDS

### 412. Ahmad SA; Sayeed MHS; Khan MH; Bhuiyan MSA. Religion, human behavior and AIDS. *JOPSOM*. 2002; 21(1): 99-106.

Since the detection of AIDS in 1981 among human population, its occurrence was increasing very rapidly. AIDS became the 4<sup>th</sup> leading cause of death. The story of AIDS discovery started with the identification of an unknown disease among the gay people and since then people believed that the origin of AIDS was homosexuality. More than any other disease in the world AIDS had interacted in a profound way with most of the religious doctrine and practices. The gay people believed that there was no difference between homosexuality and heterosexuality. Homosexual people are by nature sexually attracted to the same sex. But most of the religions don't permit homosexuality directly or indirectly. Religion becomes a factor, which exacerbates the pain of the AIDS particularly among the homosexuals. The gay AIDS patients wished to return to religion but are alienated by the fear of its stern dictates against homosexuality. Culturally in Bangladesh, anal sex is perceived as a highly stigmatized behavior in the public. The homosexuals are not acceptable for various socio-cultural reasons. The conservative of the society, which hates the promiscuous sex, is a significant controlling factor with regard to people's behavior towards anal sex. In Bangladesh the CSW had been evacuated from their shelter with an aim to reduce STDs and they were supposed to be rehabilitated with job in different institutions. Bangladesh is still considered as low prevalence country of AIDS, which is about less than 1%. The existing of religious faith among the people in Bangladesh as well as cultural non-acceptance were the strong factors for moral and sexual life and thereby preventing themselves from occurrence of AIDS. Religious institutes could play role to modify the negative behavior of the people not by condemnation but by an acceptable approach and mobilize support to AIDS patients. AIDS patients need social support. Almost in all religion, compassion was one of the objectives, so religion could play a leading role to show and promote compassion to the AIDS patients. Unless an inexpensive cure or treatment is available in the near future, most of AIDS patients who are breadwinners would die over the next decade and very few children would live to see their fifth birthday. The control of AIDS might be successful in the world in the future but at the cost of many human lives. This paper had focused the role of different religious activities and aspects of human behavior in the prevention and management of AIDS.

### 413. Akhter S; Parvin T; Akter SFU; Jabbar MA; Jahan Y; Fazlul A. Profile of tribal girls and their knowledge on human sexuality and sexually transmitted diseases (STDs) including AIDS. *JOPSOM*. 2003; 22(2):22-27.

Such a study was undertaken to delineate the profile of tribal girls in terms of socioeconomic characteristics and their knowledge on human sexuality and STDs including AIDS. A cross sectional descriptive study was conducted among 130 tribal adolescent girls of Rangamati district. A structured pre-tested questionnaire was used for face to face interview. The result of the study showed that the mean age of the respondents was 15.06 (SD  $\pm$  1.06) years; majority of them were Buddhists (96.2%) and most of them (91%) were unmarried. More than half of them (58%) lived in the town. Their average monthly income was Tk. 7557. Only 35.2% named for AIDS as a sexually transmitted disease. Although 32.3% of the respondents opined that unprotected sex was the mode of STDs transmission 46% mentioned that 'avoiding unprotected sex' could its spread. About 60% respondents said that they heard about STDs, while 40% said negatively. But vast majority (54%) did not know the name of any STDs. The



findings of the study also have public health implications towards the control of STDs/AIDS. It is imperative to educate the students on proper sexual behavior and its practices particularly when they reach sexual maturity. Majority of the respondents identified unprotected sex/multiple sex partners as the spreading factors of STDs/AIDS and they also knew the role of condom in preventing them. Although it has certain limitations, the study found out some data which have important socio-cultural and public health implications.

**414. Anonymous. A report on dialogue on HIV/AIDS: a case of low prevalence and high risk in Bangladesh. Dhaka: South-South Centre Bangladesh, 2000.**

The objective of the dialogue was to reach a consensus on the gravity of HIV/AIDS problem and some of the related crucial issues. It also intended to develop a mechanism to address these and to identify good practices available in and outside Bangladesh, if any for dissemination. The dialogue was divided into three sessions, inaugural, business and concluding session. From the inaugural session it was revealed that all are extremely concerned about the HIV/AIDS epidemic. But Bangladesh was a low prevalence country. It was a high-risk country as well because of high incidence of HIV/AIDS. In the business session keynotes were presented. The business session ended in identifying valuable issues for group-discussion. Participants of the dialogue were divided into two groups to discuss two important issues. Chief Guest of the session mentioned that there was little knowledge about HIV/AIDS in Bangladesh. According to studies and WHO sources, as many as 20,000 individuals were infected with HIV in Bangladesh in 1993 and it was predicted that by 1997, over 100,000 people could be infected. However, no sentinel surveillance system has been established to prove or disprove this WHO estimates. The exact number of people currently living with HIV/AIDS in Bangladesh was not known but is currently estimated to be approximately 30,000. Since it is difficult and expensive to get an HIV test in Bangladesh, it is believed that number is under-reported. It was suspected that there are many more cases misreported or had not been reported in consideration of patient's privacy. Because of small sample size tested for the virus, Bangladesh had not yet been able to get a clear picture of the epidemic. According to recent studies, it was believed that the prevalence of HIV/AIDS among people is quite low. Following recommendations were made for successfully combating HIV/AIDS: (i) full commitment of the Government; (ii) involvement of civil society and NGOs in the process; (iii) implementation of awareness program to make people aware of the mode of transmission of the disease; (iv) initiation of formative research to know prevalence and other related issues; (v) ensure STI/RTI curative services; (vi) develop adolescent friendly service facility; (vii) develop BCC materials; (viii) ensure universal treatment of partners of STI cases; (ix) initiate projects to empower women; (x) accessible and easily available HIV testing facility; (xi) introduction of sex education in the Secondary School Curriculum; (xii) extensive use of media both print and electronics to educate people about the disease and Equitable allocation of resources.

**415. Anonymous. SMC's disease prevention marketing campaign: report of a qualitative study. Dhaka: SMC, 2002.**

The objective of this study was to understand who current users are what brands they use, their knowledge, attitude and perception on condoms, STD, HIV/AIDS and finally, to evaluate the concepts developed to test whether or not the existing positioning strategies are effective. The study was a random survey among target group via one interview using a mostly structured questionnaire. Finally the concepts had been evaluated using the standard concept evaluation

format, and the six concepts were rotated during exposure in order to eliminate order bias. The results of this study showed that the high-risk group belongs to the age group of around 27 years, mostly illiterate and with an average monthly income of around TK. 5000. Majority of them were smokers and consume alcoholic drinks. Viewing blue films was also a prevalent practice and they are mostly viewed in the company of their male friends. The respondents were queried on the knowledge and perception of STDs. There was very high awareness of STDs and the most commonly mentioned disease was Syphilis followed by Gonorrhoea. Awareness of the symptom 'Puss in the penis' for Syphilis and Gonorrhoea was high. However, the awareness about the symptoms of Herpes and Chlamydia was very low. The respondents were aware that STS could be passed on to their wives by having unprotected sex. However, there were several wrong perceptions also prevalent one of which being that they believed that these infections would go away by washing the penis with petrol/savlon/own urine. More than two-thirds of the respondents said that they know that they were at risk of contracting STDs if they have unprotected sex with CSWs or other women other than their regular partners like wives. This knowledge was highly prevalent in the 'Never User' group as well. It was interesting to notice, that though the knowledge about the ways of contracting STDs, they didn't use condoms then to prevent such occurrence. The study also found that high-risk behaviour was negatively linked with the use of condoms while having sex with CSW. The 'Never Users' realized that they might infect their wives with STDs, if they indulged in unprotected sex with CSWs. Yet, they did not use condoms because they perceived that it would reduce their sexual pleasure and their regular partners (wives) would suspect them of indulging in sex outside the marriage. So, the strategy should focus on removing the obvious dichotomies that exist in the psyche of the high-risk group and it should be exploited in communication and promoting condom use, first with never users and then with other users.

**416. Anonymous. Report on knowledge, attitude and practice-study among retailers, in the designated HIV/AIDS high-risk areas in Bangladesh. Dhaka: SMC, 2002.**

This survey was conducted to assess the knowledge, attitude, behaviors and practices of the primary target group related to condom use for the protection from STIs including HIV/AIDS and to determine the knowledge of sexually transmitted infections, risk practices, and prevention and treatment. Both quantitative and qualitative method, were employed for data collection. Relevant information was collected using three techniques, namely in-depth interview of retailers, mystery shopping by adolescent and FGD of leaders of different transport association as well as factory managers. The study findings revealed that market share of SMC condom brands Panther topped the sales of pharmacy carriers while Raja topped the sales of non-pharmacy carriers. Only 7% of pharmacy and 18% of non-pharmacy were out of stock of condom at the time of interview. It was also found that 75% of pharmacies and 65% of non-pharmacies were out of stock only once in the last 3 months. Among the condom buyers buying from pharmacies, 73% buy for family planning and 27% for prevention of STD. This figure was different in the case of non-pharmacies. Eighty-eight percent of pharmacies and 65% of non-pharmacies told that most of the buyers were from service holders. Thirty-five percent of total sample told that non using condom was the major reason for spreading of STD. Replying to question, 99% of total sample affirmed that STDs could be transmitted in mating with infected ones without condom even only for one time. Replying to regarding belief in the idea that STD could be washed away with water, savlon, urine, etc., 77% of total sample that they did not believe in such idea. Sixty-eight percent told that major economic problem caused by STDs' increasing of expenditure due to treatment cost and 13%

told that income decreases also due to STD. Ninety-nine percent of total sample told that they were aware of AIDS. Only 40% of those who are aware of AIDS were aware of HIV. Relationship between HIV and AIDS as reported include 'HIV was a virus and AIDS a disease 937%), and 'carrying HIV lead to AIDS (31%). Suggesting for prevention of AIDS included not mating with infected ones (65%), not mating with CSW (36%), using condom while having intercourse with infected ones ((46%), not using infected syringe/needles (49%), not taking infected blood (36%), etc. Almost all (99.6%) told that one could get AIDS if he/she mates with infected one without condom even only for once.

**417. Anonymous. Report on knowledge on AIDS transmission and prevention among the adolescents and youths. Dhaka: SMC, 2002.**

The main objective of the survey was to gather data for providing a benchmark on specific key indicators to measure the BCC intervention on the defined target group. The study had been designed to have conformity with the earlier KP surveys on STD/AIDS for SMC. Both quantitative and qualitative techniques, interview using structured questionnaire and focus group discussions were used for gathering information. Findings of the result showed that among the respondents who had either no schooling or last highest schooling level was below Class V, 33.6% could read and write, 19.8% could not read and write and 46.7% could sign only. Only 2.7% of overall audience reported that they had discussed reproductive issues with their father while 19.6% reported discussed with their mother. Sixty-three (63.4%) of the married respondents did not practice any FP method while 6.3% and 26.8% use condom and pill respectively. About 25.5% from the boy respondents told that boys recognize their puberty at the age of 14-15 years while Twenty-five percent of the girl respondents termed 12-13 years as the age of reaching puberty. Fifty percent of the boys told that they became aware of their puberty when they started feeling attracted toward girls and had experienced nocturnal pollution. Ninety-three of the girls observed menstruation as the major indicator of puberty while 49.1% refer to growth of breast. Forty-three (42.8%) of the boys could not tell the age at which a girl becomes capable to become pregnant. Thirteen percent (13.2%) of the boys termed 18 years of age as the beginning age of pregnancy while 9.7% termed 14 years as the beginning of age. Fifty-seven percent (57%) of the boys told that condom should be used during intercourse as safety measure. Forty-seven percent (47.2%) of the girls did not know what should be known safe intercourse. Seventy-four percent of the girls also thought that adolescents were sexually harassed by mastans. Eighty-three percent of the boys were aware of at least one STD while 86% of the girls was aware of at least one STD. Ninety-five percent of the boys were aware of AIDS while 97.4% of the girls were aware. Eighty-nine percent of the boys had seen condom while 44.5% of the girls had seen it. Thirty-two percent (32.2%) of the boys and 32.5% of the girls could not tell what surockkha did. The study recommended that there is a need for research on adolescent and youth emerged as well as STD/AIDS prevention program should be enlarged to all over the country.

**418. Anonymous. HIV/AIDS and condom use knowledge, attitude and practice survey/conducted by ORG-MARG Quest Ltd. Dhaka: SMC, 2000.**

This survey was undertaken by SMC to carry out a KAP survey among the target population in the program areas to gather data in order to measure the impact of the program till to date. It was carried out among 940 CSWs and their clients (target populations) in the program areas of SMC (Experimental area) and non-program areas (control area). The survey was quantitative in nature. The results of the survey revealed that in the 1<sup>st</sup> follow-up survey, as stated by the

CSWs, 98% clients of Mymensingh and Jamapur ever used condoms during sex. Now it has increased to 100%. It was observed that a good number of clients usually prefer to have sex without condoms. The obvious reasons are "satisfaction" and "lack of knowledge on STD/AIDS". The comparative findings indicated that the CSWs were more motivated and empowered towards using condoms and thereby adopting "safer sex". In this study about 78% of the CSWs mentioned that they keep condoms in their room to meet up their day to day need which was 76% in the earliest study. The level of awareness about STDs had increased in a considerable extent (97% to 100%). Moreover, in the current survey, 100% (as compared to 94% in the earlier survey) of the CSWs felt that sexual diseases should be treated. The findings showed that the awareness on AIDS had increased by 5% among the CSWs. About 95% CSWs stated "AIDS is not curable" compared to 94% in the earlier study. The awareness on AIDS had increased by 5% among the CSWs. More than 98% CSWs admitted that clients occasionally use condom during sex with them. In the experimental areas, 72% CSWs almost 'always' use condoms. On the contrary, 10% of the CSWs on the control areas about clients performing sex without condoms. It was interestingly observed that maximum clients preferred to have sex "with condoms". Only about 24% in experimental area and 46% in control area preferred sex "without condoms". In response to this question, only 37% in the experimental areas and 28% in the control areas mentioned that they were aware of some organizations working on AIDS. Commonly quoted names are BRAC, SMC/Surakhkha, CARE/Shakti, KKS, etc. in the control areas. According to findings of the study, the only way to combat this pandemic is to change the sexual behavior through continuous IEC activities among the high-risk groups. The "peer education" program conducted by SMC is an excellent and challenging effort in this regard. This program should continue to empower both CSWs and their clients toward "safer sex" and thereby preventing AIDS.

**419. Anonymous. Bangladesh HIV/AIDS prevention project- baseline survey 2004. Dhaka: Mitra and Associates, BCCP & UNICEF, 2005.**

The survey was conducted with the objectives to assess knowledge, attitudes and practices related to HIV/AIDS and other STIs among the adult population in Bangladesh and provide baseline measures for evaluating the HAPP program activities among the general population. The survey was implemented by collecting data from a nationally representative sample of 3942 respondents chosen from among women age 15-49 and men age 15-59. The sample was drawn in terms of households by using a multistage sampling design. The questionnaires were used in the survey to collect the data: a household questionnaire and an individual questionnaire. The fieldwork for data collection started on 22 December 2004 and was completed by 18 January 2005. As observed in the survey, a majority of respondents had heard the term AIDS. The term HIVC was less familiar. In general, awareness about HIV/AIDS was less common among rural than urban people and less common among women than men. Knowledge that using a condom every time during sexual intercourse reduces the risk of HIV transmission was also wide spread. However, knowledge of all the correct ways to avoid HIV/AIDS was still fairly low. Only few respondents believed that they are at risk of getting HIV/AIDS. Low risk perceptions are a potential barrier to the practice of protective behaviors. Awareness of STIs was found to be extremely low among respondents. Most respondents had no knowledge of the signs/symptoms of STIs. Incidence of premarital sex was almost absent among ever married women in the survey. Among ever-married men who had sex before marriage, only 12% of those in rural areas and 24% in urban areas reported having used a condom during their first premarital sexual act. Any reported use of drugs was

extremely low among respondents in general and virtually absent among women. Television, Radio and Newspapers were the widely used mass media among the intended indices, with television standing out as by far the largest. More vigorous efforts need to be taken to spread awareness about STIs. More educational efforts would be needed to promote the use of condoms during premarital/extra marital sexual activity.

**420. Anonymous. Baseline survey of JTF funded project on prevention of HIV/AIDS and control of intravenous drug use among adolescents and youth. Dhaka: FPAB, 2004.**

The main objective of this survey was to portrait the baseline status of knowledge-attitude-practice situation of the adolescents and youth, intravenous drug users and community and HIV/AIDS in the project areas. In congruence with the objectives of the project, four groups of variables namely general information, reproductive health, HIV/AIDS and community involvement were investigated in the survey. A convenient sample, appropriate according time and resources, of 200 adolescents and youth, of which 50% were males and 50% were females, were interviewed under random sampling method. In addition to this, FGDs were conducted to get necessary information from intravenous drug users and community people. The composition of the community people for FGDs was elected UP members/chairman, teachers, parents and religious leaders. Data were generated by interviewing following one set of interview schedule for adolescents and youth and two checklists to conduct FGDs with the intravenous drug users and the community people. Both quantitative and qualitative approaches were adopted to collect relevant information. The findings of the survey show that 36% of the respondents had knowledge about STIs except HIV/AIDS. Females were more knowledgeable than male, 69.5% knew HIV/AIDS but having limited knowledge and 30.5% did not have any idea about this. The mode of transmission of HIV/AIDS mentioned by the respondents was: transfusion of blood (54.5%), through infected needle (33.5%), from infected mother to baby (29%) and sex with sex workers (34.5%). Only 10.5% respondents knew about the place/institution for identification and treatment, 4% could mention about the possible victims of HIV carrier in the country while only 2% had knowledge about death of persons infected with AIDS. Among intravenous drug user the knowledge about prevention of HIV/AIDS by not sharing needles and syringe with others was 20%; about using tested blood only for transfusion was 27%. Based on the key findings of the survey, a number of recommendations were made. Of them, making the community and religion leaders aware, special information and training on STIs/HIV/AIDS, campaign on prevention of HIV/AIDS and participatory action research methodologies to be evolved, experimented and strengthened. As a sensitive program in the community, more human resource support from the FPAB district level office continuation of the project for couple of years were recommended.

**421. Anonymous. KABP baseline survey on SRHR and HIV/AIDS among Madrasah adolescent students and Madrasah Teachers in selected areas of Bangladesh (final draft). Dhaka: FPAB, 2006.**

The study was designed to explore existing knowledge, attitudes, behavior and practices (KABP) of the madrasa students of adolescent age (10-19 years) and the madrasa teachers about sexual and reproductive health issues. The study covered 25 madrasas about half of which were Qauimi madrasa. 360 male and 306 female and 226 teachers were interviewed using two separate structured questionnaires for male and female and a semi structured questionnaire for the teachers who were reluctant to express their private views in a face to

face interview. The survey found that most of the adolescent students of madrasa were less informed about sexual and reproductive health illness and had little opportunity to talk to outside their peer group about their feelings, queries and anxieties relating to their sexuality and sexual health. The majority of madrasa students especially from Quami madrasa perceived SHR issues from religious perspective. Their teachers also had similar perception. Thus many male students had expressed misconception fear and guilty about nocturnal emissions and masturbation. The female students also expressed misconception about menstrual period. All students and teachers had heard about HIV/AIDS mainly from bloods, newspaper, television and radio but a few from NGO/health workers. Promotion of condom among adolescents irrespective of marital status for HIV infection was viewed in promoting of promiscuous behavior leading moral degradation gender violence and discrimination emerged as an important reproductive health issue. Very few people decide rationally in areas sexual and reproductive health. Religion plays an important role in shaping sexual norms and practices in Bangladesh. Many issues related to SRH are decided by family rather than by an individual. The study suggests that both the students and the teachers need access to information, advice and counseling from credible sources. It is necessary to identify barriers to improve access to information services and motivate the stakeholders to be aware of the unmet needs of the adolescents about SHR issues. Freedom of the practices of individualism is highly recommended.

**422. Ara S; Karim F. AIDS awareness development through education: evaluation of a pilot project in a rural Thana. Dhaka: BRAC, RED, 1999.**

The major objectives of the study were: i) to assess the status of HIV/AIDS awareness among married couples, adolescent boys and girls and village leaders in the village; ii) to assess the level of awareness of the study population about the remission and prevention of HIV/AIDS; and iii) to assess the status of condom promotion for prevention of STD/HIV/AIDS through the campaign. This study was conducted in 3 years workshop, and Mirzapur of BRAC's Rural Development Programme. Data were collected during June 23<sup>rd</sup> to July 15<sup>th</sup> of 1999. Both qualitative and quantitative methods (survey and focus group discussion) were assessed for data collection. For qualitative survey, 30 villages were randomly selected from these 3 areas. They included 30 kishore (adolescent male) clubs and 30 kishori (adolescent female) clubs. The study found that level of knowledge on HIV/AIDS increased significantly in the project area. Trained and non-trained adolescents gained higher knowledge than the couple members. The participant adolescents discussed their learning with their peer circle BRAC eligible couples were less aware of AIDS/HIV than non-eligible couples. High levels of illiteracy among the target population resulted in the inability to read leaflets and also a lack of interest in written leaflet. BRAC members had higher knowledge than non-BRAC members about HIV/AIDS. Female BRAC members were more aware than the male. Forty percent of total respondents mentioned that if any one is infected with AIDS/HIV, he/she would die. Sixty-eight percent trained male adolescents mentioned that HIV/AIDS transmitted through sexual intercourse with AIDS patients. Mostly adolescents are involved in high-risk sexual behavior. Only forty percent of respondents told that the use of condoms for prevention of AIDS. Knowledge about high risk sexual behavior is essential for prevention of HIV/AIDS. A long-term campaign will be more imperative to improve effective knowledge on HIV/AIDS in rural Bangladesh.

**423. Ashrafun L. Effect of educational intervention on some selected aspects of HIV/AIDS in two selected department of Dhaka University. Dhaka: NIPSOM, 1999.**

The study was conducted to design and evaluate an intervention programme on HIV/AIDS among the selected groups of University Students. The study has been conducted for the period from 15<sup>th</sup> March, 1999 to 15<sup>th</sup> June 1999. A self administrated questionnaire having both open and close ended type of 37 questions has been used for the baseline survey. It is observed from the study that before intervention the students of two departments have inadequate knowledge on some selected aspects of HIV/AIDS. But after intervention maximum students have adequate knowledge. So it is focused from the study that there is an effect of education intervention and intervention can improve and disseminate knowledge to the students. In the light of the study findings the following recommendations can be suggested: (i) as young people are the vulnerable group for HIV/AIDS so they must be protected from this deadly disease. They must know about the disease, its symptoms, mode of transmission and ways of prevention etc. For this education intervention can play a vital role. To create awareness and knowledge education intervention is a good measure. (2) Health education regarding HIV/AIDS should be included in academic curriculum from school to higher studies. (3) The mass media newspapers, radio, television etc. can play an important role on the dissemination of knowledge and creating awareness.

**424. Azim T; Bogaerts J; Yirrell DL; Banerjea AC; Sarker MS; Ahmed G; Rahman MMM; Rahman ASMM; Hussain AMZ. Injecting drug users in Bangladesh: prevalence of syphilis, hepatitis, HIV and HIV subtypes. AIDS. 2002; 16: 121-125.**

The present study attempted to identify the prevalence of syphilis, hepatitis, HIV and HIV subtypes among injecting drug users in Bangladesh. The sample size was calculated as 380 with an estimation of the HIV prevalence rate 1%, with 1% precision and 95% confidence level. Information regarding the surveillance was provided through group workshops to all injecting drug usage in the needle/syringe exchange programme. Informed consent was obtained before sampling. Serum was separated from blood collected by venepuncture into sterile, plain vacuainers. The chi-square statistic test or fisher's exact test was used for comparing proportions. The findings showed that the prevalence of syphilis, hepatitis and HIV in IDU was one of the 607 IDU who tested positive in the first ELISA. Five hundred ninety-six were positive by at least two tests. More syphilis and HCV-positive IDU were found in the NEP of central Bangladesh than in that of northwest Bangladesh ( $p < 0.001$  and  $0.044$ , respectively) and the detoxification clinics ( $p, 0.001$  for both). Acute HBV infection rates were higher in IDU from the NEP of northwest Bangladesh than from that of central Bangladesh ( $p < 0.037$ ) or the detoxification clinics ( $p \leq 0.001$ ) For HIV, 12 IDU were positive by the first test, of whom 7 were confirmed positive. Six were from the NEP of central Bangladesh and one was from the detoxification clinic. Therefore, despite the present low HIV prevalence in IDU in Bangladesh, high syphilis and HCV rates, risky behavior, transmission from neighboring countries and a lack of genetic protection against HIV infection suggested that IDU was at risk of an HIV epidemic.

**425. Bari MA; Khan AW; Sen SK; Chowdhury SA; Chowdhury MRI. Knowledge of selected secondary school children on HIV/AIDS. JOPSOM. 2002; 21(1): 50-54.**

The study was undertaken to assess knowledge of secondary level students about HIV/AIDS and to know the sources of information. The study was conducted by the Department of

Community Medicine of ZH Sikder Women's Medical College during February 2002. The study was conducted among 164 purposively selected males and females students of class IX and X of two private High Schools situated at Rayer Bazar area under Dhanmondi Thana, Dhaka. Data were collected by face to face interview using a semi-structured questionnaire. Majority of respondents (67.68%) had knowledge of population group contracting HIV. Of them 23.18% said prostitutes, 19.51% said bus/truck drivers, 12.80% said laborers, 10.37% said intravenous drug users and only 1.22% said sailors mostly contract HIV as their first choice. About one third (32.32%) were not aware about the high-risk people. Male students (54.05%) had better knowledge than that of the female students (45.95%). Most of them (88.42%) knew the common modes of transmission of HIV, which included unsterilized syringe, contaminated blood transfusion, unprotected sex and breast-feeding. About two thirds of the students (73.17%) said that HIV might be transmitted from mother to child. Most of the respondents (83.54%) said that AIDS could be prevented. About 72% said that transmission of HIV could be prevented by using disposable syringe, condom and by screening blood transfusion. More than two-thirds students of class X (84.82%) and class IX told that the virus transmission could be prevented. The respondents who had knowledge about prevention said that transmission of virus could be prevented by using disposable syringe (37.96%) through screening of blood for HIV before transfusion (21.90%) by avoiding unprotected sexual behavior (16.06%), using condom (12.40%) and following religious norms (11.68%). They also mentioned that they learned about HIV/AIDS mostly by viewing television. Majority of the students knew about HIV and AIDS. The role of TV as a medium of imparting health knowledge might be highly effective in our country.

**426. Bhuiyan I; Rob U; Yusuf N; Chowdhury AH. South Asian political advocacy project: Bangladesh database on HIV/AIDs. Dhaka: UN Aids, 2004.**

The study is an attempt to draw inferences on the status of the epidemic from the information recorded in the database structure so far provide thematic analysis of all available data on study subjects including high risk groups and identifies critical gaps. The current structure of database is designed to include quantitative data only. The database incorporates evidence from different bio-medical and social science disciplines. The study recognized that the database can provide an enormous amount of information through secondary data, and is an important source of information epidemic analysis for providing required data in programme monitoring and evaluation, validation of assumptions and will complement primary data. It is an important tool that brings together both epidemiological and behavioural data which can segue to draw out a composite picture along with the national programme data. The database activity demonstrated that it could be an important adjunct to the other data collection activities in the country. While it is expected to provide a base for advocacy action, it is hoped the data base will encourage policy planners, program managers and researchers to address the gaps as well as explore areas and issues related to the field of HIV/AIDs and RTI/STI research and publish and release the information currently unavailable in the country. The experts of database recommended that structure needs to be simplified and included or modify some of the fields/indicators in order to enhance its utility to the policy planners, programme managers and researchers.



**427. Biswas SN; Nahar A; Begum RA; Shahidullah M; Rahman MM; Shaheen R. Assessment of clinical management of tetanus patients in infectious diseases hospital (IDH), Mohakhali, Dhaka. *JOPSOM*. 2001; 20(1):80-87.**

The study aim was to assess the pattern of clinical management and treatment provided to the tetanus patients and also to follow-up for clinical outcome of the patients. A total of 76 diagnosed admitted tetanus patients were studied. A pre-designed structured interview schedule was used for collecting the information from the patients or his/her attendants. The median age of the patients was 16.5 years. Among the patients, 73.7% were male and 26.3% female. The mean duration of incubation period (i.e. from the day of exposure to precipitating factor to onset of clinical manifestations of tetanus) was  $6.8 \pm 3.4$  days. Most patients had (92.1%) complaints of lockjaw followed by convulsion, neck rigidity, and backache, inability to open mouth, fever, tense abdomen and inability to swallow. Proper darkness, control of sound and visitors and cleanliness of the patients were maintained for cent percent of the patients. Almost all (97.4%) required role's tube feeding, 89.5% dressing, 82.9% or pharyngeal suction and intravenous fluid respectively, 75.0% required railed cot and 64.5% continuous catheterization. About 92.0% of the patients had been given injection ATS at the dose of 10,000 IU. All patients were given injection penicillin in different doses all received injection diazepam at the initial stage of treatment. About 15.0% of the patients required cocktail doses of medication consisting of largactile, phenergan and diazepam in injectable form. Out of 76 patients, 28.9% died in the hospital and 71.1% were completely cured from tetanus. In bi-variate analysis, no statistically significant difference was found with age, sex, occupation, education, marital status, residence, immunization status and outcome of treatment ( $p > 0.05$ ). But a significant difference was observed with duration of hospital stay and incubation period with outcome of treatment ( $p < 0.001$ ) indicating shorter the incubation period and hospital stay, increased the rate of mortality. The findings of the study advocate for proper treatment, follow-up and counseling of the patients.

**428. Caldwell B; Pieris I; Barkat-e-Khuda; Caldwell J; Caldwell P. Sexual regimes and sexual networking: the risk of an HIV/AIDS epidemic in Bangladesh. *Social Science & Medicine*. 1999; 48: 1103-1116.**

The objective of this study was to investigate the situation of AIDS epidemic in Bangladesh. It was joint program of the MCH-FP Extension Project of the ICDDR,B and the Health Transition Centre, Australian National University. The program conducted on the population outside Dhaka, partly because this was the mandate of the MCH-FP Extension Project and partly because 93% of the country's population lives outside Dhaka. Bangladesh adjacent the Asian region with the severest AIDS epidemic and has common borders with two of the most affected areas, the Indian Hill States and northern Burma. There had been disagreement about the danger to Bangladesh, one view citing the likelihood of transmission from neighboring infected populations and the other claiming that the country's predominantly Muslim culture protects it. The paper reported for the years from 1995-1997 research projects. Preliminary research was carried out in Dhaka in 1995-1996 and which suggested that the poor squatter areas might well sustain an epidemic. The experience also showed that more accurate measures of sexual networking could be obtained from males than females. The 1997 field research reported here investigated 983 males, 52% single and 48% married in Chittagong City and two more rural areas of Chittagong Division in southeast Bangladesh. It was found that around half of all males and probably a somewhat lower proportion of females, experience premarital sexual relations, with males having a lower level of extramarital than

premarital relations. The factor heightening Bangladesh's risk of an epidemic is that one-quarter of single males and a significant but lower level of married male have had relations with prostitutes. This was one explanation for quite high levels of STDs in Bangladesh. The level of HIV/AIDS was very low in Bangladesh and it was far from epidemic level. Yet the situation is more complex than this because there is a surprisingly high level of commercial sex and insignificant level of sexually transmitted disease within the country. High levels of HIV/AIDS were to be confined to the commercial sex and metropolitan slum sectors of the population, it would make it easier to restrict any outbreak even if a self-sustaining epidemic were confined to these high risk groups, there would still be a low level of AIDS throughout the whole country because some of the rural population who have commercial sex while in the towns would become infected and a fraction of these persons would subsequently infect other partners in the rural population.

**429. Chowdhury AM; Akhter HH; Ahmed BN. Quality of services regarding RTI/STDs case management by syndromic approach in selected clinics (UFHPS) in Dhaka city. *JOPSOM*. 2001; 20 Suppl.; 28-32.**

The objective of this study was to examine the quality of care of RTI/STD case management reduced by the trained service providers utilizing syndromic approach guidelines in selected urban clinics. This cross sectional study was carried out in 4 static NGO clinics of Dhaka city on purposively selected 13 providers and 102 female clients. Data were collected by the researcher through observation and face to face interview using observation checklist questionnaire. The study was conducted from April to June 2000. The study results indicated that overall case management by the trained providers was appreciable with few lacking. The mean age of the female respondents was 26.3 years. More than half of the respondents (51%) opined that the attitude of the providers was fair. STD has the highest prevalence in the most active reproductive age group. The mean age of this study (26.3) agrees with that of Tafiqunnessa. Majority of the clients (55%) expressed full satisfaction, while the rest expressed partial satisfaction regarding behavior, attitude and clinic facility. Regarding time given for consultation, 77.5% of the respondents stated that it was sufficient. In 39% of cases, history for high risk assessment was not taken and 17% patients experienced excess pain during physical examination. The study results revealed that overall management of the clinics under study was found average with some inadequacy. If some measures may be undertaken, might bring about improvement in the quality of services.

**430. Dey KC; Khan MJ; Ann RT; Akhter T. Evaluation of the project on reduction of STIs and prevention on HIV/AIDs in Bangladesh. Dhaka: FPAB, 2002.**

The goal of this study was to evaluate the project for reduction of STIs and prevention of HIV/AIDs among the factory workers in and around Dhaka City by increasing awareness and develop capacity of garment factories to implement HIV/AIDs prevention program. The study was conducted to collect data on the knowledge, attitude and practice related to STDs/HIV/AIDs of garment workers and staff in selected 15 factories during November-December, 2002. Data were collected from 150 trained and another 300 general garments workers. In addition several FGD was arranged with managerial personnel. The major findings showed that 66% of peer educators and 56.4% of general workers were practicing FP methods that might greatly reduced the risks of acquiring AIDS and other STDs. Oral pill was the most preferred methods, 46.4% among peer educators and 41.5% among general workers. There was a significant difference between the groups to identify the diseases as STDs. All they

treated syphilis, gonorrhoea, Hepatitis, HIV/AIDS and STIs. When asking about AIDs, all peer educators were found to be knowledgeable about AIDS while 65.3% of the general workers had knowledge about it. Both the group was treated AIDS as a deadly disease, and death was the ultimate fate for it, it was a SWTI etc. The peer educators stated that AIDS is transmitted by the use of infected needle (92.0%), transfusion of blood (86.7%), sexual intercourse with an HIV/AIDS patient (90.0%), sex with workers (82.3%), illicit sex (56.7%) and from HIV infected mother and baby (76.7%). The study thus confirmed that in reduction of STIs and preventing AIDS "Behavior Change Communication (BCC) and training has most vital role. The impact of training program was very good but more training materials are needed to use in the future for better orientation/training. So, the study recommended that AIDS related materials (both printed and audio-visual) should be supplied in more quantity, workshop and seminar on AIDS should be organized regularly, initiate awareness and prevention program, BJMEA and FPAB should take joint action with government. Finally for preventing the HIV, in future more vigorous efforts should be given to increase the use of condoms.

**431. Dey KC; Khan MJ; Begum N; Khan T; Islam MS; Khan MN. Evaluation of SRH in commercial sex centre. Dhaka: FPAB, 2002.**

The major objectives of the study were to assess the level of awareness and knowledge regarding mode of transmission and prevention of STDs/RTIs/HIV/AIDS of CSWS. A total of 300 CSWs were selected randomly from 2 project sites namely commercial sex center at Daulatdia and at C & B Ghat in Faridpur. Data were collected by interview using a structured questionnaire. FGDs for service providers and beneficiaries, reviewing all relevant documents including fund utilization and observation had used. Results showed that the sexual workers were relatively young and poorly educated. The mean age of CSWs was found near to be 22.9 years. Regarding the marital status, 5.7% were to be found married, 43.7% were unmarried, 21.0% were divorced and 29.6% were separated. Among CSWs 8.7% were engaged in this profession below one year, 28.7% between 1-3 years, 26.3% between 4-6 years, 17.3% between 7-9 years and the rest 19.0% engaged more than 10 years. It was observed that poverty, willingness, trafficking, family dispute, deceived by lover, daughter of CSWs, after abuse by police, lost in early childhood were the major reasons for entering into this profession. The finding of the study reflected that 93.0% of sex workers were found to have minimum knowledge about various STDs. Of them 85% could mention syphilis and 83.3% could mention gonorrhoea. The major sources of knowledge about STDs/AIDS were conceived from group meeting conducted by FPAB (84.7%), TV (34%), informal discussions with other sex workers and clients (17.0%), cinema (25.0%), and street drama (6.7%) their explanations of causation of these diseases included washing with dirty water (87.7%), uncleanness(84.3%), having vaginal-penile sex with an infected person (82.7). Kissing an infected person (45%) , airborne transmissions (5.6%) and anal sex (5.0%). Use of condoms (82%), cleanliness (9.3%), blood test (19%), uses of new syringe (2.0%), etc was the major ways to escape and keep prevent from STDs/AIDS. One interesting findings that majority of CSWs (58.3%) reported that clients (customers) were not happy with condom, and 32.3% opined that customers were in hesitation to use condoms and only 9.3% reported satisfaction with condoms. It was observed that in many cases, virtually the CSWs had little or no power to motivate their clients and such they had to go with their clients without condoms. Client's dissatisfaction (74.3%), want baby (14.8%) and infertility were the burning reasons for not practicing condoms. However, FPAB was making liaison with other NGOs to strengthened activities the project. The findings of the evaluation study would help the policymakers and

program managers to get feedback about the strength and effectiveness of the program and to make necessary modification in future program planning.

**432. Gazi R; Chowdhury AMR. Perceptions of rural Bangladeshi women on sexually transmitted infections. Dhaka: BRAC, 2003.**

The study was conducted to explore the perception of rural women on risk factors, causes, transmission, prevention and treatment seeking pattern of sexually transmitted infections. This study was conducted among rural women in four areas of Mymensingh district of Bangladesh during March 1998. Data were collected through participatory rapid appraisal (PRA) methods, which included focus group discussions (FGDs), body mapping, ranking and listing. Perceived causes of STIs are personal hygiene, hygiene after sex, sex with bad women, pollution Gender contact and supernatural causes. Individual behavior pattern includes social status, Gender, Illegal relation, Dhari potti (brothels), Notlibeti (Sex workers), Occupation, Education and age. Gupta Roy identified locally are turned variably gormi, pipir/piprce, sibyl's, dhatu, arson, pochajiao etc. Treatments take place usually in the forms of self and family level care, treatments by kabiraj/TBA and treatments by qualified doctors. In Bangladesh community based studies on RTI/STIs are very rare, particularly on people's risk perceptions on such diseases. Discussion with the participants revealed that sex related diseases are not unknown or uncommon problems to them and they have identified these as serious problems. The younger women did not give much emphasis on pollution and supernatural factors as causes of sex related discussions. As preventive measures the younger mothers mentioned the use of condoms. But the older mothers were not sure of its uses. Because as condoms were less familiar to them. The participants gave great emphasis for male awareness since they believed that males bring the disease from outside. The women believed that male and female both are sufferers of such illnesses. The study findings ultimately suggest that the entire community should be made more aware about the risk behaviors and route of transmission of STIs.. Relevant and appropriate education materials should be developed and mass media campaign is needed.

**433. Hasan K. Knowledge, attitudes and opinions among key influential in Bangladesh to guide HIV/AIDS advocacy strategy: final report. Dhaka: SMC, 2002.**

The study was carried out to understand the subsequent attitudes and views of the various opinion leaders regarding HIV/AIDS and determine the knowledge level of this group. Another objective was to facilitate a mass media campaign directed at the clients of sex workers in support to the PR and advocacy campaign on social marketing activities in relation to condom use. It was a qualitative study. Data was collected through using qualitative techniques, such as in-depth interviews and focus group discussions. Almost all the respondents were aware of the prevalence of sexually transmitted infections in the country. Although the majority of them have heard about deadly infections, i.e. AIDS, most of them did not have a clear-cut perception about it. The respondents as a whole stated that the reasons behind the occurrence of STI, especially AIDS, were because of different illegal sexual affiliations, i.e. premarital or extramarital sex among people. Especially the Govt. Official thought that AIDS is caused due to on 'illegal' sex. All types of respondents mentioned that rich or poor brothel goers as well as the illiterate and ignorant people who are not health conscious are contracting AIDS more than others. Majority of them told that treatment is available for sexually transmitted infections such as syphilis and gonorrhoea but not AIDS. Regarding the prevention of AIDS/STI, the respondents said that only the use of condoms as a

whole for prevention of it. The study revealed that most of the respondents either do not know or have very little idea of any government program on HIV/AIDS. It was found that even high-level Govt. Official and NGO officials alike were not aware that Bangladesh Television (BTV) did not show any advertisement on condom use. Majorities of the respondents from all categories had stated that they had seen the advertisement of some condoms on different television channels such as ETV, Channel I as well as some other major Indian channels. Subsequently, respondents stated that whatever resistance there is against condom use these could be overcome if more condom-oriented advertisement was produced. As a whole all categories of the respondents had a good image of SMC. In the light of the study findings, the following four measures could be taken a) massive communication campaign; b) policies that should be adopted; c) suggestions for eradicating social taboos; and iv) suggestions on condom related advertisements.

**434. Haseen F; Uddin N; Khan, S; Chakrabarty N; Rob, U. Baseline HIV/AIDS survey among youth in Bangladesh-2005. Dhaka: National AIDS/STD Program & Save the Children, USA, 2006.**

To assess young people's knowledge of HIV/AIDS and STIs; access to information, STI services and condoms; and attitudes of parents/guardians, teachers, community leaders and health service providers toward HIV/AIDS and STI intervention programs; and views of policy planners of relevant ministries, this study was conducted. The survey was ecologic, cross sectional and descriptive in nature. It employed a nationally and divisional representative tow-stage sample that was selected from integrated multi purpose sample (IMPS) maintained by Bangladesh Bureau of Statistics (BSS). The survey was conducted in 360 randomly selected PSU from 6 divisions and from two statistical metropolitan areas of Bangladesh. The study showed that youth of Bangladesh have high awareness and fairly good knowledge of HIV/AIDS but they have many misconceptions. Risky sexual behavior is common among youth and condom use is unacceptably low. Although availability of condoms is fairly high, social norms with stigmas associated with purchasing condoms is the major barrier to condom use by youth. 1% of married youth are positive for syphilis and more than 15% of youth had suffered at least one episode of HSV2 infection by 24 years of age. Among the respondents, only 25% to 35% are illiterate. Although television is a preferred source of information, all the media reach important segments of the general youth population. Peers are an important source of reproductive health and HIV/AIDS information but not the parents. Youth have high prevalence of sexually transmitted infection symptoms and STIs but their knowledge and care seeking behaviors are very poor. This survey also shows that the information about HIV/AIDS is important but only being 'knowledgeable' is not enough. Efforts should be made and continued to increase awareness and knowledge. Information on safe sex and condom use will be the most sensitive issues. Evidence based practice guidelines to ensure uniformity and quality of care are required for health care providers. Strong public support and back-up plans are required to remove barriers of HIV education and condom promotion.

**435. Hashima-e-Nasreen. Is there a role for non-formal health practitioners in controlling sexually transmitted diseases: a plea for a community perspective? Dhaka: BRAC, 2000.**

The study attempted to describe the existing practices of the non-formal practitioners in managing STD patients and also, the possibility of their participation in public health interventions to improve STD management and services. For the study, review of all relevant

documents, observation and data collection through questionnaire's interview and discussion were made. Study findings revealed that rural people, when infected with a STD often sought help from pharmacists or village doctors, traditional healers and community health workers. They did not feel free to go to the formal health sector due to the social stigmatization of the discussion of sexuality and sexual health related problems. Thus too often high cost of treatment and the low quality of clinic counseling also discourage people from going to STD clinics. So that a community-based RTI/STD control and prevention programme was needed that would bring the networks of the non-formal health sectors together with the formal health sectors. Study findings also revealed that neither the non-formal nor the formal health providers were able to give adequate information about control and prevention of STDs. Thus the study recommended that programmes should be innovative in the planning and designing of materials and training curriculum for the non-formal health practitioners. Picture stories would be the most appropriate means to mirror the target community. With regards to some of their high-risk treatment, both healers and patients would have to be taught about the dangers so that they could easily avoid them and make appropriate referrals, if needed. Given the importance of non-formal sector in rural health care for the poor, it could be expected that sexual health services would be improved when traditional healers and other existing practices become integrated rationally into the system.

**436. Hashim-e-Nasreen. Reproductive tract infections and sexually transmitted diseases in a rural area of Bangladesh: insights for action from research. Sweden: Umea University, Department of Epidemiology, Public Health and Clinical Medicine, 2001.**

The study aimed to assess the magnitude of problem associated with RTIs/ STDs in rural Matlab, Bangladesh. It estimates the prevalence and attempts to explore the risk indicators for STIs and STDs among the peoples of different age group within the existing socio-cultural context. Qualitative and quantitative research methods were used in this study. In-depth interview, focus group discussion and a cross sectional survey of randomly selected men, women and adolescent boys and girls were the main methods employed. The ICDDR; B surveillance database provided the sampling frame. The result of the survey displayed about 19 % of people in Matlab have had STDs lack of accessibility and availability adequate services, traditional and un-hygienic health practices, absence of programme, and illiteracy and poverty were the prevalent socio- cultural factors that potentially had put people at risk of RTIs, STDs and as well as at HIV/ AIDS epidemic. The bridge between non-commercial and commercial partners was laid by men whom work in urban area push up the livelihood of infection from the high risk (urban) to low risk group of women in the risky sexual behavior was also prevalent among the adolescents. Partner's communication and treatment seeking behavior were found to be very poor among adults and it is not at all among adolescents. To give emphasis on RTI/ STD control and prevention together with human relationship, communication, gender, family interaction and socio-economic status that would determine the nature and extent of peoples risk and vulnerabilities. There is a need for collaborative action addressing rural people's risk assessment component

**437. Islam M; Mitra AK; Mian AH; Vermund SH. HIV/AIDS in Bangladesh: a national surveillance. *International Journal of STD & AIDS*. 1999; 10: 471-474.**

This paper attempted to present the findings of a national surveillance for HIV/AIDS in Bangladesh. In fact, data were still scarce to quantify the disease burden precisely in the country. The Nationwide Surveillance of HIV/AIDS from 1989 through 1996 in Bangladesh

included several risk groups such as professional blood donors, patients with sexually transmitted diseases (STDs), pregnant women at antenatal clinic, commercial sex workers (CSWs), patients with tuberculosis, long-distance truck drivers, sailors and non-residents. The population was enrolled by convenient sample after taking informed consent. Among 70,676 persons tested 80 (1.13%) were HIV positive. The prevalence rate steady until 1994 and then increased rapidly. The rate among male heterosexuals was significantly higher than that in females (3.40 per 1000 versus 0.29 per 1000; odds ratio 11.60; 95% confidence intervals 6.45 to 21.16;  $p < 0.0001$ ) 12% of patients with STDs had HIV. The HIV cases concentrated in 2 districts, Sylhet (25/72) and Chittagong (20/72) that is the border of India and Myanmar, respectively. Frequent movement of peoples of Bangladesh to India, Pakistan, Myanmar and Thailand, Where HIV rates were higher, was one of the possible sources of spread of the cases. Bangladesh might have the potential to avert epidemic spread of HIV its early stage.

**438. Khan LA; Choudhury MZU; Begum RA. Sexually transmitted diseases among the immigrants seeking job abroad for job. *JOPSOM*. 1999; 18(1): 41-45.**

The overall objectives of the study were to collect information on epidemiological attributes in relation to HBV, syphilis, HIV positive cases among the persons seeking job abroad. This descriptive cross-sectional study was carried out in the selected health checkup centres of Dhaka city with a view to collect information on epidemiological attributes in relation to HBV, syphilis, HIV positive cases among the persons seeking job abroad. A structured interview schedule was used for data collection from the respondents by maintaining privacy. Blood samples are collected from 206 persons going abroad for job. The result showed that majority of the workers was in the age group of 21-30 (71.36%) followed by 31-40 (15.53%) years. Distribution of the respondents by profession were agriculture 77 (37.37%), business 60 (29.13%), private service 26 (12.62%), unemployed 18 (8.74%), student 15 (7.28%), housewife 6(2.91%) government service holder 3 (1.46%). Out of 206 workers 1818 were found positive for HBSAg (ELISA), 5 were positive for syphilis (VDRL & PHA) and none was found positive for HIV. Among these workers, 34 were abroad and of them 7 enjoyed sex. 51 had given the history of premarital and 15 post marital sex with girl friends, prostitutes and others. Only 2 received transfusions and none had undergone surgery within last 6 months. 79 and 66 had history of regular and occasional saloon shaving respectively. The findings of the study were the indicative of the fact that prevalence of HBSAg and STDs, were increasing in Bangladesh. As hair trimming or shaving in commercial saloons is almost universal in this country, this may be regarded as a potential route for spread of Hepatitis B in this country. As sample size in this study was small, further studies were recommended to confirm the findings. However, the prevalence of HIV in Bangladesh is still maintained at the lower levels.

**439. Khan MMH; Kabir M; Mori M. Do various sources disseminating AIDS information make significant difference to antenatal care in Bangladesh? *Journal of Health & Population in Developing Countries*. 2005; 2-14.**

This study was attempted to examine the additional impacts of the some sources, engaged in disseminating AIDS information, on antenatal care (ANC) services in Bangladesh. Data from the BDHS 1999–2000 was used in this study. This survey was conducted during November 1999 to March 2000 through a collaborative effort of three organizations namely NIPORT, Mitra & Associates and ORC Macro in USA. Multivariate adjusted logistic regression found that radio, television, newspapers/magazines, pamphlets/posters, health workers, and friends/relatives significantly associated with ANC services. Multiple sources showed even

stronger association with the services. The study revealed that more than 85% women delivered their last babies at home and only 7% delivered at government facilities in Bangladesh. Since home deliveries were always at increased risk of complications. In brief, as (i) the available literatures had indicated numerous advantages of receiving ANC services, (ii) the information of AIDS received from the individual as well as multiple sources significantly increased AIDS prevention activities and ANC services, (iii) adequate number of ANC visits were very low (only 13%) in Bangladesh, and (iv) the rate of women did not even hear about AIDS was very high (about 70%). Therefore this study underscored the needs of disseminating AIDS information from multiple sources to improve the ANC services and to increase AIDS knowledge and prevention activities among pregnant women.

**440. Khandaker A; Khan MMH; Ahsan N; Chowdhury MFE; Kabir M; Mori M. Association between decision making autonomy and knowledge of HIV/AIDS prevention among ever married women in Bangladesh. *J Med. Sci.* 2006; 6(2): 155–163.**

This study investigated the association of decision making autonomy with HIV/AIDS prevention knowledge among married women in Bangladesh. Data were used from the 1999-2000 Bangladesh Demographic and Health Survey (BDHS). For measuring women's autonomy in decision making, the study used size factors namely who took the final decision about their own health care; child health care; purchasing of large household materials; purchasing of household things for daily needs; visiting family, friends and relatives and what foods to be cooked using these factors a combined score for autonomy was constructed using Likert method. Univariate analysis showed that 84% of women did not have any HIV/AIDS prevention knowledge. Multivariate logistic regression analysis revealed that women's autonomy in decision making was an important correlate of HIV/AIDS prevention knowledge even after adjusting for some potential factors such as age, education, occupation, place of residence, exposed to radio, television and newspaper. Multivariate adjusted odds ratio revealed that women with highest score of autonomy had significantly higher knowledge of HIV/AIDS and prevention compared with women with no autonomy. Since Bangladesh is at risk for HIV/AIDS epidemic for several behavioral and biomedical risk factors, increasing women's autonomy might be an important path to combat the consequences of HIV/ AIDS in Bangladesh.

**441. Mamtaz A. HIV/AIDS: response to the pandemic in Bangladesh. *JOPSOM.*1999; 18(1):74-83.**

This paper was written to assess the situation of HIV/AIDS in Bangladesh—particular in a pandemic manner. AIDS is threatening the whole world as a great pandemic. UN AIDS and WHO jointly have estimated global HIV/AIDS cases to be 33.4 million. In the spring of 1981, it was reported from Los Angeles, New York and California that some peculiar illness was occurring among otherwise healthy young men, later on through investigations it was proved that a virus named HIV was the etiological agent for the peculiar malady (1983-1984). WHO estimates that Asia will become a high prevalent area of HIV/AIDS. The neighboring countries of Bangladesh already have high prevalence of HIV/ AIDS. Bangladesh's close business and trade relationship with these countries, Bangladesh people's regular visits to these countries in large number and Bangladeshi geographic proximity with the high prevalence areas, as well as, with the so-called Golden Triangle make the country particularly vulnerable. There is significant number of drug users, which is another great risk of HIV transmission through intravenous drug use, blood and blood product. Poverty, gender,



behavior change communication, human rights etc are the cross cutting issues, which need to be addressed in HIV/AIDS prevention program. The paper describes the need of more social treatment of the HIV/AIDS infected patients. A Total number of 102 HIV/positive persons have so far been detected in Bangladesh. Out of the AIDS positive persons have so far been detected in Bangladesh and 10 of them have developed AIDS. The paper elaborately describes the various measures undertaken by the Government of Bangladesh (GOB) for the control and prevention of HIV/AIDS, which also include objectives, strategies, and donors support. The main focus of National AIDS/STD program is on Behavior Change Communication (BCC) and condom promotion. GOB has also taken a safe blood transfusion program under the Health and Population Sector Program (HPSP) for 1998-2003 to reduce the spread of HIV/AIDS and other transmissible diseases. Non-Government Organization (NGO) constituted National STD/AIDS Network Bangladesh and is actively participating in the program in collaboration with the GOB. Bangladesh is one of the poorest countries of the world with burden of 122.08 million people in a small land struggling to fulfill the basic needs of its people. Naturally, the country can not afford the expensive laboratory monitoring and treatment costs for AIDS. So, Bangladesh should take prior initiatives in all of social and economic programs to prevent this deadly disease.

**442. Nahar A; Azad AK. Sexually transmitted diseases (STD)/reproductive tract infections (RTI) including acquired immunodeficiency syndrome (AIDS)/human immunodeficiency virus (HIV) infections among the women of reproductive age group: a review. *JOPSOM*. 1999; 18(1): 84-88.**

This review intended to highlight sexually transmitted diseases (STDs)/reproductive tract infections (RTIs) including acquired immunodeficiency syndrome (AIDS)/human immunodeficiency virus (HIV) infections which affect reproductive health of women. The article also aimed to describe the risk factors and cultural practices responsible for exacerbating STDs/RTIs and AIDS/HIV infections and the areas of intervention to control these diseases. The strategies on diagnosis and prevention of above infections are also described. The number of STDs/RTIs including AIDS/HIV infections is increasing throughout the world. The problem of STDs/RTIs including AIDS/HIV infections among the women aged 15-19 years is increasing at an alarming rate. The biological risk factors of the women are age, gender, blood transfusions and asymptotic STDs/RTIs. The cultural risk factors are touching with pharmaceutical products, use of intra-vaginal substances and anal sex. The prevention and control of STDs/RTIs including AIDS/HIV is a social as well as public health issue. Early diagnosis and treatment of these infections in women are often hindered. Simple, formal and sustainable evaluation programmes should be conducted to achieve the impact of intervention

**443. Nessa K; Waris SA; Sultan Z; Monira S; Hossain M; Nahar S; Rahman H; Alam M; Baatsen P; Rahman M. Epidemiology and etiology of sexually transmitted infection among hotel-based sex workers in Dhaka, Bangladesh. *Journal of Clinical Microbiology*. 2004; 42(2): 618-621.**

The purpose of this study was to identify the prevalence of sexually transmitted infections (STIs) and reproductive tract infections (RTIs) among hotel based sex workers in Dhaka, Bangladesh. A total of 400 HBSWs were targeted to employ in the study during April to July 2002. Endocrinal swabs, high vaginal swabs, and blood samples from 400 HBSWs were examined for Neisseria gonorrhoea (by culture), Chlamydia trachomatis (by PCR), trichomonas marginalizes (by microscopy), antibody to treponema palladium (by both rapid plasma regain

and treponema pallidum hem agglutination tests), and antibody to herpes simplex virus type 2 (HSV-2) (by enzyme linked immunosorbent assay). The study results showed that the sociodemographic information as well as gynecological and obstetrical information was alarming. Among the HBSWs, 228 women (57%) were symptomatic and 172 (43%) were asymptomatic, 35.8% were positive for gonorrhoea, 43.5% were positive for C, trachomatis and 4.3% were positive for T. Marginalizes. They were infected a total of 8.5% had syphilis, 34.5% were positive for HSV-2, and 86.8% were positive for at least one RTI or STI. There was no significant difference between the prevalence of STIs among the symptomatic and asymptomatic HBSWs. These data suggested a high prevalence of STIs, particularly gonorrhoea and Chlamydia, among HBSWs in Dhaka.

**444. Rahman S; Ahmed MU; Barkat-e-Khuda; Ahmed S. Can medicine-sellers in pharmacies meet the needs of STD clients? : observations from an urban area of Bangladesh. Dhaka: ICDDR, B, 1999. (ICDDR, B working paper; no. 159).**

The study was initiated to assess the profiles of the medicine sellers of pharmacies of urban areas of Bangladesh and to assess their knowledge on STD/HIV/AIDS and their practices in managing the STD cases. In total 201 medicine-sellers from 157 pharmacies of Tongi Municipality area were surveyed. A self-administered questionnaire was used for collecting data to explore the profiles and reported STD case management practices of the medicine-sellers and the mystery shopping events to observe their practices. All the 207 medicine-sellers filled up the questionnaire. The mystery shopping events were conducted in 33 randomly selected pharmacies. In the mystery shopping events, trained persons pretended to be STD clients and sought services from the selected pharmacies. Results of the study showed that 93% of the medicine sellers completed at least 10 years of schooling. Medicine-sellers defined STDs as only gonorrhoea or syphilis, and 84% were able to mention the STD related complications. Forty-three percent could describe AIDS and 65% could mention at least one preventive measure of AIDS. Ninety-six percent reported that they received STD clients with complaints of urethral discharge, genital ulcer, and vaginal discharge. There was a gap between the reported and the observed practices of the medicine-sellers. Seventy-two percent reported that they referred their STD clients to physicians, and 43% reported that they provided treatments. During the mystery shopping, it was observed that only 4 of the 33 medicine-sellers referred the STD clients (Mystery shoppers) and 27 provided treatments and counseling. The study suggested that initiative should be taken to conduct operations research to test whether medicine-sellers could provide standardized treatments for STDs, including appropriate referral.

**445. Rahman S; Khan AI; Razzaq R; Shams I. Operational aspects of syndromic management of RTIs/STIs at a primary healthcare-level clinic. Dhaka: ICDDR,B, 2001. (ICDDR,B working paper; no. 151).**

This study was carried out to assess the facilities for syndromic management of RTIs/STIs; acceptability of this management approach by providers; and compliance of clients with this approach at a PHC level satellite clinic. Observations, interviews and review of clinic statistics were the tools used for the assessment. In total, 33 observations were carried out. All on-duty providers and 27 RTI/STI clients were interviewed to gather their views on the management approach. The clinic statistics on RTI/STI services were reviewed. The results of the study showed that services for syndromic management of RTIs/STIs were provided as a component of ESP, which included maternal and child health family planning, and EPI services. The

clinic had necessary privacy for consultation and instruments for examination of RTI/STI clients, during the one-year study period, 341 clients received services for managing their RTIs/STIs from the clinic. These elements were diagnosed as having virginities (36%), urethral discharge (3%) and genital ulcer (1%). The provider prescribed antibiotics to all clients and in 18% of the cases, the technical standard guidelines were not followed of the 341 clients, only 2% purchased drugs from the clinic. Since 98% of the clients did not return for follow-ups their compliance with treatment was difficult to apprehend. The RTI/STI clients expressed their satisfaction on the services and counseling received from the providers, and did not have any objection and/or difficult to physical examinations. The service related statistics showed that the rate of servilities with the compliant of regional discharge among the women was high which contradicted the results of the recently accomplished STI prevalence studies in Bangladesh. The finding of the study suggested that this study explored and identified some important operational aspects of syndromic management that could be taken care of and given special consideration to ensure RTIs/STIs management services with quality at the lowest static health centers in rural areas of Bangladesh.

**446. Rahman MM; Kabir M. Do adolescents support early marriage in Bangladesh? : Evidence from study. *JNMA* 2005; 44:73-78.**

Adolescence is a critical period for female adolescents as they have to make decisions regarding their marriage, education and work which would influence and determine their future course of life. Although, early marriage has negative consequences, still a proportion of female adolescents favor early marriage because of prevailing cultural norms. This paper attempts to investigate the factors influencing the adolescents' attitude towards early marriage among the married and unmarried female adolescents. This is a quantitative and qualitative study. A multistage cluster sampling technique was used to select the sample. For quantitative results, data on 3362 female adolescents from rural and urban areas irrespective of their marital status were analyzed. To supplement the results found in quantitative analysis, a series of focus group discussions were conducted among the adolescents. Analysis revealed that one fourth (25.9%) of the adolescents were in favor of early marriage. A number of societal factors influenced them towards early marriage, despite the fact that adolescents are aware of the consequences of maternal and child health. Multivariate logistic regression analysis showed that current marital status, years of schooling, work status and parental marital decision are important predictors of early marriage ( $p < 0.05$ ). The study concluded that female education would be an important determinant of adolescent marriage. Therefore, opportunities and scope of education beyond secondary would help

**447. Shahjahan M; Kabir M. Knowledge of men about reproductive health issues and factors affecting them in selected districts of Bangladesh. *Journal of Nepal Health Research Council*. 2004; 2(2).**

The study was conducted to ascertain knowledge, perception and practice of married men on some selected reproductive health issues; such related issues have narrowly focused affecting it. It was cross sectional study. A total of 615 married men were interviewed for the purpose. Data were collected through an interview schedule. The study was conducted in Dhaka (Agargaon), Narayanganj, Narshinghdi, Tangail, Narail and Gaibandha of Bangladesh from January to June 2002. The findings showed that mass media interpersonal communications were the main source of knowledge of reproductive health issues. The analysis of data showed that 19 percent, 51 percent and 37 percent man had assessed to newspaper, radio and TV

respectively. Results of the study showed that more than 90% of the men approved family planning and among them 63% were currently using family planning methods. A wife supporting 59% of the men reported that they visit clinic with wife and they stay with wife during delivery. Over 80% men reported that they take care of foods during gestation. There is an association between education and spousal discussion reproductive health issues. The logistics regression analysis on male involvement in reproductive health shows that education, occupation, number of children and monthly income are the important determinants of male involvement in reproductive health. Regardless of their level of knowledge about reproductive health issues, men were the important decision-makers. Program had interventions to improve the issue of reproductive health services showed address the information needs of men. There is a need to orient service providers about the role of men in improving family health, to increase their knowledge of prevention and management of reproductive health problems.

**448. Sharmin S; Rahman MA; Hossain SK; Islam N. Assessment of knowledge on HIV/AIDS among Madrassa teachers. *JOPSOM*. 2005; 24(2): 64-72.**

This research work was intended to assess the knowledge on HIV/AIDS among the Madrassa teachers. A cross sectional study was carried out during April-June 2005 among 99 teachers in eleven Madrassa of Dhaka and Khulna division. Non-probability purposive sampling was done to collect data from the teachers who agreed to give an interview. A face to face direct interview was conducted among the selected teachers by using a pre-tested semi-structured questionnaire. It was observed that most of the respondents heard the name of HIV/AIDS from magazines (82.2%) and 72.7% from television. Majority of them (67.7%) have the knowledge that the causative organism of AIDS is a virus. Their knowledge about the route of transmission, the high-risk group, consequences and prevention of HIV/AIDS was average. However, majority of the respondents (81.8%) opined that people should be well informed about HIV/AIDS. It was also observed in the study that continuous mass campaigning through media, posters, magazines etc. for the last few years has improved the knowledge of people including madrassa teachers on HIV/AIDS. Moreover, different training program on HIV/AIDS organized by government and some non-government organizations for madrassa teachers had enriched their knowledge. Still it is not adequate to take active part in prevention of this impending danger of HIV/AIDS epidemic. The results of the study suggested that the madrassa teachers including other religious leaders should be equally trained and make them aware about the impending danger of HIV/AIDS so that they can equally take active part in the prevention of disease.

**449. Shirin T; Ahmed T; Iqbal A; Islam M; Islam MN. Prevalence and risk factors of Hepatitis-B Virus, Hepatitis-C Virus and human immunodeficiency virus (HIV) infections among drug addicts in Bangladesh. *J Health Popul Nutr*. 2000; 18(3): 145-150.**

The objective of the study was to investigate the prevalence and risk factors of hepatitis-B virus (HBV), hepatitis-C virus (HCV), and human immunodeficiency virus (HIV) infection among drug addicts in Bangladesh. This cross-sectional study was conducted in the Central Drug Addiction Treatment Centre in Dhaka, Bangladesh, from November 1996 to April 1997. The study-subjects included those drug addicts who were treated at the Centre. These patients were known to be drug users through oral, inhalation or intravenous/ intramuscular routes. A total of 266 drug users attended the centre during the study period and were enrolled into the study after obtaining voluntary informed consents. Of the 266 subjects, 129 were injectable drug users (IDUs) and 137 were non-injectable drug users (non-IDUs). The seroprevalence of

hepatitis B virus surface antigen (HBsAg), anti-HBc, ANTI-HBs, and anti-HCV antibodies among the IDUs were 6.2%, 31.8%, 11.6% and 24.8% and among the non-IDUs were 4.4%, 24.1%, 6.6%, and 5.8% respectively. None of the drug users were positive for anti-HIV antibody. Although the prevalence of HBV infection did not significantly differ between the IDUs and non-IDUs, the prevalence of both HBV and HCV infections was associated with sharing of needles and longer duration of injectable drugs used. The seroprevalence of HBV infection in both IDUs and non-IDUs was significantly higher among those who had a history of extramarital and premarital sex. The prevalence of HCV infection was not associated with sexual promiscuity. There was no association between the seroprevalence of HBV and HCV infections and age. Active preventive programmes focusing on educational campaigns among the youths against substance abuse should be undertaken.

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