

***Operationalizing Essential Services
Package Delivery in the Public
Sector in Dhaka City***

**Baseline Findings from a
Cross-sectional Study**

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Acronyms

ADB	Asian Development Bank
ASMFR	Age-specific Marital Fertility Rate
ANC	Antenatal Care
ARI	Acute Respiratory Tract Infection
BCG	Bacille Calmette Guerin
BP	Blood Pressure
CDD	Control of Diarrhoeal Diseases
CPR	Contraceptive Prevalence Rate
CT	Copper-T
CUS	Centre for Urban Studies
DCC	Dhaka City Corporation
DGHS	Directorate General of Health Services
DFP	Directorate of Family Planning
DPT	Diphtheria, Pertussis, Tetanus
ELCO	Eligible Couple
EPI	Expanded Programme on Immunization
ESP	Essential Services Package
FP	Family Planning
FWV	Family Welfare Visitor
GoB	Government of Bangladesh
GOD	Government Outdoor Dispensary
H&FP	Health and Family Planning
Hb	Haemoglobin
HPSS	Health and Population Sector Strategy
HPSP	Health and Population Sector Programme
HQ	Headquarters
IUD	Intra-uterine Device
MOLGRD	Ministry of Local Government, Rural Development and Cooperatives
MBBS	Bachelor of Medicine and Bachelor of Surgery
MOHFW	Ministry of Health and Family Welfare
MWRA	Married Women of Reproductive Age
NIPHP	National Integrated Population and Health Programme
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PHC	Primary Healthcare
PNC	Postnatal Care
PSU	Primary Sampling Unit
RTI	Reproductive Tract Infection
STD	Sexually Transmitted Diseases
TFR	Total Fertility Rate
TTBA	Trained Traditional Birth Attendant
TT	Tetanus Toxoid
UPHC	Urban Primary Healthcare
UVP	Urban Volunteer Program
WDR	World Development Report

Contents

	Page
Summary	vii
Introduction.....	1
Status of Health and Family Planning in Urban Dhaka	3
ESP Intervention by ORP.....	4
Setting.....	5
Design and Methodology.....	6
Objectives of the Study.....	8
Analysis Plan	8
Methodological Limitations	10
Results and Discussion.....	10
Conclusions	36
References	37

Tables

Table 1.	Intra-urban differential in health and family planning indicators	3
Table 2.	Programme performance in urban areas as assessed by the household surveys.....	4
Table 3.	Comparative data from urban slum survey of Dhaka metropolitan area	6
Table 4.	Background characteristics of the currently MWRA from the survey	10
Table 5.	Age-specific marital fertility rate and age-specific contraceptive prevalence rate of married women by residence.....	15
Table 6.	Mean desired family size in relation to educational level of the husbands	16
Table 7.	Women's knowledge and use of family planning methods in the study population.....	17

	Page
Table 8. Percentage distribution of current FP use by the duration of marriage	19
Table 9. Current contraceptive use by method, age group, and residence	20
Table 10. Distribution of future intention to use contraceptive methods	21
Table 11. Preference regarding family size and number of children	21
Table 12. Preference regarding additional children by the number children (any sex).....	22
Table 13. FP method choice by the number of living children in the study population.....	23
Table 14. Obstacles encountered by the current users of modern FP methods by residence	23
Table 15. Reasons for discontinuation of last FP method use by residence	24
Table 16. Unmet need for family planning in the study population by residence.....	25
Table 17. Prevalence of pregnancy among married women interviewed by residence and age	26
Table 18. Distribution of ANC use during the last pregnancy by number of living children and residence.....	26
Table 19. Distribution of type of ANC provider	27
Table 20. Type of care received during ANC	27
Table 21. Sources of ANC, and PNC by slum and non-slum residence	28
Table 22. Childhood immunization coverage among 12-23 months old children.....	29
Table 23. Comparison of childhood immunization coverage by timing of BCG immunization	29
Table 24. Comparison of immunization dropout rate by slum and non-slum residence	30
Table 25. Retention of immunization card by slum and non-slum residence.....	30
Table 26. Source of immunization services by slum and non-slum residence	31
Table 27. Distribution of TT coverage by slum and non-slum residence	31

	Page
Table 28. Vitamin A coverage in the last six months among children of 12-59 months by slum and non-slum residence	32
Table 29. Prevalence of cough with difficult breathing in the last two weeks prior to the survey among slum and non-slum children aged less than 5 years.....	33
Table 30. Mothers of children aged less than 5 years from slum and non-slum residence who sought treatment for cough and/or cough with breathing problem during the last two weeks	33
Table 31. Prevalence of diarrhoea and use of ORT during the last two weeks among children aged less than 5 years by slum and non-slum residence	34
Table 32. Slum and non-slum MWRA who ever visited any health facilities	34
Table 33. Distribution of purpose of visit (first reason) to different health facilities by slum and non-slum MWRA.....	35

Figures

Fig. 1. Urban clinic-based service delivery.....	2
Fig. 2. Urban service delivery tiers.....	3
Fig. 3. Categories of occupation of the wives in the study population	13
Fig. 4. Categories of occupation of the husbands in the study population	14
Fig. 5. Age-specific fertility rate by residence.....	15
Fig. 6. Age-specific contraceptive prevalence rate by residence.....	15
Fig. 7. Contraceptive method mix in the study population	18
Fig. 8. Sources of FP methods in the study population	18

Annexures

Annexure A: Essential Services Package	39
Annexure B: Percentage of ever-user and current user of FP methods by number of living children and age groups	41
Annexure C: Percentage of currently MWRA using contraceptive by method and age group	42

Summary

A baseline household survey was conducted in the Sher-e-Bangla Nagar area of urban Dhaka in April–August 1999. The survey covered a sample of 1,817 married women of reproductive age (MWRA). Of them, 1,322 were from the slum and the remainder from non-slum areas. A structured questionnaire was used for interviewing the respondents in their homes. The 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.

Results of the survey showed that 66 percent of the slum women were uneducated, but they are more involved in income-generating activities than their non-slum counterparts. Slum women tend to marry early since 16 percent of the slum-respondents were adolescent mothers, compared to only 4 percent among the non-slum women.

The total 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-populations 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 percent 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%). Contraceptive use was found to increase with the increase in educational attainment.

The mean family size desired by the respondents was 2.2 in the slum households and 1.9 in the non-slum households. There was a discernable decline in the family size desire with increasing education irrespective of residence

Survey results reinforced that awareness about contraceptive is universal. The most popular method was pill in terms of awareness and use (100% and 37% respectively). The gap between awareness and use was wide for different methods and among the slum and non-slum populations. The largest gap existed between awareness and use of condom (95% and 14% respectively). A considerable big size of women was found to have known about the contraceptive methods but had never used any.

There were marked variations in the proportion of contraceptive users in the age groups below 25 years and above 35 years. In the 35-year and above age group, 37 percent of the women used contraceptive in the non-slum households, compared to only 23 percent in the slum households. On the contrary, 36 percent of the users in the slums were aged less than 25 years, compared to 15 percent in the non-slum areas.

More than half of the never-users expressed clear-cut desire to use a family planning method in near future. Among those who were current users of modern family planning methods, 58 percent of pill users and 90 percent of the injectables users reported side-effect to be a major concern. Husband's opposition was reported as a key obstacle to condom use, predominantly in the slum areas. Unmet need among those who intend to limit childbirth was one-fifth and among women who wished to space births was one-tenth.

The study revealed that prevalence of pregnancy among the currently married women of reproductive age was 10 percent (11% in the slum and 7% in the non-slum areas). About fifty percent of the pregnancies were found in the adolescent mothers

aged less than 20 years. Among women who reported occurrence of pregnancy in the year preceding the survey, seven percent of them from both slum and non-slum households obtained antenatal care. No discernable relationship of antenatal care use was evident with parity. Among those who sought ANC services, the mean number of visits to health centres by the non-slum pregnant mothers was 50 percent less than the slum mothers (2.1 versus 3.18).

Sixty-one percent of the total children aged 12-23 months on the day of survey were fully immunized, however, 59 percent completed the doses by the 1st birthday. On the other hand, only 68 percent of the ever-pregnant women had received 2 doses of tetanus toxoid (TT) with little difference in coverage between the slum and the non-slum women. None of the respondents in the reproductive age groups reported to have completed all the five doses of TT immunization.

The overall dropout rate in immunization of children was considerably high (19%) in the slum households. The dropout rate in measles immunization was 13 percent. Immunization coverage in the Dhaka city among children aged 12-23 months appeared to display a lowering trend. The slum/non-slum gap for maternal TT2 coverage, however, appeared to be diminishing.

The survey revealed that 90 percent children aged between one to five year(s) have received high-potency vitamin A capsules. Eighty-two percent of the children aged less than three years had received vitamin A, compared to 79 percent among the children aged three years or more.

Prevalence of simply cough and cough with difficult breathing among the children aged less than five years was 30 percent and 52 percent respectively. On the whole, 84 percent mothers reported to have sought treatment for the above respiratory illnesses within two weeks prior to the survey. On the other hand, 19 percent children aged less than 5 years suffered from diarrhoea in the last two weeks prior to the survey. The use of ORT among the respondents was very high. However, the slum mothers reported higher ORT use than the non-slum mothers.

The findings of this study point indicated to the need for improving childhood/maternal immunization for slum dwellers in particular. There is also a need to promote use of longer-acting family planning methods. Quality of family planning services needs to be improved to reduce the dropout rate. There is also a need to design strategies for encouraging women to use antenatal and postnatal care from the health facilities. A strategy to offer a package of essential preventive and curative healthcare services from the government primary clinics, with appropriate mechanisms to address the 'missed opportunities' and thereby meet the 'unmet needs' is critical to implement for improving the health status of urban populations to a somewhat satisfactory level.

Introduction

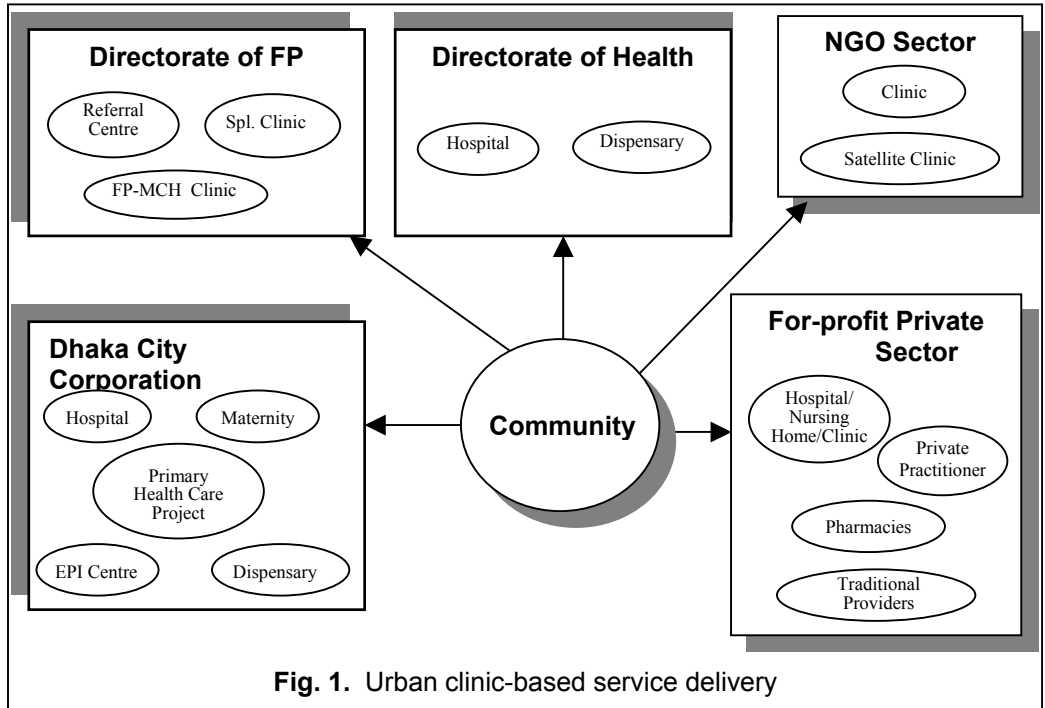
By 1961, Bangladesh was entirely a rural area with only five percent of the population living in the cities [1]. The process of urbanization in Bangladesh, however, gained momentum from early-1970s, mainly as a push effect of the ineffective rural development strategies. In 1995, approximately 25 million people were living in the urban areas comprising 20 percent of the total population [2], i.e. one out of five Bangladeshis lived in the urban areas. With this pace of growth (5-6% annually), the urban population is expected to double by 2010, i.e. 40 percent of the total population of the country is expected to reside in the urban areas [3]. Bangladesh's urban poor have the worst health status existing in the country. The situation will worsen without appropriate actions, because population growth in the urban areas is being accelerated mostly among the poor. Therefore, the Government of Bangladesh attaches high priority to improving the health status of the urban poor [4].

There is widespread agreement among policy-makers, programme managers, service providers, and donors on the need to focus efforts on moving the health and family planning system toward delivering a package of essential services which is oriented to meeting the clients' need. The Government of Bangladesh, under the Health and Population Sector Programme (HPSP), clearly envisioned a client-centred and financially sustainable service system to deliver, high-quality essential services to the population, especially women and children. While the strategies to deliver ESP in the rural areas were clearly depicted in the HPSP, modalities to provide the ESP in urban areas remained unaddressed. The elements of essential services packages have been adopted through necessary adaptations in view of the local conditions from the World Development Report 1993 [5]. Both Government of Bangladesh and the non-governmental organizations (NGOs) are committed to the delivery of the ESP components (Annexure A).

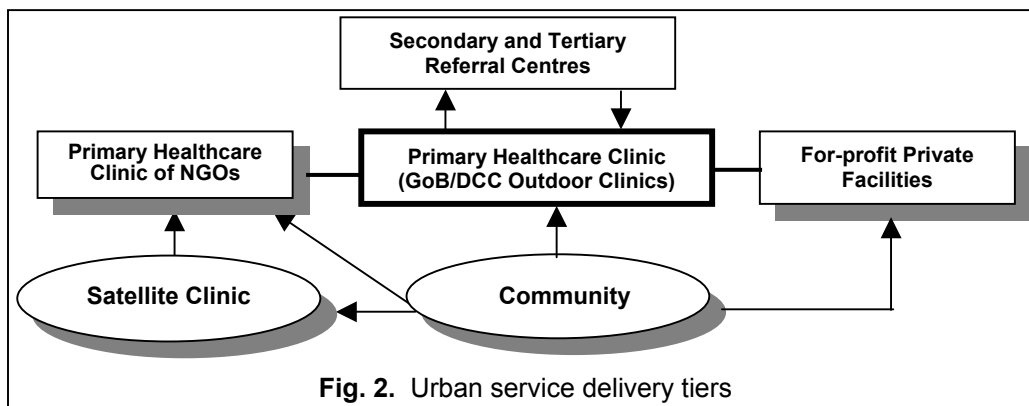
Since inception of the national health and family planning programme in Bangladesh, the rural service delivery system is relatively well-defined and structured, governmental agencies being the dominant provider. On the contrary, in urban areas a variety of GoB agencies and NGO counterparts provide health and family planning services. The commercial sector has numerous service outlets in urban areas comprising pharmacies, private practitioners and clinics. The multiplicity of providers, in the absence of appropriate coordination, leads to gaps and duplication that ultimately result in inadequate service provision for the urban poor [6].

Though these facilities provide essential services, individual facility usually offers a limited range of services, and many are single-purpose clinics, i.e. provide only EPI, or only FP, or only curative services, etc. The consequent fragmentation of services not only increases the cost of providing these services, but also limits access to these services as the opportunity costs for the clients go up (Fig. 1). On the positive side, programme managers, in general, express a desire to expand the range of services. Members of the staff at many of these facilities are either doctors or paramedics, and therefore, can be trained to provide a broader range of services [7].

The first comprehensive assessments of the urban health and family planning service needs and available services made by the former Urban MCH-FP Extension Project of ICDDR,B in 1994, revealed that most urban facilities provided only a narrow range of services and their quality was found to be poor, reflecting inadequate training, inappropriate or absent service-delivery protocols, weak support systems, such as lack of logistics, monitoring and supervision [8].



Until a change in the recent scenario, the lowest tier of service delivery in the urban areas was doorstep delivery provided by the GoB and NGO fieldworkers. Currently, the doorstep services have been withdrawn by the NGOs and shifted toward the static service-delivery sites. The fixed sites at the lowest tier are the satellite clinics organized by NGOs on once a month basis. The next tier of service delivery comprises clinics/dispensaries managed by NGOs, GoB, DCC and the for-profit private sector (Fig. 2). Most of them are staffed with paramedics and/or qualified physicians, and very little coordination and referral systems exist among them [9].



Status of Health and Family Planning in Urban Dhaka

Though the urban population generally appears to be healthier than their rural counterparts, there is a significant intra-urban differential in health and family planning status. In the urban slums, neonatal tetanus and measles cause 19 percent and five percent infant deaths respectively, and measles causes 16 percent of all deaths among 1-4 year(s) old children [10]. There is varying degrees of undernutrition in the urban slums. The prevalence of chronic undernutrition in slums is relatively low in the first year of life, but it steadily increases to about 60 percent by the third year of life. The prevalence of acute undernutrition is low in the first six months but it also increases thereafter to peak in the second year [10]. In the case of measles in the urban slums of developing countries like Bangladesh, greater levels of malnutrition, together with younger age, lead to higher levels of measles mortality [11]. The slum population often has lower immunization coverage, and lower use of contraception, compared to the non-slum urban populations [12]. There are also higher infant and child mortality rates and lower use of antenatal care in the slum areas. Data from the urban surveillance of the Operations Research Project (ORP) highlighted the intra-urban differentials in the coverage of health and family planning indicators (Table 1).

Table 1. Intra-urban differentials in health and family planning indicators

Indicator	Slum	Non-slum
Infant mortality rate	100.7	91.0
Child mortality rate	28.8	20.7
Crude birth rate	34.6	24.3
Crude death rate	7.3	5.3
Immunization rate of <1 year	58.0	77.0
Contraceptive prevalence rate	50.0	58.0

Source: ORP urban surveillance data 1995-1996

A household survey conducted in 1996 revealed that measles immunization and vitamin A coverage is substantially lower in the slums of Dhaka and Chittagong. Similarly, antenatal care coverage is substantially lower in the slum areas, compared to the non-slum areas (Table 2).

Table 2. Programme performance in urban areas as assessed by the household surveys

Indicator	Dhaka-Chittagong non-slum (%)	Dhaka-Chittagong slum (%)
Antenatal care use	55	18
Vitamin A (2 doses)	33	26
Measles coverage	73	53

Source: Bangladesh Bureau of Statistics, and UNICEF: Progotir Pathay, 1996.

ESP Intervention by ORP

To improve the health and wellbeing of the rapidly growing urban population, the Operations Research Project (ORP) of ICDDR,B started a new collaborative research effort with a number of governmental agencies based on the experience of working in the slums of Dhaka, and with the GoB and NGO stakeholders involved in the delivery of health and family planning services. The governmental agencies participating in the partnership are: Ministry of Health and Family Welfare (MOHFW), the two directorates under the MOHFW: Directorate General of Health Services (DGHS) and Directorate of Family Planning (DFP), and the Dhaka City Corporation (DCC).

The purpose of this collaborative research endeavour is to develop a model ESP service delivery system for the urban population with special focus on the slum and non-slum poor in the public sector clinic at Sher-e-Bangla Nagar Government Outdoor Dispensary in Dhaka. Through this operations research, the Project seeks to develop an ESP delivery strategy for urban areas and identify the programmatic and management implications of establishing/reorganizing urban public sector clinics for delivering ESP of acceptable quality.

The ESP intervention focuses on strengthening and standardization of ESP service delivery through protocol-based case management training of the providers in phases. For the purpose, a package of reproductive health and child health services was identified in consultation with concerned GoB managers and service providers. The identified ESP components for strengthening were as follows:

Phase One

Child Health

- (i) Child Immunization
- (ii) Vitamin A Capsule Supplementation
- (iii) Management of Acute Respiratory Tract Infection (ARI)
- (iv) Management of Diarrhoeal Diseases
- (v) Curative Care of other Common Diseases, like Scabies
- (vi) Promotion of Appropriate Infant Feeding

Reproductive Health

- Family Planning:
- (i) Injectables and IUD services
 - (ii) Non-clinical Contraceptive Services
 - (iii) Management of Side-effects and Complications
- Safe Motherhood:
- (i) Antenatal Care
 - (ii) TT Immunization
 - (iv) Postnatal Care

Phase Two

- Reproductive Tract Infections:
 - (i) Syndromic Management of RTI/STDs
 - (ii) Antenatal Screening for Syphilis
- Counselling and Health Education

The first phase of the intervention was marked by mobilization of support from the senior politicians, policy-makers, and programme managers. This was followed by a Comprehensive Needs Assessment Study at the Sher-e-Bangla Nagar Government Outdoor Dispensary from January to April 1998.

Setting

Dhaka is the largest city in the country with a population of about 8 million in 1998, up from 1.7 million in 1974. At the current rate of growth (6-7%), it is expected to be the ninth largest mega city of the world by the year 2,015 with a population of 19.4 million [13]. The Dhaka city is divided into ten administrative zones. Each zone is further divided into wards - the lowest administrative urban units. Approximately, 30 percent of the Dhaka city's population, live in slums in sub-optimal living conditions, and the living standard of at least half is below poverty line [14].

Since 1991, serious efforts have been taken by different organizations to understand the dynamics of the burgeoning slum and squatter settlements in the Dhaka city. The Centre for Urban Studies (CUS), in collaboration with Urban Volunteer Programme (UVP) of ICDDR,B, conducted a survey on slums in the Dhaka

metropolitan¹ area in 1991 [14]. The CUS, however, repeated the survey in 1996. Similarity in the distribution of slums was observed in the two surveys. On an average, 75 percent of the slums were located in the privately-owned land, and the remaining 25 percent were located in the public land. It was also revealed that 96.5 percent of the slums and squatter settlements were located within the boundaries of the Dhaka City Corporation [15]. Table 3 shows a comparative picture of the findings from these surveys.

Table 3. Comparative data from urban slum survey of Dhaka metropolitan area

Organization conducting survey	Year of survey	No. of slums and squatter settlements	No. of households	Total population	Population density/per acres person	Proportion of urban population
Center for Urban Studies	1991	2,156	129,700	718,415	910	20.16
Center for Urban Studies	1996	2,887	220,920	1,104,600	1,065	19.8

Design and Methodology

Study area and population

The Sher-e-Bangla Nagar Government Outdoor Dispensary of Agargaon pucca market is located in Ward 40 of Zone 6 of the Dhaka City Corporation (DCC). This primary healthcare facility is managed by the Directorate General of Health Services but the infrastructure belongs to the Public Works Department. Three different types of services are provided by the three different providers belonging to three governmental agencies included in the partnership. This dispensary is located close to a large slum settlement². Due to its location, its catchment area include adjacent wards of Zone 7 of the DCC. This area is known as Sher-e-Bangla Nagar. This particular area has been selected as the project intervention area for the following reasons:

- i. ORP, in collaboration with MOHFW and DCC, selected this area for piloting an ESP delivery intervention through the public sector clinic.
- ii. The area is fairly representative of Dhaka city with a mixed slum/non-slum population, and about 25 percent of its population occupy the slum households.
- iii. The total area of the zones were too large for effective implementation and evaluation of interventions.

Sampling procedure

Since initiation of the ESP intervention at Sher-e-Bangla Nagar Government Outdoor Dispensary in December 1997, ORP decided to expand its urban surveillance within the

¹ Dhaka Metropolitan area (DMA) is slightly larger than the Dhaka City Corporation area [14].

² A slum is defined as a group of households made of flimsy material, occupied by three or more adults per room and located in an area with poor sewerage and drainage, inadequate water supply, irregular or no disposal of garbage, a few or no paved streets, insufficient or no street lighting, and no access to gas supply [14].

catchment area of the clinic. With this intention, the Project conducted exit interviews to determine locations of clients' residence of those who attended the Dispensary. The findings showed that 75.15 percent clients attended the clinic from Ward 41, which is predominantly slum while the rest came from Ward 40. Considering the distribution pattern of the clients' residence, the whole of Ward 41 and part of Ward 40 were selected for sampling of households for surveillance of the intervention effect on the community. Operations Research Project (ORP) routine surveillance data on health, demographic and programmatic indicators are being collected quarterly from the same households included in the baseline survey.

The required sample size was an estimated 64 cluster households. A multistage aerial sampling methodology was used for selecting these clusters. Prior to the survey, the intervention area was mapped and divided into primary sampling units (PSUs) each having 50-200 households. The PSUs were defined as being predominantly slum (104) or predominantly non-slum (50), based on the building materials. The PSUs were then divided into clusters of 20-50 households. From the defined PSUs, 44 slum clusters and 20 non-slum clusters were selected using simple random sampling.

The baseline household survey, conducted between April and August of 1999, included 2,400 households. The survey respondents included 1,817 currently married women of 15-49 years of age. In total, 1,322 respondents were the residents of slum households while the remaining 495 came from the non-slum households. Over-sampling of slum respondents was due to the fact that 78 percent of the clients attended the intervention clinic from the adjoining slum areas in Ward 41.

Objectives of the Study

Broad objective

To collect reliable specific data relevant to the project area for a situation analysis of needs and to collect baseline information required for ESP intervention design and monitoring and the operations research evaluation

Specific objectives

- To provide reliable estimates of population parameters (such as fertility, morbidity, CPR, maternal and child immunization coverage, etc.) of a probability sample of the population
- To provide a population and health baseline estimates for evaluating the effectiveness of the ESP intervention

Data collection procedure

Survey data were accrued for 1,817 wives who were included in the survey. The respondents who were included as couples in the survey, were interviewed separately; wives were interviewed earlier. The interview schedules, and questionnaire, structured in Bangla, was prepared with many similar and dissimilar questions for female and male respondents. These were finalized only after careful pretests. The survey was supervised and supported by the field research officers of the Operations Research Project. The male and female surveyers underwent a detailed 5-day theoretical and practical training conducted by all researchers involved in the preparation of the survey. In addition, the supervisors were oriented thoroughly about the interview schedule, instructions for the interviewers, principle and problems of the interview. The supervisor edited each of the interview schedules and checked for completeness of data recording.

Analysis Plan

The analysis of data from the survey encompassed the following aspects:

- i. Household socio-demographic and economic characteristics
- ii. Reproductive health status and service use
- iii. Health status indicators and service use

The following variables were analyzed:

- i. Household Socio-demographic and Economic Characteristic**
 - Age-sex composition
 - Family size
 - Parity
 - Duration of marriage
 - Education
 - Religion
 - Employment status of women
 - Monthly expenditure

- ii. Reproductive Health**
 - a. Family planning**
 - Fertility
 - Knowledge and use of birth control methods
 - Contraceptive use by duration of marriage, methods, and age groups
 - Attitude toward family planning
 - Inter-relationship between knowledge and other factors
 - Unmet need for family planning
 - Prevalence of pregnancy

 - b. Antenatal and postnatal care**
 - Service use
 - Source of care
 - Type of provider
 - Type of care

 - c. Health profile, practices, and service use**
 - Immunization status
 - Vitamin A supplementation
 - Prevalence of diarrhoea
 - Use of ORT
 - Prevalence of simply cough and cough with difficult breathing
 - Treatment for cough
 - Healthcare-seeking behaviour

Methodological Limitations

There are several limitations of the present study. The larger sample totaling 223 children aged 12-23 months and 218 mothers with child(ren) less than 1 year and 1,707 ever-pregnant women of reproductive age allowed analysis of coverage in sub-groups of population which the traditional 30-cluster methodology would have allowed. However, maternal recall of dates of immunizations of children in cases where card was lost has introduced some error, presumably in all sub-groups. Relying on maternal recall for TT immunization in the distant past may have been even greater sources of error. One recent study in Matlab has shown women to under-report (40%) TT doses given a year ago. Another limitation of the survey is limited degree to which the study area represents Dhaka city as a whole and other urban areas of Bangladesh. Abortions and still-births in the previous year were found to be relatively few. Data may not be reliable and complete.

Finally, the study would have benefited from additional qualitative information on attitudes and behavioural aspects obtained through in-depth interviews and focus group discussions.

Results and Discussion

Background characteristics

In the survey, background information on the respondent families was gathered. Table 4 provides a profile of the study population with respect to couples' age, family size, parity, duration of marriage, educational attainment, religion, economic activities and gross monthly expenditure by residential location of the respondents.

Table 4. Background characteristics of the currently MWRA from the survey

Variable	Slum (n=1,322)	Non-slum (n=495)	Both areas (n=1,817)
Women's age			
<20	16	4	13
20-24	25	13	22
25-29	20	23	21
30-34	17	22	18
35-39	12	17	13
40-44	6	15	8
45-49	4	6	5
Mean	28	32	29
Mode	20	32	20

Table 4 (Contd.)

Table 4. (Contd.)

Variable	Slum (n=1,322)	Non-slum (n=495)	Both areas (n=1,817)
Spouse's age			
<20	1	1	1
20-24	6	2	5
25-29	18	7	15
30-34	16	14	16
35-39	21	26	22
40-44	14	19	16
45+	24	31	25
Mean	37	40	38
Mode	35	38	38
Number of living children			
1-2	53	60	56
3-4	34	33	33
5-6	11	5	9
7+	2	2	2
Mean	1.6	1.5	1.6
Parity			
0	4	4	4
1-2	43	54	46
3-4	32	33	32
5-6	14	7	12
7+	7	2	6
Mean	1.8	1.5	1.7
Duration of marriage			
≤2	8	10	8
3-5	13	9	12
6-10	21	17	20
11-15	19	20	19
16-20	16	17	17
21+	23	24	24
Mean	14	15	14
Women's education			
No education	66	13	51
1-4	16	5	13
5-9	16	25	19
10+	2	57	17
Median	0	2	0

Table 4 (Contd.)

Table 4. (Contd.)

Variable	Slum (n=1,322)	Non-slum (n=495)	Both areas (n=1,817)
Spouse's education			
No education	49	6	37
1-4	14	3	11
5-9	27	15	23
10+	11	76	29
Median	2	12	5
Religion			
Islam	98	96	97
Others	2	4	3
Women's income			
Yes	28	20	26
No	72	80	74
Spouse's income			
Yes	95	96	95
No	5	4	5
Monthly expenditure (Taka)			
<2000	8	1	6
2000-3000	26	3	20
3000-4000	33	8	26
4000-5000	17	6	14
5000+	16	82	34
Median	3,481	5,511	3,712

It appears from Table 4 that respondents in the slums are comparatively younger than the non-slum respondents. Sixteen percent of the slum respondents were adolescent mothers compared to four percent in the non-slum area. The median age of women in the sample is 29 years; the modal year is 20 years. Similarly, as wives reported, spouses of the respondents in the slum also have a younger age (25% below the age of 30 years), whereas this is 10 percent in the non-slum. The mean age for spouses is 38; the modal year is also 38.

Other than family sizes of 1-2 and 5-6, distributions of the slum and non-slum households by family size are similar. Nevertheless, 13 percent of the slum households have five or more members, which may be considered high, especially given the low levels of household's income and poor housing conditions. It is interesting to note that higher proportions (60%) of the non-slum households comprised family size of 1-2, compared to the slum households.

Slum respondents were noted to have higher parity, compared to the non-slum respondents. About one-fifth of the mothers in slums delivered five or more children, compared to less than one-tenth of the non-slum respondents.

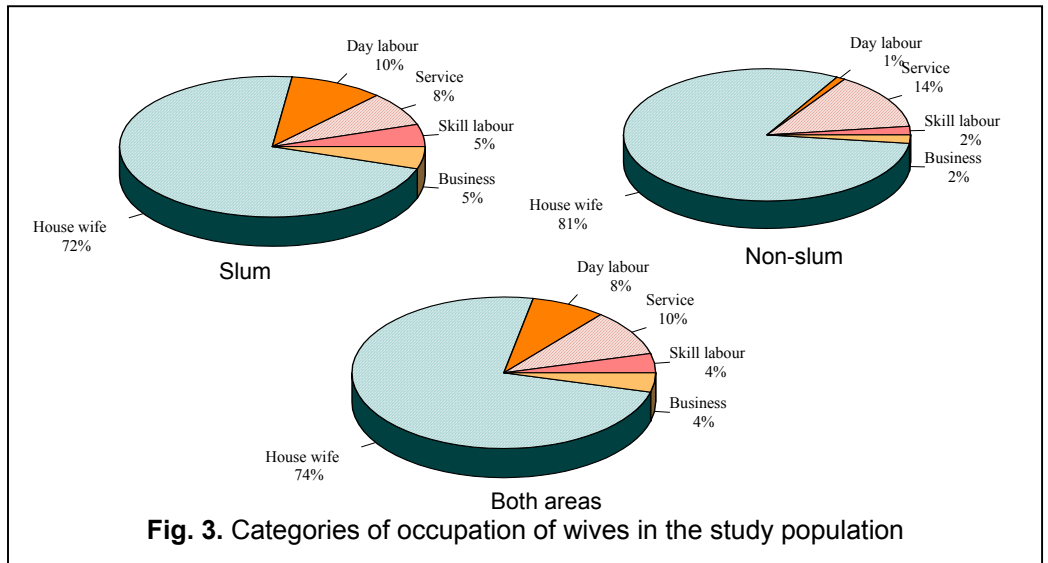
About 10 percent respondents had been in their present marriage status for less than two years and are, in fact, regarded as “newly-wed” group. As far as duration of marriage is concerned, slums and non-slums were comparable. Nevertheless, the modal number of years for duration of present marriage as reported is 10. The mean duration of marriage is 14 years.

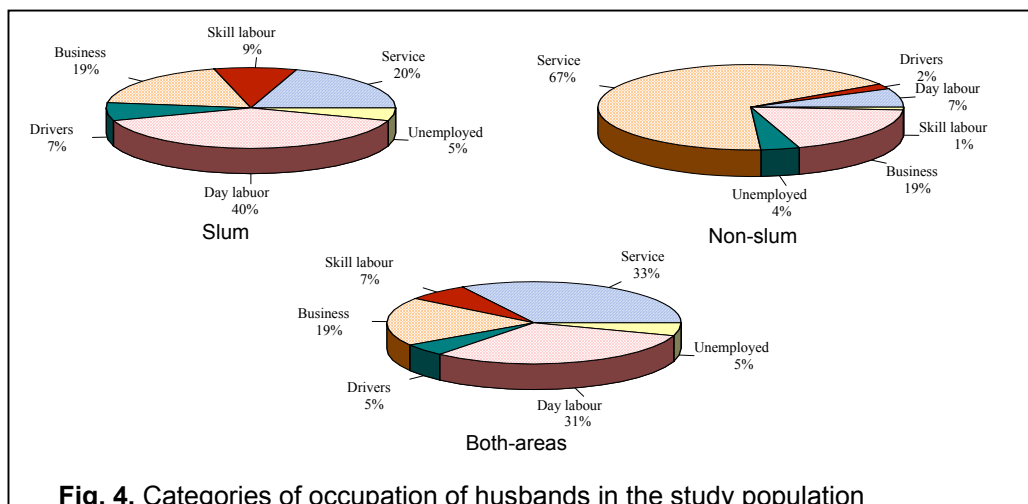
As evident from Table 4, non-slum men and women are more educated. A few slum-women have had ten years of schooling. Most women are uneducated (66% in the slums and 13% in the non-slum households).

According to the report of the wives, 75 percent of their spouses residing in the non-slum households received education beyond 10th grade. One-tenth of the slum spouses reported to have attained the same. On the whole, the median education of slum women was zero schooling; the level was being clouded with a large number of uneducated non-slum women. Their non-slum counterparts have median education of two years of schooling. However, 50 percent of the women of the total study area have received some formal education.

Although husbands are universally accepted as bread-earners, women in poor communities, like slums, are found to be involved in greater proportion in income-generating activities than their non-slum counterparts. In the study population, 28 percent of the slum women reported to be involved in income-generating activities.

The major occupation of the husbands of slum area is selling day labour (40%) while non-slum husbands are service-holders. Unemployment proportions are similar. The respondent wives of the study are economically more active as day labourer, skilled labor and business women. The various categories of occupation by residence are given in Fig. 3 and 4.





As an indirect assessment of family income, respondents were asked to provide a gross figure denoting monthly expenditure, irrespective of the source of earning. Pre-coded data on monthly expenditure revealed that about 40 percent in the slum spend less than Tk 3,000.00 a month, contrary to only four percent in the non-slum families. Eighty percent of the non-slum families spend more than Taka 5,000.00 compared to 46 percent of the slum families reported to have the same expenditure level. In any case, the median expenditure of the area was Tk. 3,712.00, which according to the current urban poverty index, is just above the subsistence level.

Fertility

During the survey, individual female respondent was asked whether she ever had a live-birth and how many of the children were living at the time of the interview. Accounts were taken on an individual basis of all the birth events that had occurred in the women's reproductive life before the survey. Essentially, the fertility data describe marital fertility of the study population.

The mean number of living children per family was 1.6. The modal number of sons was one, and the modal number of daughters was also one. There were 5,001 live-births reported by 1,817 women who participated in the survey. Out of the 4,963 living children at the time of the survey, sex ratio as well as male-female proportions in the slum and non-slum area were almost equal.

The total marital fertility rate of the population was 4.2 children per woman. Non-slum fertility rate was half that of the slum population (2.1 versus 4.8). Such a pattern of fertility rates by age of women leads us to believe that we are describing a population of couples using contraception effectively, non-slum in particular.

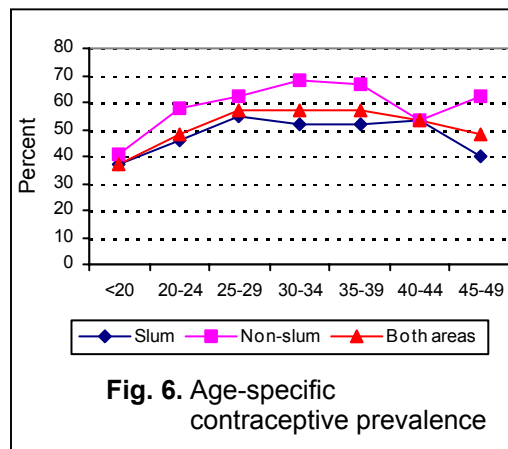
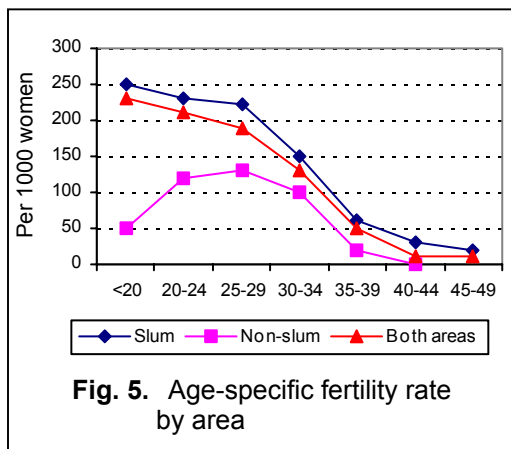
Analyzing the births to respondent women in the year preceding the survey, a classic decline of the fertility rate with increasing age of female was noted in Table 5. Fertility data were further analyzed in relation to contraceptive practices by age group. Almost two-thirds of all users were above 30 years of age. Barely, one-third of the current users fell into the category of high-risk women of less than 30 years of age. This pattern has been consistently observed for a long time. Contraceptive practice rates in the age groups of 15-19 and 20-24 years were much lower than other age groups except the age group of 40-44 years. However, fertility in the age group of 40-45 years was very low (Fig. 5 and 6). As a result, the total marital fertility rate was quite high in these age groups, compared to other age groups. Not only from the point of view of age at marriage, but also of the contraceptive practice, these groups are important for the intervention.

Table 5. Age-specific marital fertility rate and age-specific contraceptive prevalence rate of married women by residence

Age	Slum		Non-slum		Both areas	
	CPR	ASMFR*	CPR	ASMFR*	CPR	ASMFR*
<20	46	246	50	45	46	227
20-24	54	227	67	121	56	210
25-29	60	221	74	132	64	194
30-34	56	148	69	102	61	133
35-39	55	61	69	24	60	49
40-44	53	25	53	--	53	13
45-49	41	19	62	--	49	12
TMFR**	54	4.8**	66	2.1**	57	4.2**

* Per thousand women, ** Total marital fertility rate

Figure 5 and 6 present graphically the current comparative picture of the age-specific fertility and age-specific contraceptive prevalence by residence.



Mean family size desired by the respondents was studied in relation to educational level attained by the husbands. A pattern was observable among the groups. There was an obvious decline of desire with increasing education irrespective of residence (Table 6).

Table 6. Mean desired family size in relation to educational level of the husbands

Educational level of husband	Mean desired family size		
	Slum	Non-slum	Both areas
No education	3.0	3.1	3.0
1-4 year(s)	2.8	2.9	2.8
5-9 years	2.7	2.7	2.7
10+ years	2.6	2.5	2.5

As part of the past reproductive history, wives also reported occurrence of events such as abortions, stillbirth and induced miscarriages. However, there was no report of such events for the year prior to the survey. It should be noted here that although the interview schedule recorded the difficulties experienced in other studies in obtaining reliable information, no information could rule out the possibility of occurrence of such events.

Knowledge and use of birth control (with differential by background)

Reported knowledge on various contraceptive methods was analyzed, with use at any point of the women’s reproductive life. It is recognized that there may be both under- and over-reporting here. Data revealed that for both areas oral pill was a universally known contraceptive method followed by condom. It is seen that knowledge as well as practice of traditional methods (Rhythm and Azal) are much higher among the non-slum women, compared to the slum women (Table 7).

Not all the respondents who knew of one or more method(s) reported to be user of any methods as shown in Table 7. Of the 1,322 slum respondents who knew of one or more such method(s), only 637 i.e. 48 percent reported that they were users at the time of survey. In the non-slum households, 61 percent of the respondents reported to be users of any family planning methods during the survey. Interestingly, one of the major reasons for a higher contraceptive prevalence in the non-slum area relates to the much higher reported use of traditional methods (Fig. 7). Use of modern methods in the slums, however, was slightly higher than the non-slum households. On the other hand, ever-users of any methods or modern methods were much higher in the non-slum households. The method-specific ever-use ranged from 62 percent to two percent, oral pill being the most widely practiced family planning method by the women any time prior to the survey.

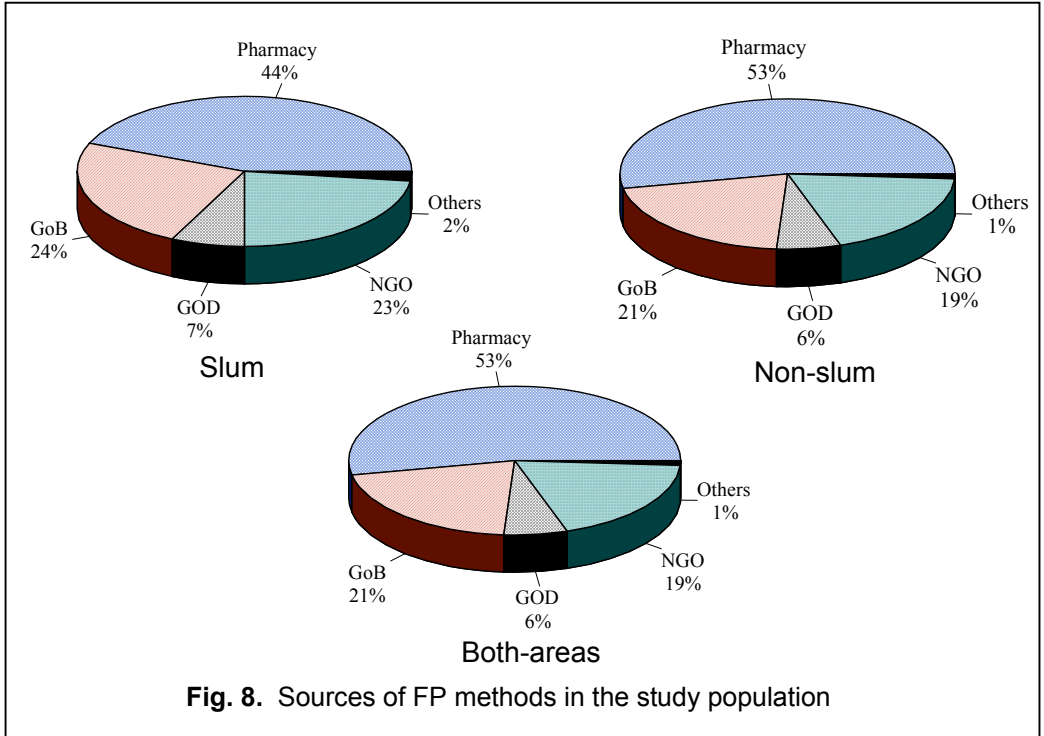
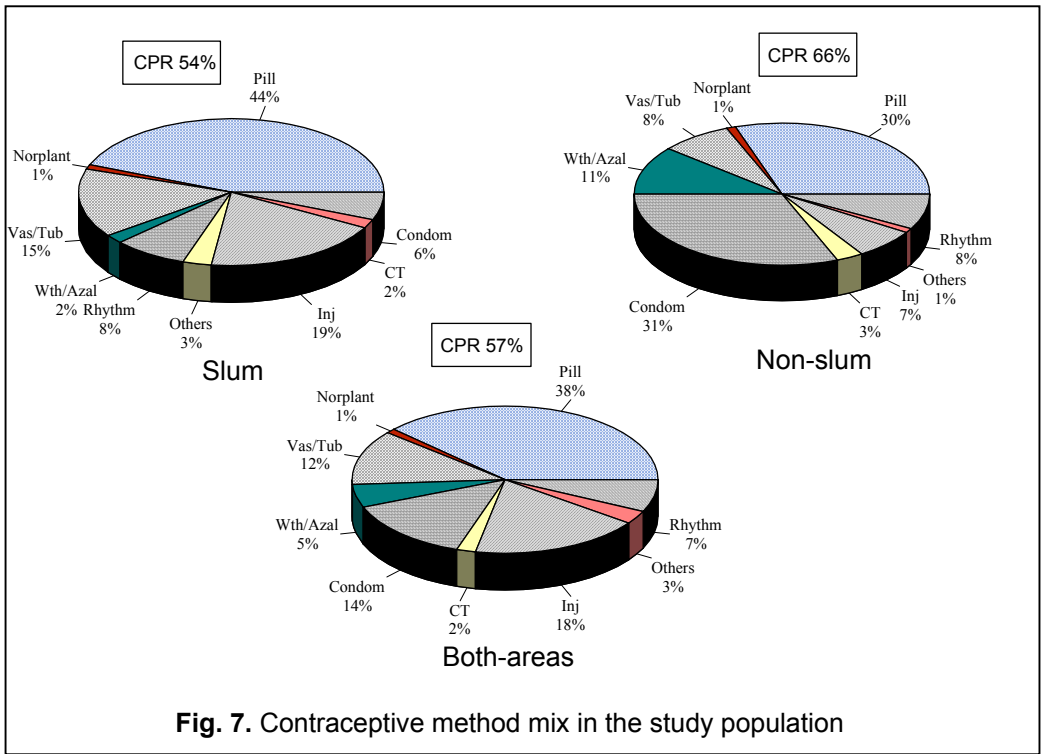
Table 7. Women's knowledge and use of family planning methods in the study population

Type of method	Knowledge and use of FP methods								
	Slum			Non-slum			Both areas		
	Know- ledge	Current use	Ever- use	Know- ledge	Current use	Ever- use	Know- ledge	Current use	Ever- use
Any method (n)	100 (1,322) *	48 (1,322)	76 (1,322) *	100 (495)*	61 (495)	95 (495)*	100 (1,817) *	52 (1,817)	81 (1,817) *
Any modern method	100	42	73	100	49	91	100	44	78
Temporary									
<i>Non-clinical</i>									
Condom	93	3	15	99	19	53	95	7	26
Pill	100	19	59	100	18	71	100	19	62
Rhythm Azal/ Withdrawal	51	3	21	75	5	37	57	4	26
<i>Clinical</i>									
IUD	34	3	17	62	7	42	41	4	27
Norplant	87	1	8	96	2	12	89	1	9
Injectables	45	-	1	38	1	2	43	1	2
Permanent									
Tubectomy	98	12	36	96	4	19	98	10	31
Vasectomy	96	6	6	98	5	5	96	5	6
	65	1	2	79	--	1	69	1	2

* Multiple responses were allowed

Among those who reported being user at the time of survey, the pill was the most frequently used method. Injectable contraceptive use was second in rank. Condom was the next frequently used method. There is striking difference in current use of condom and injectable methods between the slum and non-slum households. Condom is popular in the non-slum areas and injectables in the slums. The use of longer-acting methods (CT, Norplant, Tubectomy, Vasectomy) as a whole is very low in the study population. Nevertheless, the size of the groups who knew of methods but had never used any, suggest that knowledge alone is not adequate for adoption of family planning.

Respondents were asked to report on the source of the last contraceptive method. On the whole, pharmacy was reported to be the major source of contraceptives, followed by GoB and NGO sources. The Government Outdoor Dispensary at Sher-e-Bangla Nagar accounts for six percent of the supply. The comparative picture of the contraceptive method mix by residence and source of FP methods are shown in Fig. 7 and 8.



Contraceptive use by duration of marriage, method, and age groups

Duration of current marriage was related with the current user and never-users of contraceptive. Currently pregnant women and discontinuers were excluded from the analysis (Table 8). Looking at the data presented in Table 9, it is revealed that 50 percent of the newly-wed couples were non-users of FP method. There was an increase in the proportion of current use with increase in duration of marriage and the change was more prominent in the non-slum area than the slum area. There exists a considerable number of never users among women even after 3-5 years of their marital life was over. It is found that proportion of never-users was significantly less in the non-slum area.

Table 8. Percentage distribution of current FP use by duration of marriage

Duration of marriage in years	Slum			Non-slum			Both areas		
	Current user	Never-user	(n)	Current user	Never-user	(n)	Current user	Never-user	(n)
≤2	42	45	76	57	11	37	47	34	113
3-5	49	32	152	67	-	36	53	26	188
6-10	53	18	233	72	5	79	58	15	312
11+	56	20	720	65	4	306	59	15	1,026

Current contraceptive use was also analyzed in relation to age groups and methods. There are marked variations in the proportion of contraceptive users in the age groups below 25 years and above 35 years as shown in Table 9.

In the age group of 35 years and above, about 37 percent women used contraceptive in the non-slum households, compared to only 23 percent in the slum households. On the contrary, 36 percent of the users in the slums were below the age of 25 years compared to 15 percent in the non-slum area.

On the whole, oral pill was used by higher proportion of currently married women below 25 years, i.e. almost one out of two users. The use of injectables also appears to follow the similar trend. About 25 percent of the users who were 35 years or older were found to have undergone female sterilization. Review of the difference in use of methods by residence revealed that oral pill was popular among younger couples in the slums and among 25-35 years age group in the non-slums areas. While injectables use was found to be equally popular among all age groups in the slums, condom was more popular in the non-slum areas. Female sterilization was the most common method for older women, i.e. 35 years and above in the slums. On the other hand, traditional methods were used by higher proportion of women in all age groups in the non-slum households, compared to the slum households.

Table 9. Current contraceptive use by method, age group, and residence

Method use	Slum		
	Age group		
	≤24	25-34	35+
Any method	36	41	23
Modern method	90	88	81
Condom	8	5	5
Pill	54	40	20
Injectables	25	25	21
Sterilization	1	15	32
IUD	1	2	3
Norplant	1	1	--
Traditional method	10	12	19
Total %	100	100	100
(n)	(229)	(260)	(148)
Non-slum			
Any method	15	47	37
Modern method	87	83	72
Condom	36	26	35
Pill	36	42	12
Injectables	9	6	6
Sterilization	2	5	15
IUD	--	3	4
Norplant	4	1	--
Traditional method	23	17	28
Total %	100	100	100
(n)	(47)	(144)	(113)
Both areas			
Any method	29	43	28
Modern method	89	87	78
Condom	13	13	18
Pill	51	41	17
Injectables	22	19	15
Sterilization	1	11	25
IUD	1	2	3
Norplant	1	1	--
Traditional method	11	13	22
Total %	100	100	100
(n)	(276)	(404)	(261)

Attitude towards family planning

Respondents who reported not yet having used any method of family planning were asked about their intention toward use of such methods in the future. There were more respondents who intended to use FP method in future than those who refused to do so. (Table10).

Table 10. Distribution of future intention to use contraceptive methods

Intention	Slum (n=307) (%)	Non-slum (n=26) (%)	Both areas (n=333) (%)
Decided to use	59	50	58
Undecided	6	12	6
Unwilling to use	35	38	36

Attitude is also reflected in the expression regarding the preferred size of the family as shown in Table 11. Among the respondents indicating a desire, the mean family size desire was 2.19 for a slum-household while for a non-slum was 1.9 with an overall mean for the study population was calculated to be 2.11. Women (both slum and non-slum) most often preferred two or three children and somewhat more often two. A good many respondents, however, desired three or more in the slums.

Table 11. Preference regarding family size and number of children

Ideal family size preferred	Slum (n=1,322) (%)	Non-slum (n=495) (%)	Both areas (n=1,817) (%)
One	2	5	3
Two	76	84	78
Three	16	7	13
Four	06	4	06
Five	--	--	--
Six	--	--	--

Concerning the interval of the desire for the next child, there was no obvious difference among the slum and non-slum respondents. This reveals a clear-cut attitude to have children in future. Desire for additional children was also analyzed in relation to the size of family at the time the desire was expressed by the respondents (Table 12).

In the Table 12, women desiring additional children are mostly those having smaller families. There is a classical decline in the desire with the increase in the current family size. The decline was obvious among the families having more than two children in a slum household. Non-slum women showed change in attitude even earlier. Women who did not see the decision as their own are common in the slum households. It may be worth noting that on the whole, very few women referred the decision to the husbands.

Table 12. Preference regarding additional children by the number of living children (any sex)

No. of living children	Slum					Non-slum					Both areas				
	Desire for additional children				(n)	Desire for additional children				(n)	Desire for additional children				(n)
	Yes	Up to God	Husband knows	Do not desire		Yes	Up to God	Husband knows	Do not desire		Yes	Up to God	Husband knows	Do not desire	
None	85	4	1	10	(164)	95	5	--	-	(62)	88	4	1	7	(226)
1-2	53	3	1	43	(616)	31	3	1	65	(261)	46	3	1	50	(877)
3-5	5	2	--	93	(476)	3	--	--	97	(163)	5	1	--	94	(639)
6 or above	2	2	--	96	(66)	--	--	--	100	(9)	1	1	--	98	(75)
Total					(1,322)					(495)					(1,817)

Inter-relationship between reported knowledge and use and other factors

Knowledge and use of contraceptive methods might be associated with general knowledge and also reflect value and aspirations relating to education, place of residence, and the like. It must be recognized that use and knowledge here are reported ones and not necessarily accurately reported. An effort was made to study the survey population in the subgroups of those who already reported to be users and non-users of family planning methods. The groups were studied in the light of several factors, like size of the family desired, size of the present family, and educational attainment.

When ever-use and current-use of family planning method are further studied in relation to number of living children, CPR (as expected) almost double among families who had children compared to those who had none living. At the time of the survey, CPR was about 68 percent among those who have one or more child(ren). The corresponding figure was much lower (31%) in women who had no children. It is also seen that CPR rises with age. However, no consistent pattern was observed in women who had no children. In the slums there was a drop in CPR within the 20-24 years age group, which probably signifies couples' desire to have more child(ren) and reach the intended family size. Considerably low CPR in the lower age group reflects newly-wed couples' desire to have children (Table 34a and 34b, Annexure B).

When the use of different types of FP methods is studied according to the number of living children, a trend is observed. With increase in family size, women tend to select clinical methods. Traditional and non-clinical methods were the preferred ones by women with a family size of two or less (Table 13).

Table 13. FP method choice by the number of living children in the study population

Current method choice	Number of living children per family by residence											
	Slum				Non-slum				Both areas			
	None	1-2	3-5	6 or above	None	1-2	3-5	6 or above	None	1-2	3-5	6 or above
Clinical	1	17	29	20	--	9	20	22	1	15	26	20
Non-clinical	10	27	22	14	23	44	35	--	14	33	25	12
Traditional	89	56	49	66	77	47	45	78	85	52	49	68
Total % (n)	100 (164)	100 (616)	100 (476)	100 (66)	100 (62)	100 (261)	100 (163)	100 (9)	100 (226)	100 (877)	100 (639)	100 (75)

Obstacles in the use of current methods were mainly reported by pill, injectable and sterilization users. Twenty percent of the pill, 37 percent of injectable and 27 percent of the sterilization contraceptors reported of obstacles, such as perceived side-effects, opposition from husband and/or any other complications. Table 14 presents the distribution of types of obstacles mentioned by these contraceptors who were using pill, injectables or sterilization at the time of the survey.

Table 14. Obstacles encountered by the current users of modern methods by residence

Method	Obstacles encountered by the respondents														
	Slum*					Non-slum*					Both areas*				
	Side effect	Husband oppositions	Complications	Others	(n)	Side effect	Husband oppositions	Complications	Others	(n)	Side effect	Husband oppositions	Complications	Others	(n)
Pill	52	--	80	--	54	77	--	59	--	17	58	--	75	--	71
Injectables	90	--	30	2	61	75	--	25	--	4	89	--	29	2	65
Sterilization	63	4	63	13	24	33	--	67	--	3	59	4	63	11	27

* Multiple responses were possible. Denominator of each method refers to Table 35, Annexure C

The majority of the respondents reported about side-effects and complications as prime concerns in the use of the current method. Among the methods, pill accounts for most of the reported side-effects and complications. Slum and non-slum difference is not very large. Next to the pill, method causing side-effects was reported to be injectable contraceptives. Husband's opposition to the current use of condom was reported, more by the slum respondents. Interestingly, religion or low-education level and related misconceptions did not pose to be any obstructing factor.

The reasons for dropout from current use were also studied. The primary reason for discontinuation of use of any family planning methods was asked from the respondents who reported to have dropped out from using a family planning method (Table 15). The most frequently cited reason for discontinuation was desire for additional children (32% in the slums compared to 40% in the non-slum areas).

Table 15. Reasons for discontinuation of the last FP methods use by residence

Reason for discontinuation	Slum						Non-Slum					Both areas					
	Con	Pill	Inj	IUD	Nor	(%)	Con	Pill	Inj	IUD	(%)	Con	Pill	Inj	IUD	Nor	(%)
Desire for child	28	36	21	--	10	32	45	30	--	--	40	39	34	18	--	100	34
Husband disapproved	33	4	4	--	--	6	11	--	--	--	4	19	3	4	--	--	5
Health concern	11	20	22	--	--	19		35	50	--	19	4	23	25	--	--	19
Side-effect	--	29	47	--	--	29	3	23	38	--	13	2	28	46	--	--	25
Infrequent sex	11	7	6	50	--	8	31	5	25	--	18	25	7	8	50	--	10
No access	--	1	1	--	--	1	--	--	--	--	--	--	1	1	--	--	1
Menopause	--	1	--	--	--	1	3		--	--	1	2	1	--	--	--	1
Inconvenient to use	--	1	3	--	--	1	--	3	--	--	1	--	1	3	--	--	1
Method failure	22	13	12	--	--	14	3	15	--	--	8	9	13	11	--	--	12
Others	-	4	6	50	--	5	3	2	--	--	3	2	4	5	50	--	4
Total (n)	18	160	68	2	1	266	35	40	8	--	101	53	200	76	2	1	367

Another frequently cited reason was infrequent sex, i.e. not at risk. On the whole, 10 percent respondents reported infrequent sex, more so in the non-slum area (18%). Perceived side-effect of contraceptives was one of the most important reasons (29% in the slums and 13% in the non-slum area) for leaving contraceptive methods use. Side-effect of injectables was more prominent than the oral pill. Health concern as a barrier to use was more expressed by the non-slum respondents, especially for injectable contraceptives (50%). The respondents also reported husband's opposition

to method use. Husbands were found to disapprove condom use more than other methods, more so in the slum than the non-slum areas. Method failure (presumably due to inappropriate use) was another reason mentioned by a considerable number of respondents. The slum respondents reported more method failure for condoms, while the non-slum respondents for pills.

Unmet need for family planning

Unmet need for family planning was calculated for the study population. This is considered to be an important programmatic concern that needs urgent attention to stabilize population growth. In the study, unmet need was considered for those who were not pregnant at the time of the survey, currently not using any contraceptive method, and either altogether not desiring any more children or wanting to space the next child for two or more years from the time of survey. Table 16 shows the relative magnitude of unmet need in the study population. Considerable unmet need for contraception exists in the study population. There is an unmet need of one-fifth among those who intend to limit childbirth and about one-tenth in the case of women who wish to space births.

Table 16. Unmet need for family planning in the study population by residence

Unmet need	Slum (n=1,322) (%)	Non-slum (n=495) (%)	Both areas (n=1,817) (%)
Want child after 2 yrs	8	4	7
Do not want child	22	19	21

Prevalence of pregnancy in the study population

All the respondents were asked to state if they were pregnant at the time of survey. Data suggest that the point prevalence of pregnancy was about 10 percent at the time of survey. It may be noted that there is room for under-reporting tendency in the case of early pregnancy, and shyness may also contribute to the under-reporting, etc. Higher proportion of women in the childbearing age groups in the slums was found to be pregnant (11% in the slums and 7% in the non-slums areas). Table 17 represents the classical pattern of age distribution of pregnancy with decreasing prevalence with increased age. About one-fifth of the pregnancies occurred in the adolescent mothers. However, the proportion of currently pregnant women in the younger age groups, i.e. those below the age of 25 years is slightly higher among the slum mothers.

Table 17. Prevalence of pregnancy among married women by residence and age

Age group	Slum		Non-slum		Both areas	
	%	n	%	n	%	n
<20	19	(211)	18	(22)	19	(233)
20-24	15	(330)	13	(66)	15	(394)
25-29	4	(262)	16	(114)	12	(374)
30-34	6	(223)	3	(108)	5	(331)
35-39	6	(164)	2	(83)	5	(247)
40-44	1	(80)	--	(73)	1	(153)
45-49	2	(52)	--	(29)	1	(81)
Total	11	(1,322)	7	(495)	10	(1,813)

Use of antenatal care use during the last pregnancy

Respondents who were pregnant in the year preceding the survey were asked about any visit to any person or place for antenatal and postnatal care. In the study, use pattern of antenatal care was analyzed by area, parity, education, and the last pregnancy. Among women who were pregnant last year, the practice of obtaining antenatal care was found to be very low in the study population. Proportions of antenatal care seekers are equal by residence. Among those who sought services, the mean number of visits made by the non-slum pregnant mothers was 50 percent that of the slum mothers. (2.1 versus 3.18). The data did not provide any discernable relationship of age and education with ANC use.

Table 18. Distribution of ANC use during the last pregnancy by number of living children

Number of living children	Slum		Non-slum		Both areas	
	%	n	%	n	%	n
0	4	164	3	62	4	226
1	12	315	9	101	11	416
2	9	301	7	160	8	461
3	5	239	8	99	6	338
4	8	150	7	45	8	195
5+	5	153	9	28	5	181
Total	7	1,322	7	495	7	1,817

Respondents who reported to have received antenatal care were asked about the type of service provider and nature of care. Doctors were the predominant service providers for the non-slum population while nurses/ paramedics were the main service providers for the slum mothers. Use of unqualified service providers was much higher among the slum mothers (Table 19).

Table 19. Distribution of type of ANC provider

Type of provider	Slum (n=95)* (%)	Non-slum (n=33)* (%)	Both areas (n=128)* (%)
Doctors	45	82	55
Nurses/Paramedics	39	18	34
TTBA/Dai	--	--	--
Others	19	6	16

* Multiple responses were allowed

The type of care received by the women who went for antenatal care was also investigated. Respondents mentioned the type of services offered to them irrespective of the providers involved in the dispensing of antenatal care. There was a significant difference in the reported type of care received during the last antenatal care between the slum and the non-slum areas. At least 70 percent of non-slum mothers received all the essential components of antenatal care while 30 percent of the slum mothers reported to have received services as mentioned in Table 20.

Table 20. Type of care offered during ANC

Type of care	Slum (n=95)* (%)	Non-slum (n=33)* (%)	Both areas (n=128)* (%)
Check for anaemia	36	52	40
Check for Oedema	29	64	38
Measuring weight	63	82	68
Measuring BP	66	82	70
Abdominal examination	73	94	78
Advice regarding food	60	70	63
Advice regarding breast care	39	55	43
Safe delivery advice	46	67	52
Advice on complications	46	64	51
Urine test	32	67	41
Blood test	29	67	39

* Multiple responses were allowed

Use of postnatal care was found to be similar among the non-slum mothers and was much higher compared to the slum mothers. The overall use rate revealed that one-third of the respondents obtained some form of postnatal care services.

Analysis was also done for the use of specific facilities to obtain ANC and PNC services. Data indicate that 44 percent of the respondents obtained PNC services at home. The practice was more prevalent in the slum households. It is also seen that half of the respondents who used ANC obtained it from GoB facilities. The Sher-e-Bangla Nagar GOD is a major source of antenatal care for slum women. Use of NGO facilities for antenatal care was twice common for slum mothers. On the other hand, the non-slum mothers were using private sector facilities for both ANC and PNC (Table 21).

Table 21. Sources of ANC and PNC obtained by slum and non-slum residence

Source of ANC	Slum		Non-slum		Both areas	
	ANC (n=95)* (%)	PNC (n=62)* (%)	ANC (n=33)* (%)	PNC (n=23)* (%)	ANC (n=128)* (%)	PNC (n=85)* (%)
At home	--	48	--	30	--	44
GOD	26	--	3	--	20	--
GoB	33	21	21	13	30	19
NGO	24	--	12	9	21	3
Private	13	5	67	48	27	16
Others	8	27	--	--	6	20

* Multiple responses were allowed

Childhood immunization

Coverage by antigen, slum, non-slum household status, and timing of the first dose

Immunization against all vaccine-preventable diseases among children aged between 12 and 23 months in the study population was studied. Data for immunization (dates and doses) were gathered from the EPI card and history in cases where card was not available. The analysis of the coverage data shows that there exists a significant intra-urban differential in the use of immunization for individual antigen as well as complete doses in the targeted children. At the aggregate level, 61 percent of the children aged 12-23 months had completed their entire doses by the day of the household survey, and 59 percent could complete the doses within their first birthday. The complete coverage in the slum household is 57 percent. Among them, 54 percent were found to complete the entire doses by the first year of life. Access to immunization services (as measured by BCG coverage) was 83 percent, and it was respectively 80 percent and 95 percent for the slum and non-slum households (Table 22).

Table 22. Child immunization coverage among 12-23 months old children

Type of coverage	Slum (n=183) (%)	Non-slum (n=38) (%)	Both areas (n=221) (%)
BCG (DOI)	80	95	83
BCG (By 1 yr)	68	87	71
DPT3 (DOI)	63	95	69
DPT3 (By 1 yr)	41	63	45
Measles (DOI)	55	87	61
Measles (By 1 yr)	54	81	59
OPV4 (DOI)	57	84	61
OPV4 (By 1 yr)	54	81	59
Fully immunized			
DOI	57	84	61
By 1 yr	54	81	59

DOI: Date of Interview

The immunization coverage data were further analyzed by the precise timing of obtaining BCG vaccination. It was found that, among those who could finish BCG dose by the 3rd month of a child's life, 69 percent could complete full doses by the first birthday. On the contrary, 44 percent children of the other group were immunized for BCG after the 3rd month (Table 23).

Table 23. Comparison of child immunization coverage by timing of BCG immunization

BCG dose interval from birth	Slum			Non-slum			Both areas		
	Children completing all doses by 1 yr of life (%)	Children completing all doses by DOI (%)	Sub-total (n)	Children completing all doses by 1 yr of life (%)	Children completing all doses by DOI (%)	Sub-Total (n)	Children completing all doses by 1 yr of life (%)	Children completing all doses by DOI (%)	Sub-Total (n)
≤3 months	65	4	(114)	82	6	(33)	69	4	(147)
>3 months	39	12	(33)	33	33	(3)	44	8	(6)

Immunization data revealed children's dropout from the programme in their course to completing the doses of immunization. Dropout rates were calculated between two doses with varied interval in the routine immunization schedule. The overall dropout rate from BCG to measles was highest (27%), followed by DPT1 to DPT3 (16%), and DPT3 to measles (12%). Children of the slum households had, however, four times greater risk of overall dropout, i.e from BCG measles.

Table 24. Comparison of immunization dropout rate by slum and non-slum residence

Dropout measure	Slum (%)	Non-slum (%)	Both-areas (%)
BCG – Measles (n=183)	31.3 (n=147)	8.3 (n=36)	27.0
DPT1 – DPT3 (n=180)	19.0 (n=144)	0 (n=36)	16.0
DPT3 – Measles (n=152)	13.0 (n=116)	8.0 (n=36)	12.0

Retention of immunization card was analyzed with certain selected factors that presumably influence the particular behaviour of the study population. Only 38 percent of the respondents with children of 12-23 months of age could produce the immunization card during the interview. Retention was slightly higher in the non-slum households (Table 25).

Table 25. Retention of immunization card by slum and non-slum residence

Card retention	Slum (n=147) (%)	Non-slum (n=36) (%)	Both areas (n=183) (%)
Yes	36	47	38
No	64	53	62

At the aggregate level education seems to influence retention of cards. A clear relationship was observed with the level of education. An increase in retention of immunization cards was observed among the educated respondents both in the non-slum and slum households. However, no sex discrimination in card retention was found in the analysis.

The sources of immunization services for the study population were also studied by residence. The study population was found to obtain this service from various governmental and non-governmental facilities. Table 26 presents the types of organizations/facilities from where the respondents had received immunization services for children aged 12-23 months. The Sher-e-Bangla Nagar Government Outdoor Dispensary (GOD), located near the study area was included in the analysis. Almost half of the slum population received services from the NGO facilities, another half from the government facilities including the GOD (Table 26).

Table 26. Sources of immunization services by the slum and non-slum residence

Source	Status of immunization					
	Slum		Non-slum		Both areas	
	Any dose (n=52) (%)	Fully immunized (n=95) (%)	Any dose (n=5) (%)	Fully immunized (n=31) (%)	Any dose (n=57) (%)	Fully immunized (n=126) (%)
GOD	15	28	40	13	17	25
GoB	29	26	20	65	28	26
NGO	42	43	40	22	42	38
Others	14	3	-	-	13	1

Maternal immunization**Coverage by number of doses, target group, and slum/non-slum status**

Married women, ever-pregnant in the study area, were asked about obtaining tetanus toxoid immunization from any sources prior to the survey. Fifty percent of the married women of reproductive age with a child aged less than one year reported that they had obtained at least two doses of tetanus toxoid (TT2) during the last pregnancy. Women who had ever been pregnant and reported to have received at least two doses of tetanus immunization were found to be 68 percent. The slum/non-slum difference in maternal TT2 immunization coverage was greater (38%) among women with child less than one year, compared to ever-pregnant women (Table 27).

Access to TT immunization services, as defined by the receipt of at least one dose of TT immunization, was 72 percent in ever-pregnant women, compared to 67 percent in mothers with a child less than one year of age. Twenty-five percent of the women in the study population belonging to the ever-pregnant group mentioned to have received 5 doses or more of TT.

Table 27. Distribution of TT coverage by slum and non-slum residence

Number of TT doses given	Among married women ever-pregnant (n=1,707) (%)			Among married women with child less than 1 year (n=218) (%)		
	Slum	Non-slum	Both areas	Slum	Non-slum	Both areas
None	32	16	28	39	0	34
1 or more	75	76	72	61	100	67
2 or more	70	74	68	45	83	50
5 or more	22	23	25	-	-	-

The dropout rate among the women receiving TT immunization services was also studied. The overall dropout rate from receiving the first dose of TT to receiving the 2nd dose was 4-17 percent. However, the dropout rate in the case of women having a child aged less than one year was considerably higher. The dropout rate from TT1 to TT5 was 47 percent among ever-pregnant women.

Vitamin A supplementation to children aged 12-59 months

Vitamin A deficiency is one of the major nutritional deficiencies in Bangladeshi children. There is now enough scientific evidence that child with vitamin A deficiency, including those with mild vitamin A deficiency, are at increased risk of death from infectious diseases, and that the supplementation to deficient children with high-dose vitamin A capsules can reduce mortality by 33 percent or more [16].

The current survey revealed the status of government effort to reach and supplement all children aged 12-59 months with vitamin A capsule in the study population. The findings of the present study show that high coverage has been achieved among children of 1 to 5 years irrespective of residence of the children (Table 28).

However, the study identified a significant differential in the coverage of vitamin A by age in the study population. Eight-two percent of the children aged less than 3 years had received vitamin A compared to 79 percent among the children aged more than 3 years. In fact, the current survey was conducted after the recent nationwide drive to distribute high- potency vitamin A capsule to the children aged 12-59 months.

Table 28. Vitamin A coverage in the last 6 months among children of 12-59 months by slum and non-slum residence

Received	Slum (n=599) (%)	Non-slum (n=146) (%)	Both areas (n=745) (%)
Yes	88	92	89
No	12	8	11

Morbidity of children aged less than five years in the last two weeks prior to the survey

The respondents were asked to recall the occurrence of cough among the children aged less than five years within two weeks prior to the survey. According to the report of the respondent mothers, 30 percent children aged less than 5 years suffered from an episode of cough in the last two weeks. Slum/non-slum differential was insignificant in the prevalence of cough.

Acute respiratory tract infections are the common ailment encountered by around five million children in Bangladesh. In the study population, children of less than five years of age who reported to have cough and difficult breathing in the last two weeks were found to be 52 percent. Prevalence in the slum households was higher than in the non-slum households (Table 29).

Table 29. Prevalence of cough with difficult breathing in the last two weeks prior to the survey among slum and non-slum children aged less than 5 years

Prevalence	Slum		Non-slum		Both areas	
	Cough (n=705) (%)	Cough with difficult breathing (n=211) (%)	Cough (n=170) (%)	Cough with difficult breathing (n=49) (%)	Cough (n=875) (%)	Cough with difficult breathing (n=260) (%)
Yes	30	54	28	43	30	52
No	70	46	72	57	70	48

Reported response of the community to the childhood illness discussed above was explored. The findings revealed that 84 percent of the mothers sought treatment during the episode of cough and/or cough associated with breathing problem. It is much higher in the non-slum than the slum population.

Table 30. Mothers of children aged less than 5 years from slum and non-slum residence who sought treatment for cough and/or cough with breathing problem during the last two weeks

Treatment seeking	Slum (n=113) (%)	Non-slum (n=21) (%)	Both areas (n=134) (%)
Yes	82	95	84
No	18	5	16

A major cause of recurrent childhood morbidity in Bangladesh is diarrhoea. The study respondents reported that 19 percent of the children aged less than five years suffered from an attack of loose motion in the last two weeks. Prevalence was higher in the slum households. The use of oral rehydration therapy in response to diarrhoeal episodes was 70 percent. Interestingly the use in the slums was much higher than the non-slum households.

Table 31. Prevalence of diarrhoea and use of ORT during the last two weeks among children aged less than 5 years by slum and non-slum residence

Diarrhoeal episode	Slum		Non-slum		Both areas	
	Last 2 weeks (n=705) (%)	ORT given (n=140) (%)	Last 2 weeks (n=170) (%)	ORT given (n=25) (%)	Last 2 weeks (n=875) (%)	ORT given (n=165) (%)
Yes	20	71	15	64	19	70
No	80	29	85	36	81	30

Healthcare-seeking behaviour

Healthcare-seeking behaviour of the study population was explored as shown in Table 32 and 33. Respondents were asked to provide information regarding recent visit to the healthcare facilities, including reasons for visit and mode of transport used. Almost all respondents reported at least one visit to GoB/NGO/private healthcare facilities. Data suggest that the use of government facilities (GOD, GoB) is widespread, followed by NGO facilities. Proportional use of any type facilities for the listed reasons is comparable between the slum and the non-slum populations. The purposes of visit to healthcare facilities were dominated by reasons like childcare, followed by general health problems, and family planning. Most of the respondents reported to travel to the facility on foot, which indicates to the use of nearby facilities. So distance of facilities could be a key determinant in the use of healthcare services.

Table 32. Slum and non-slum MWRA who ever visited any health facilities

Health facility	Slum (n=1,322)* (%)	Non-slum (n=495)* (%)	Both areas (n=1,817)* (%)
GOD	34	18	30
GoB	80	92	83
NGO	53	43	50
Private	14	62	27
Shop/Pharmacy	77	71	76
Others	11	7	10

* Multiple responses were allowed

Table 33. Distribution of purpose of visit (first reason) to different health facilities by slum and non-slum MWRA

Purpose of visit	Place of visit																	
	Slum						Non-slum						Both areas					
	GOD	GoB	NGO	Prv	Shop/phar	Others	GOD	GoB	NGO	Prv	Shop/phar	Others	GOD	GoB	NGO	Prv	Shop/phar	Others
ANC	5	5	4	4	-	3	3	6	5	6	1	5	5	5	4	5	1	4
PNC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Delivery care	-	2	1	1	-	-	-	4	1	9	-	-	3	1	6	-	-	
Obstetric	-	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-	-	
Family planning	12	15	17	3	2	7	14	9	12	1	-	3	13	14	16	2	1	6
Side effect management	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EPI	19	2	16	2	1	68	21	2	14	2	1	43	20	2	16	2	1	63
Child care	36	39	35	23	47	9	27	25	22	15	36	13	35	36	33	19	44	10
General health	19	16	13	32	42	5	24	20	15	32	52	19	20	18	14	31	44	8
Health education	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accompanied	5	12	8	16	5	5	6	17	16	22	7	11	5	14	10	20	6	6
See relatives	-	3	1	8	1	-	3	12	8	11	1	-	1	6	3	10	1	-
Others	4	6	3	-	2	3	1	5	7	1	2	6	1	2	3	5	2	3
Total %	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
(n)	(454)	(1,052)	(701)	(180)	(1,022)	(149)	(91)	(455)	(214)	(307)	(352)	(37)	(545)	(1,507)	(915)	(487)	(1,374)	(186)

Conclusions

The findings from the baseline household survey conducted during April-June 1999 in Sher-e-Bangla Nagar area in the Dhaka city reveal certain intra-urban differentials in fertility, contraceptive use, unmet need for family planning, and childhood immunization.

The survey also showed low use of antenatal and postnatal care services, higher prevalence of diarrhoeal diseases, and respiratory illness. On the other hand, there is reported wide coverage of vitamin A, widespread use of ORT, and treatment following episodes of childhood diarrhoea and respiratory illnesses.

Although this analysis of health and demographic characteristics cannot be regarded as something very definitive in terms of slum/non-slum differentials, the findings are quite indicative of the necessity for special interventions focused toward urban poor, more precisely slum sub-populations. Any effective service delivery strategy aimed at provision of essential health and family planning services in the urban areas will need to address the above critical issues.

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The Essential Services Package (ESP)

Within the overall context of the Health and Population Sector Strategy, based on the interventions identified by the World Development Report 1993, the elements of the Essential Services Package (ESP) are summarized and grouped into the following five areas:

i. Reproductive Healthcare

- safe motherhood services (antenatal care, safe delivery and obstetric first-aid and referral services, postnatal care);
- family planning services to increase distribution of pills and condoms, emphasizing clinical contraception, with particular attention to low-performing areas and under-served groups;
- prevention and control of RTIs/STDs/AIDS, specially in behavioural change communication and condom promotion;
- maternal nutrition;
- adolescent care, emphasizing behavioural change messages on proper nutrition and hygienic practices, information regarding puberty, safer sexual behaviour, and avoidance of health risks, including STDs/HIV/AIDS;
- services that address problems of infertility, particularly if caused by RTIs and STDs, such as sexually transmitted chlamydia infection.

ii. Child Healthcare

- provision of basic preventive and curative care for infants and children for ARI, CDD, vaccine-preventable diseases, and vitamin A;
- Integrated Management of Childhood Illness (IMCI) as a child survival strategy directed at improved prevention and case management of measles, malaria, malnutrition, diarrhoea, and bacterial pneumonia;
- services to address malnutrition, especially chronic energy deficiency, protein-energy malnutrition, low birth weight, and micronutrient deficiency;
- school health services, such as first-aid care, and periodic health check-ups of school children.

iii. Communicable Disease Control

- services that prevent and manage infectious diseases that have severe health impact (TB, leprosy, malaria, *kala-azar*, and other emerging and re-emerging diseases).

iv. Limited Curative Care

- care of common illnesses and injuries (basic first-aid, treatment of medical emergencies, pain relief and advice, specially for those in poverty).

v. Behaviour Change Communication

- provision of information, education and communication (IEC) services to support access to and use of the ESP and to promote healthy behaviour change.

Annexure B

Table 34a. Percentage of ever-user and current user by number of living children and age group

Age Group	Number of living children								
	Slum			Non-slum			Both Areas		
	Ever-user*	Current user	Sub-total	Ever-user*	Current user	Sub-total	Ever-user*	Current user	Sub-total
<20	18	30	82	43	50	14	22	33	96
20-24	23	17	44	44	55	27	31	33	71
25-29	25	30	12	56	42	18	43	36	30
30-34	--	33	7	50	--	2	11	29	9
35-39	17	17	6	100	--	1	29	14	7
40-44	17	--	6	--	--	--	17	--	6
45-49	14	29	7	--	--	--	14	29	7

Table 34b. Percentage of ever-user and current user by number of living children and age group

Age Group	One or more living Children								
	Slum			Non-slum			Both Areas		
	Ever-user*	Current user	Sub-total	Ever-user*	Current user	Sub - total	Ever-user*	Current user	Sub-total
<20	28	52	129	50	50	8	29	52	137
20-24	32	58	286	28	74	39	31	60	325
25-29	30	62	250	28	80	96	29	67	346
30-34	33	57	216	28	70	106	31	61	322
35-39	32	57	158	27	70	82	30	61	240
40-44	20	58	74	44	53	73	32	56	147
45-49	18	43	45	31	62	29	23	51	74

* Those who are not currently using any method, i.e past users

Annexure C

Table 35. Percentage of currently MWRA using contraceptive by method and age group

Method use	Slum							Total (n)
	<20	20-24	25-29	30-34	35-39	40-44	44-49	
Condom	6	9	6	4	6	5	--	40
Pill	40	62	45	34	26	14	5	257
Injectables	32	21	27	24	19	21	29	154
Sterilization	--	2	10	19	28	33	48	88
IUD	4	1	1	3	1	5	5	12
Norplant	3	--	--	2	--	--	--	5
Modern methods	85	95	89	86	80	78	87	553
Traditional methods	15	5	11	14	20	22	13	84
Total % (n)	100 (78)	100 (151)	100 (143)	100 (117)	100 (85)	100 (42)	100 (21)	100 (637)
Non-slum								
Condom	33	37	24	29	36	31	44	95
Pill	33	36	45	38	9	23	--	91
Injectables	22	5	10	3	7	5	6	20
Sterilization	--	3	3	7	9	20	22	25
IUD	--	--	1	4	9	--	--	9
Norplant	--	5	--	1	--	--	--	3
Modern methods	88	86	83	82	70	79	72	243
Traditional methods	22	14	17	18	30	21	28	61
Total % (n)	100 (9)	100 (38)	100 (71)	100 (73)	100 (56)	100 (39)	100 (18)	100 (304)
Both areas								
Condom	9	15	12	14	18	17	21	135
Pill	39	57	45	36	19	18	3	348
Injectables	31	18	21	16	14	14	18	174
Sterilization	--	2	8	14	21	27	36	113
IUD	3	1	1	3	4	3	3	21
Norplant	2	1	--	2	--	--	--	8
Modern methods	84	94	87	85	76	79	81	799
Traditional methods	16	6	13	15	24	21	19	142
Total % (n)	100 (87)	100 (189)	100 (214)	100 (190)	100 (141)	100 (81)	100 (39)	100 (941)