Family Planning
Unmet Need in Bangladesh

Shaping of a client-oriented strategy

With the best compliments to
Ms. Margaret Neuse
Team leader, PHT, USAID/Dhaka

Abul Barkat
Nov 18, 1997

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Preface

This book originated during an analysis of unmet need for family planning. That analysis was based on the Bangladesh Demographic and Health Surveys, the population censuses, and a variety of research studies, and it provided results both academically interesting and programmatically useful. It showed the desirability of transforming the national program from its target orientation to an unmet need approach, which was also consistent with the Program of Action from the International Conference on Population and Development of 1994. That work, funded by the Futures Group International, has continued since.

A particular discovery was the presence of many women who said they intended to use contraception even though they were classified in the surveys as not having an unmet need. That pointed to a new market, even a new "need" for the national program and the private sector to address. Remarkably, these intenders actually outnumbered women in the original unmet need group who said they would not use a method. The full group of all intenders, those with and those without unmet need, exceeded the original group of unmet need women. This discovery gave a new measure of potential demand, and let plans for the national program be client-based rather than researcher-biased. While unmet need itself was a composite from various questions in the survey, "intention to use" came directly from the woman's own statement.

A happy coincidence was that this research came just as the Government (in 1996) was developing its long-term strategic directions for the 1995-2005 national program. Consequently the client orientation and the unmet need perspective were incorporated into that plan. In addition, the "segmentation" analysis contained in this book, produced from special computer software, pointed to those portions of the population that were both sizeable and high priority for program attention.

The analysis presented in this book, while pertaining to one country, is tailored to invite replication in other countries. We hope that the integration of scientific and applied perspectives, the intensive use of empirical information together with the new unmet need and intenders approach, and the segmentation analysis, will prove to be of high utility for both academic work and policy guidance.

A Barkat SR Howlader B Khuda JA Ross ML Bose

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Abbreviations

BAPSA	Bangladesh Association for Prevention of Septic Abortion
BBS	Bangladesh Bureau of Statistics
BCG	Bacillus Calmette Guarin
BDHS	Bangladesh Demographic and Health Survey
BFS	Bangladesh Fertility Survey
BHDS	Bangladesh Health and Demographic Survey
BIDS	Bangladesh Institute of Development Studies
BRAC	Bangladesh Rural Advancement Committee
CA	Cooperating Agency
CBR	Crude Birth Rate
CEB	Children Ever Born
CHAID	Chi-squared Automatic Interaction Detector
CMWRA	Currently Married Women of Reproductive Age
CPR	Contraceptive Prevalence Rate
CPS	Contraceptive Prevalence Survey
CYP	Couple Year of Protection
DDFP	Deputy Director, Family Planning
DG	Director General
DHS	Demographic and Health Surveys
DPT	Diphtheria, Pertussis, Tetanus
EPI	Expanded Program on Immunization
FAO	Food and Agricultural Organization
FP	Family Planning
FP-MCH	Family Planning and Maternal and Child Health
FPI	Family Planning Inspector
FW	Fieldworker
FWA	Family Welfare Assistant
FWC	Family Welfare Centre
GFR	General Fertility Rate
GOB	Government of Bangladesh
ICDDR,B	International Center for Diarrhoeal Disease Research, Bangladesh

ICPD	International Conference on Population and Development
IDH	Infectious Disease Hospital
IEC	Information Education Communication
IMR	Infant Mortality Rate
INFS	Institute of Nutrition and Food Science
IPPF	International Planned Parenthood Federation
IUD	Intra-uterine Device
KAP	Knowledge, Attitudes and Practices
LMIS	Logistics Management Information System
MBBS	Bachelor of Medicine and Bachelor of Surgery
MCH	Maternal and Child Health
MCWC	Maternal and Child Welfare Centre
MIS	Management Information System
MOHFW	Ministry of Health and Family Welfare
MR	Menstrual Regulation
MWRA	Married Women of Reproductive Age
MWRA	Married Women of Reproductive Age
NGO	Non-Government Organization
NRR	Net Reproduction Rate
PG	Post Graduate Hospital
RHC	Rural Health Center
SMIS	Service Management Information System
TB	TB Segregation Hospital
TFPO	Thana Family Planning Officer
TFR	Total Fertility Rate
THC	Thana Health Complex
TV	Television
UCN	Unmet Contraceptive Need
UN	United Nations
UNICEF	United Nations Children's Funds
URC(B)	University Research Corporation (Bangladesh)
USAID	United States Assistance for Internaltional Development
USC	Union Sub-Center
WHO	World Health Ogranization

1
Introduction

Unmet Need: The Basic Concept and Objective of the Book

Many women who are sexually active would prefer to avoid becoming pregnant but nevertheless are not using any method of contraception — these women are considered to have an "unmet need" for family planning (Robey, Ross and Bhushan 1996). This concept basically points to the gap between some women's reproductive intentions and their contraceptive behavior. And this gap poses a challenge to family planning program: to reach and serve a huge number of women whose reproductive attitudes resemble those of contraceptive users but who, for some reason(s), are not using contraception. The standard formula of unmet used group includes all fecund women who are married or living in union — and thus presumed to be sexually active — who are not using any method of contraception and who either do not want to have any more children (unmet need for limiting births) or want to postpone their next birth for at least two more years (unmet need for spacing births); the unmet need group also includes all pregnant married women whose pregnancies are mistimed or unwanted.

Unmet need has generated much interest, both among academics and policy makers over the years, dating back from Ronald Freedman's identification of the "discrepant behavior" exhibited among couples desiring to control their childbearing but not using contraception. It has emerged as a plausible rationale for action programs and as a measure of the probable `market' for contraception (Sinding, Ross, and Rosenfield 1994). At the international level, the policy makers are unanimous about the usefulness of this concept which has been amply reflected in the following statement of the International Conference on Population and Development "Governmental Goals for family planning should be defined in terms of unmet needs for information and services" (UN 1995: 32).

In recent years, much attention has been devoted to the replacement of demographic targets by a focus upon unmet need. This is primarily because at the present stage of demographic transition, the fulfillment of the unmet need can raise contraceptive prevalence above the level inherent in the demographic target (Sinding, Ross, and Rosenfield 1994). However, in order to shift the programmatic target approach to unmet need, new field strategies and changes in the program subcultures should be evolved. Those, in turn, will require analyses of the unmet need subgroups by type, the programmatic options for each such type, and the options that yield profitable return against effort.

The main objective of this book is to develop the basis for a prototype family planning program based on indepth-analysis of unmet need for contraception in the population. In line with this main objective, the specific objectives explored in the book are:

- to describe the main demographic characteristics of women (mainly married) in Bangladesh by urban-rural and divisional locations;
- to discuss about the various dimensions and dynamics of the concept of unmet need;
- to identify and describe unmet need subgroups;
- to provide a segmentation analysis, using Chi-squared Automatic Interaction Detector (CHAID) methodology; and
- to assess the current size of selected unmet need groups and suggest programmatic potentials for increased coverage, with consideration given to the sizes of the groups and their likely response patterns.

Bangladesh Family Planning Program: Success and Challenges

During the last two decades, Bangladesh has achieved commendable success in its national family planning program. The average annual increase in the CPR for the last 15 years is 2 percent, which is one of the highest among all muslim countries. The current use of FP methods has increased almost six-fold, from about 8 percent in 1975 to about 45 percent in 1993-94. Such a magnitude of increase in the CPR has resulted in considerable fertility decline in the country - TFR

has been halved during the same period reaching 3.4 in 1993-94. The family size norm has drastically changed - a high proportion of the couples now consider two child family as ideal family size, social opposition to family planning acceptance due to religiosity and traditional value is rapidly disappearing, vast majority of men and women now realize the problem of tremendous population growth and support use of family planning. Almost two-thirds of ever married women of the country used a FP method at some time. The success of the FP program has led a number of scholars to recognize that a fertility transition is already underway in Bangladesh (Cleland *et al.*, 1993, Caldwell 1994, Mauldin and Ross 1994, Khuda 1995). Amongst the world's 20 poorest countries, Bangladesh's achievement in population control is the highest (Carty *et al.*, 1993).

The demographic transition theory postulates that in order for the use of family planning to substantially increase and fertility level to significantly decline, a considerably high level of socio-economic development has to be achieved first. On the contrary, the important theories of economic development have concluded that control of population is one of the necessary conditions for raising the rate of economic growth and alleviation of poverty in the densely populated developing countries. In Bangladesh, despite much development efforts, the rate of growth is miserably low, the incidence of poverty is increasing, and backwardness is pervasive in the society due to the existence of a large traditional sector. The success of FP-MCH program in such an unfavorable environment has proved that practice can sometimes reach beyond theory. In fact, the experience of Bangladesh has the potential of generating a new economic-demographic theory.

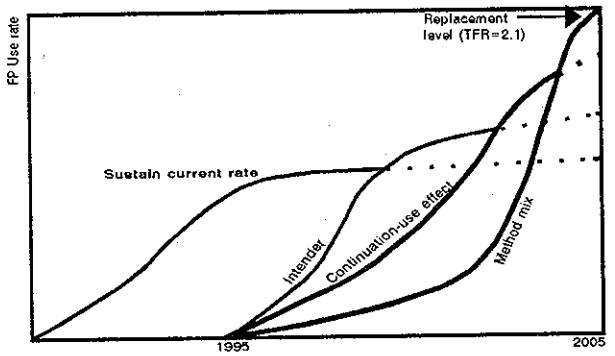
Like socio-economic development, the family planning program proceeds in several stages: pre-conditions for take-off, take-off, self-sustained growth, and the drive towards maturity. In the first stage, the preconditions for take-off such as awareness of the problem among the policy makers, basic institutional infrastructure, and manpower to launch the campaign are created. In the take-off stage, output of the program such as use of contraceptives increases as more and more inputs are devoted. In the stage of self-sustained growth, the same amount of inputs procreates higher and higher amounts of output (i.e., actions become cost-effective), and the effect and impact of the pro-

gram (such as decline in fertility, decline in growth rate of population, human development index) rapidly increase. In the final stage, effect and impact of the program reach their maxima, and they can sustain themselves without much program intervention so that the program can be reduced or even terminated to channelize resources for other purposes/programs.

In Bangladesh, the preconditions for take-off of the family planning program were created during late 1960's and mid-1970's. During the last two decades the FP-MCH program has substantially taken off. The program is now on the verge of entering into the third stage i.e., a transition between take-off and self-sustained growth. Hence, we have to identify the problem, set program objective and determine the actions to be undertaken for the stage of self-sustained growth. Considering the national demographic goal of attaining replacement level fertility (NRR=1, TFR=2.1) by 2005 and high demand for family planning (met demand 44.6%, unmet 19.4% and method failure 1.4% i.e., a total of 65.3%: BDHS 1993-94: 86) the main issues for this stage seem to be: to sustain the level of program output already obtained and to increase output further, to accelerate the effect and impact of the program, and to increase cost-effectiveness of program actions (Barkat and Howlader 1995). In order to reach the national demographic goal the Bangladesh FP program must focus not only on providing services to about 12 million current contraceptive users, but also on anticipating on doubling of that number within a decade (MacManus and Barkat 1995). In addition, for the long-term sustainability as well as for meeting the unmet need allout efforts need to be made to transform the intenders into users, enhance continuation rates and user-effectiveness, and increase use rate of long-term methods (Figure 1.1). The challenges are undoubtedly formidable, but certainly not unsurmountable given our past accomplishments.

The most important challenge is to sustain the existing level of program outcome such as the CPR and the use of MCH services. This may be a difficult task since the use rate of some high-impact methods (e.g., permanent methods and long-term temporary methods, e.g. IUD) is showing a declining trend at present. This aspect is extremely important as fertility in Bangladesh approaches replacement level, the majority of women (six of every seven as indicated in BDHS 1993-

Figure 1.1: Components of efforts to reach the replacement level fertility



Source: Barkat, A., M.A. Islam, M.B. Rahman, and R. Zaman 1995:2.

94) will have completed childbearing by the age of 30 years. For the remaining 15-20 fertile years these women will need contraception protection. Such a long reliance on spacing methods (hormonal contraceptives) will be expensive and inefficient. Under these circumstance a permanent method, such as sterilization would be the most desirable alternative (Details see; Barkat et al., 1994; Streatfield et al., 1994). The task of enhancing use rate of high-impact mehtods is difficult for another reason too: seeing that the CPR is already more or less high, it may be increasingly difficult to achieve each unit of additional increase in the CPR. In order to increase the CPR further, the quality of care and services has to be improved, and the level of users' satisfaction to be sufficiently raised so that the number of dropouts diminishes and those with unmet need become induced to contracept, and more effective IEC strategies have to be adopted to reach the hard-to-reach and underserved eligible couples. All these should be treated as priority concerns and preconditions for the further success of the FP program. The reasons, among others, include (a) about 30% of the current users of modern methods reported having health problems with their methods, and this is more pronounced for clinical methods, (b) one in six women reported that they regretted that they or their husbands had been sterilized, i.e., there are 400,000 dissatisfied sterilized clients, major reason being inadequate counseling; (c) clients of clinical contraceptions are generally less likely to be told by the relevant

service providers about side-effects and possibilities of method switching; (d) many service providers do not comply with the aseptic measures (details see: Mitra et al., 1994: Streatfield et al., 1994; Barkat et al., 1994). Second, although the outputs of the program have rapidly increased in the country, the impact is relatively less pronounced. Mere increase in the use rate will not increase the impact of the program to any considerable degree. What is required for this is to increase the magnitude of CYP by raising the level of `effective' use, i.e., by raising the use rate of permanent methods and the continuation rate of the use of temporary methods. Finally, implementation of the FP-MCH program is at present a highly cost-intensive affair, adversely affecting the efficiency of allocation of the scarce resources of the economy. The cost-effectiveness of the program should be increased as rapidly as possible.

It is possibly the recognition of the above challenges which has led the government of Bangladesh to formulate a new strategy for the national family planning program with the vision to achieve the following goals in the next 10 years: increase access to family planning services for all those who have an unmet need for contraception; improve the quality of family planning services so that all users use contraception longer without dropping out and can use contraceptives more effectively; enhance male participation in family planning; revitalize the use of long-term methods; improve the long-term financial sustainability of the program; and reach the replacement level of fertility (GOB 1996). In order to accomplish the vision, a practical program strategy, called the **Quality strategy** have been formulated. There are two major components of this Quality strategy: the first part focuses on making family planning services accessible to current nonusers who intend to use in the next 12 months, or **intenders**. The second part emphasizes substantially improving the quality of family planning services for all users. Specifically, the Quality strategy requires the following changes in continuation, effectiveness, acceptance, and method-mix. Both the continuation rates and effectiveness rates are assumed to rise, from the baseline rates, sufficiently to close by one-fourth the gap toward perfect continuation and effectiveness rates. This change affects four methods only: the pill, injectable, IUD, and condom. Acceptance rates among nonusers will rise from the baseline rates sufficiently to include all "intenders" as users by the year 2005;

after that the rates will remain constant. The share of long-term methods will increase over time, for parities 2, 3, and 4+. As a result of implementation of the strategy, it is expected that without emphasizing specific targets, the contraceptive prevalence rate will increase from 46 to 65 percent by 2005, and lower the total fertility rate (TFR) from 3.4 in 1994 to 2.3 in 2005 (a TFR needed to attain replacement-level fertility). Under the Quality strategy, the proportion using long-term methods (IUD, male sterilization, and female sterilization) will reverse itself and become significant, and male participation in family planning will improve through use of condoms and male sterilization. To transfer intenders to users, the most important strategic issues to be given top priorities are: identification of intenders, training on identification of intenders, special IEC, procurement of additional contraceptives and supplies, more efficient management of services, more input for enhanced male motivation and participation, and efforts to increase community participation.

Strategically, the Quality strategy implies quality of care and services by: assessing the extent of inadequacy in the existing facilities in meeting the demand for addressing side-effects and complications; identifying, monitoring, and treating side-effects and complications; and strengthening the chain of supervision for ensuring side-effect management. In addition to correcting capacity problems, some mojor inputs required are: additional supplies (IUD and sterilization-related medicines and others), IEC materials on longer-acting methods, training for relevant personnel on specific issues, institution of counseling, follow-up of clients, and intensified efforts by the GOB and NGOs to enhance male participation. The quality strategy, prepared based on client-oriented approach, is financially sustainable. The financial benefit-cost ratio estimated is 3.7, i.e., for each taka invested in the national family planning program, the government eventually will get 3.7 taka back in the form of sectoral expenditure savings. This also suggests that the Quality strategy can generate enough savings to pay for itself and therefore is financially sustainable (GOB 1996).

Methodology of the Study

The information containing in this book is primarily based on the secondary analyses of the recent national demographic and health survey

conducted in Bangladesh (BDHS 1993-1994)[1], the latest Population Census 1991, and available literature on the national family planning program. Data from these sources are subjected to new tabulations to describe eligible population, identify unmet need subgroups, and determine possible ways to deal with those groups.

The exercise involving the search for effective program component(s) by each unmet need category was carried out in various steps. In step 1, independent tables for each unmet need category, containing the subgroup, its location (rural/urban, and by divisions), and characteristics of program components (FP method, type of IEC, services, infrastructure, etc.) were prepared. In step 2, each of these tables were then filled-in by us, using our knowledge about the existing FP program of Bangladesh. In this step, review of relevant literature and studies was undertaken. In step 3, opinions of the relevant officials, both in the GOB and in the NGO sectors, were sought in order to fill-in the individual tables. In step 4, for each unmet need category, the filled-in tables of the second step were cross checked with the information obtained in step 3. The program components found common in steps 2 and 3 were retained. Regarding the uncommon components, discussions were held with the relevant FP officials. Finally, based on the analysis of materials obtained, a consolidated matrix was prepared. This forms the basis of the expected "prototype family planning program" in Bangladesh.

Organization of the Book

This book presents the whole gamut of the pertinent issues in eight chapters including the present one. Chapter 2 presents an overview of the demographic, economic and health situation in Bangladesh and thereby sets the context for further analysis. Chapter 3 provides a brief analysis of the demographic characteristics of women in Bangladesh by putting emphasis on the women in reproductive age, fertility and birth intervals, and maternal health and child delivery. The dynamics of the concepts and measures of unmet need is presented

1. *The most recent BDHS refers to 1996-97. However, the final report of BDHS 1996-97 have not yet been published and the data diskettes will be available only after its publication. Thus, the most recent BDHS for which materials for secondary analysis are available is BDHS 1993-94.*

in Chapter 4. The analysis of unmet contraceptive need in Bangladesh in terms of its magnitude, differentials, and related issues are provided in Chapter 5. This chapter also introduces a new concept — the intender approach, which needs to be explored in the future. Chapter 6 analyses the predictors of unmet need and presents a segmentation analysis using a new tool known as Chi-squared Automatic Interaction Detector (CHAID). Once the predictors are known and segments are identified the obvious issue would be to search for necessary interventions to reach those segments. The pertinent issues relating to this are dealt with in Chapter 7. Chapter 8 gives summary and conclusions, and provides some feasible recommendations for setting-up of a client-oriented family planning program in Bangladesh.

2

Demographic, Economic and Health Situation

This chapter presents a brief about the Bangladesh society and discuss the nature of changes in the major indicators of the society and the economy. An understanding of the main features of the Bangladesh society will facilitate better conceptualization of the nature and gravity of the specific problem under the present study and deduction of the policy implications. The discussion presented will primarily be based on the previous studies, secondary sources and government documents.

A General Profile

With the end of the British rule in 1947, the South-Asian subcontinent was partitioned and two sovereign countries, India and Pakistan, came into being. The region which now constitutes Bangladesh became the eastern part of Pakistan and was named East Pakistan. After a bloody war of nine months between the two parts of Pakistan, East Pakistan has become independent in 1971 and appeared on the world map as Bangladesh. It is a small, although highly populous, country located in the eastern part of the South-Asian sub-continent. It is located just above the mouth of the Bay of Bengal. Bangladesh lies between $20^{o}34$ and $26^{o}38$ north latitude and $88^{o}01$ and $92^{o}41$ east longitude. The country is bounded by India on the west and north, India and Burma on the east, and the Bay of Bengal on the south. The total area of the country is 55,598 square miles. There are 85,650 villages in 460 thanas and 90 municipalities, all in 64 districts divided into six administrative divisions.

The country consists mainly of low, flat and fertile land, except the hilly region in the north-east and south-east and some areas of high lands in the north and north-western part. A well-knit network of rivers, including the Padma, the Jamuna and the Meghna and their distributories numbering about 230 with a total length of about 15,000 miles covering the country flow down to the Bay of Bengal. The alluvial soil is thus being continuously enriched by heavy silts deposited by rivers during the rainy season.

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Bangladesh enjoys generally a sub-tropical monsoon climate. There are six seasons in a year, but summer and monsoon are prominent. The maximum temperature recorded in summer months is 98°F, in some years even higher. Monsoon starts in June and stays upto October. This period accounts for 80 percent of the total rainfall. The average rainfall varies from 47" to 136". Bangladesh is subject to frequent visits of two types of natural calamities: cyclone and flood[2].

Salient Demographic Features

Bangladesh has a total area of 55,598 square miles or 143,998 square Kilometers. Of the total area, river area constitutes 3,024 square miles and forest area (reserved area only) 6,387 square miles, so that an area of only 46,187 square miles is left to remain as the effective land area for habitation. In 1995, the size of her population was 121 million and the density of population per square kilometer was 839 persons (Table 2.1). About 85 percent of the total population lived in the rural areas. The sex ratio was 106.0 (i.e., 51.46% of the population are males). The dependency ratio was 86 in the rural areas and 68 in the urban areas (Salam and Hossain 1991).

Table 2.1 shows the size, the growth rate and density of population in different years from 1901 to 1995. It appears that the size of population in Bangladesh has increased about four times during a period of ninety years between 1901 and 1991. The density of population has increased about four fold during the last 90 years. It may be worth noting, however, that density of population was always high in the Bangladesh region, compared to that in other countries of South Asia and South East Asia[3]. The density has been constantly rising and is alarmingly high at present. Thus, although Bangladesh stands eighth as populous country in the world, it is the most densely-populated country of the world, followed by Java region of Indonesia and Nile region of Egypt.

The rate of growth of population was less than one percent till thirties. It increased substantially in the thirties, although birth rate remained

2 *For a detailed discussion on topography and climate of Bangladesh, see the Introduction of the Statistical Year Book of Bangladesh (GOB 1991a).*

3 *For example, Bangladesh had a density of population of 534 persons even in 1901. But the density of population was 435 persons in India in 1971, 278 persons in Indonesia in 1971 and 179 persons in Thailand in 1970. See Demographic Year Book 1971.*

Table 2.1: Size, density, growth rate of population and crude birth and death rates in different census years 1901-1995

Year 2/	Number (million)	Percentage increase	Annual growth rate (%)	Density (per square K.M.)1/	Crude birth rate per 1000	Crude death rate per 1000
1901	28.93	-	-	201	-	-
1911	31.56	9.08	0.94	219	53.8	45.6
1921	33.25	5.38	0.60	231	52.9	47.3
1931	35.60	7.07	0.74	247	50.4	41.7
1941	42.00	17.96	1.70	292	52.7	37.8
1951	44.17	5.16	0.50	307	49.4	40.7
1961	55.22	25.04	2.26	383	51.3	29.7
1974[2]	76.40	38.35	2.48	531	47.4	19.4
1981	89.91	17.69	2.32	624	43.3	16.8
1991	107.99	20.11	2.17	750	34.5	13.3
1995 3/	120.80	11.86	1.80	839	26.9	8.5

Source: Adapted from GOB 1991a:45; BDHS 1996-97; BHDS 1995, Barkat 1996.

Note:

1/. *The values have been shown in round figures.*

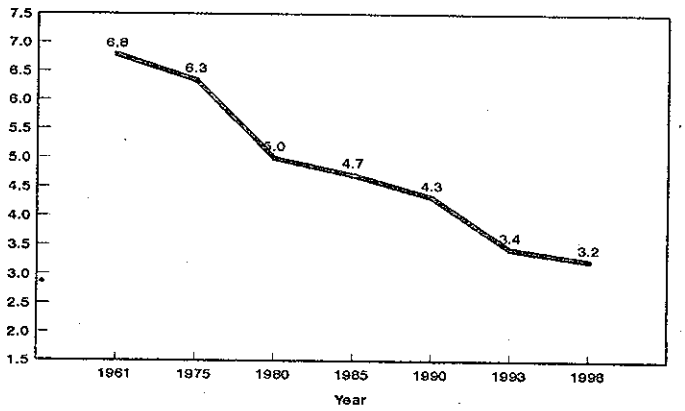
2/. *The census has been carried out in the region of Bangladesh since 1901 in the beginning year of each decade except in the 1970s for which census was done in 1974. The War of Liberation did not allow the census to take place in 1971.*

3/. *This is not a census year, but data is available from BBS which gives an indication about the most recent year.*

the same. The increased growth rate can be attributed to the sharp decline in mortality following the discovery and the increased adoption of preventive measures against epidemic diseases and improved health service system. In the 1940s, the growth rate declined, but this resulted primarily due to the massive migration of Hindus to India. Since early 1960s, the rate of growth constantly increased till mid-1970s. However, during the last decade the rate of growth has declined, although it still remains high above 2 percent.

The crude birth rate has declined at a much lesser rate than the crude death rate during the period from 1940s to 1980s. However, the crude birth rate has declined quite considerably during the period from 1975 to 1995. As a result, as shown in Figure 2.1, the total fertility rate has considerably declined from 6.3 in 1975 to 3.3 in 1995, leading to

Figure 2.1: Trend in total fertility rate (TFR): 1961-1996



Sources: Prepared based on information in GOB, 1995; BDHS, 1996-97; BHDS, 1995.

decline in growth rate. The declining birth rate in the recent decades is the result of the massive family planning campaign[4]. Despite this, however, the birth rate is very high — 26.9 per 1000, which is an alarming rate for a region which is already densely-populated.

4 *The family planning program had been launched in Bangladesh since 1960s. But the campaign became quite intensive only since late 1970s. Today a large family planning department of the government and a huge number of non-government organizations, funded by foreign aid, are involved in the campaign throughout the whole country. The positive effects of the campaign are now discernible. The contraceptive prevalence rate (CPR) has risen from 8.0 percent in 1975 to 49.2 percent in 1996 - a six-fold increase during 20 years. See BDHS 1996-97 (Preliminary Report).*

In terms of the size of the dwelling population, the urban centers and dwellers in Bangladesh are burgeoning. Considering all metro cities, the population density is 3600 persons per square kilometer, which is five times higher than rural density, while the capital Dhaka city alone carrying 5058 person per square kilometer (GOB 1995).

Increasing landlessness, underemployment in the rural areas and the increasing job prospect in the urban areas as perceived by the rural people are the main factors to cause ceaseless migration of the rural poor to the urban informal sector and growth of slum population as well as inflationary raise in urban population. Besides, various natural disasters also influenced to this migration (Stalker 1995). This rural to urban movement can be defined as economic, occupational and settlement inter-migration. Thus, the migration of the rural poor to the urban areas has resulted direct inflow of rural poverty and backwardness to the urban areas, engendering the process of "ruralization" of the urban areas. Most of the poor urban dwellers still cherish the outlook and values which they had in their previous rural life and are not capable of attaining the cultural standard of urban life.

With the expansion of the urban centers and increase in the urban population, the number of slums and slum dwellers are also rapidly increasing. The size of the slum population being so large and the rate of growth of slums being so high have important economic, social, demographic and public health implications. The slum dwellers are largely the distressed migrants from the rural areas and, more importantly, most of them live below the poverty line. The problem is aggravated by the fact that the development efforts of the government currently being devoted to the slum population are highly inadequate, in most cases they are `served' less even than the rural population *en masse.* The slum dwellers do not have sufficient access to the education, employment and health facilities of the formal sector: The health and nutritional status of the urban poor is even worse than that of the rural poor; fewer than 20 percent of school age children in Dhaka slums attend school, infant mortality rate and maternal mortality rate in the slums are also quite high compared to the national rates. It might be mentioned here that in Bangladesh, about 300 thousand children under 5 die of diarrhoea every year, out of which

one-third die in city slums and squatter settlements (GOB-UNICEF 1991). The overall infant mortality rate (IMR) in Bangladesh appears more favorable for urban areas than for rural areas; however, once that is disaggregated, the urban slums not only reach the highest IMR in the country but also show important gender differentials.

Economic Characteristics

Population distribution by economic category

In Bangladesh, the civilian labour force has been constantly increasing since 1961. The number of females in the civilian labour force increased in the last two decades from 0.9 million in 1974 to 20.9 million in 1989. Agriculture continues to remain the main source of employment. Share of employment in the agriculture sector was 65 percent in 1989. Employment in the non-agricultural sectors has more than doubled between 1961 and 1989. Among the non-agricultural sectors, production and transport and sales are the major occupations, absorbing 26 percent of the population.

Agricultural sector: growth, landlessness and inequity

The agricultural sector in Bangladesh comprises four sub-sectors: crops, forestry, livestock and poultry, and fisheries. But the crops sub-sector overwhelmingly dominates the agricultural sector, the role of the non-crop sub-sectors together being very small. Production, growth, employment, and income distribution in agriculture are determined mainly by those in crops sub-sector. Within the crops sub-sector again, paddy is the most important crop.

Increase in agricultural output requires positive change in at least one of the following: acreage, cropping intensity and productivity. All of these three determinants of change in agricultural production has increased in Bangladesh during the last decades, resulting in considerable increase of agricultural production. The amount of net cropped area has increased by 7.40 percent in Bangladesh during 1971-87. The forest area was already low (15.6%) in 1971/72, it has fallen further in 1987 (13.5%). It is plausible to assume that increasing pressure of population compels the rural households to increase net cropped

area as much as possible, specially by reducing current fallows and sometimes by destroying forests. However, the rate and the amount of increase in acreage are quite low.

The cropping intensity has increased from 149 in 1975-76 to 159 in 1986-87 — by slightly more than 1 percent per annum. That the cropping intensity is less than 200 itself indicates that a large part of the net cropped area is still single-cropped.

As a result of increase in cropped area,. cropping intensity and per acre yield of paddy, total production of paddy has been increasing. Both the total production of agricultural crops and the total production of paddy have demonstrated upward trend during the post-liberation period and the absolute amount of increase in both during fifteen years is also conservable. However, the rate of increase in production seems to be much less than expected from the efforts devoted to agricultural development.

Growing pressure of population or limited arable land has been continuously reducing per household and per capita holding, increasing fragmentation and sub-division of holdings, increasing agricultural unemployment, and reducing the real wage rate. In 1888, per household holdings (average) varied between 6 acres and 9 acres among the districts of united Bengal, when an average household required 4-6 acres of land for subsistence living (Nolan 1988:3). Average size of holdings declined to around 4 acres at the time of Mukherjee's survey of 6 villages in 1942-43 (Mukherjee 1971). Average size of holdings was 3.54 acres in 1960 and 3.5 acres in 1977, but 2.4 acres in 1982 (Osmani 1985), indicating that the size of per capita landholding was only 0.7 acres in 1960 and 0.48 in 1982, compared to 1.5 acres in 1888 and 1 acre in 1942. The average size of farm has declined further since 1982 and become 1.58 acres in 1986-87 (Rahman 1992:94).

In addition to rapidly reducing per household and per capita landholdings in general, population growth is increasing the number and proportion of the landless laborers and small peasants in agriculture. In 1960, 51.8 percent of households owned less than 2.5 acres, but in 1977 the proportion increased to 67.5 percent. The percentage of landless households increased from 18 percent in 1961 to 38 percent

in 1973-74 (Alamgir 1978:101). The proportion of completely landless or functionally landless (owning less than 0.5 acres of land) was as high as 50.8 percent in 1977 (GOB 1980:189). During 1960-82, the landless households has grown at a faster rate (3.13% per annum) than did population (2.5%), and as well as the rate of growth (1.58% per annum) of rural households (Hossain 1986).

The inequity in land distribution has been increasing in the recent period, compared to that in the pre-partition period. The large farm households (owning more than 5 acres) constituted 22.4 percent of the total households in 1960, 21 percent 1977 and 11.7 percent in 1983-84, showing a declining trend. The percentage of medium farm households (which owned land between 2.5 acres and 5.0 acres) has declined from 26 percent in 1960 to 18 percent in 1983-84. But the proportion of small farm households (which owned less than 2.5 acres) increased from 51 percent in 1960 to 70.3 percent in 1983-84. Thus, concentration of landholdings has been increasing and polarization of the peasantry into two extreme classes is becoming more visible.

State, economic growth, income distribution and poverty

In Bangladesh the government has been implementing a series of development programs since late 1960s, and the development efforts have been intensified since late 1970s. These efforts have rapidly affected the intermediate variables: infrastructure has considerably developed, use of family planning has substantially enhanced, and exposure and information of the people have greatly increased. Development expenditures have increased by around fifteen hundred percent during the period 1973/74 - 1989/90.[5] As a result of these huge expenditure, the important infrastructural variables, namely transport and communication, rural electrification, education, health and family planning, and banking have substantially changed. The rate of development of transport and communication and the rate of increase in the number of electrified villages are quite staggering. The magnitude of increase in the facilities for education and health is also spectacular.

5 *This has been made possible through massive inflow of foreign aid to the country in the post-liberation period. During 1972/73 -1989/90, Bangladesh has received on average 1058.72 million US$ per annum as grants and loans from abroad.*

The immediate effects of the changes in intermediate variables are quite discernible. A considerable structural change has taken place in the economy with increasing share of the service sector. In addition to the structural change, some other effects of development efforts are also discernible. The magnitude of increase in urbanization, if measured in terms of change in the percentage of urban population, is considerable: the percentage of urban population has increased from 8.8 percent in 1974 to 18 percent in 1991. The contraceptive prevalence rate (CPR) has increased from 7.7 percent in 1975 to 49 percent in 1996. The amount of bank deposits has increased from Tk.9693 million in 1974/75 to Tk.191,094 million in 1989/90 - by 1971 percent. The literacy rate (adult) has also increased, although the rate of increase is very low (3.4%). The small increase in the literacy rate despite considerable increase in the number of educational institutions and students is due mainly to the high growth rate of population compared to the increase in the number of literate persons. The percentage of households having radio sets and the newspaper circulation in the rural areas have more than doubled during 1971-1990, indicating that exposure and information of the people have considerably increased.

Although the effects of development programs on the intermediate growth variables are on the whole substantial, their effects on the proximate determinants of growth is much less pronounced. The percentage of savings has been fluctuating at a very low level (most often less than 3%), without showing any sign of increase. The proportion of investment has been declining; even total investment has declined. About 50 percent of industrial units are sick (less than 30% capacity utilization). However, growth of manufacturing employment has increased, implying a decline in productivity per worker (Sahota 1990). Real per capita income has been practically standstill since 1982-83. So is export.

The failure of the development programs to significantly affect the proximate determinants of growth has ultimately resulted in severe stagnation of the economy. The rate of growth of industrial production in 1980s is only 2.5 percent, as against 4.3 percent during 1975-80. Finally, the rate of growth of GDP has considerably decelerated; it has declined from 6.6 percent during 1972-73 through 1979-80 and 4.4 percent during 1975-76 through 1980-81 to 3.3 percent during 1980-81 through 1986-87.

The distribution of income in Bangladesh is highly inequitable and inequity has been increasing in the recent years. Table 2.2 shows that Gini coefficient for income distribution has been deteriorating in Bangladesh. The gini coefficient deteriorated between 1963/64 and 1976/77, excepting for some improvement for urban income in 1976/77. During the same period, per household income declined in both rural and urban areas. It is thus evident that inequity in income distribution has been increasing in Bangladesh even though per capita income has been declining. An explanation of this apparent paradox is not far to seek. The top 15 percent of both urban and rural households actually enjoyed an absolute increase in their income and the burden of reduction was borne by the bottom 85 percent (Osmani and Rahman 1981:14). Thus, over the years a process of pauperization correspondingly proceeded with concentration of income and wealth at the aggregate level of the economy.

Table 2.2: Change in Gini Coefficient of household income and per household income (at 1963/64 price) in Bangladesh

Year	Gini Coefficient of household income		Per household income (at 1963/64 prices)	
	Rural	Urban	Rural	Urban
1963/64	0.342	0.460	1680	2700
1966/67	na	na	1250	2103
1973/74	0.340	0.375	1383	1961
1976/77	0.423	0.501	1344	2398

Source: Osmani, S.R. and Atiqur Rahman 1981:13, 15.

In rural Bangladesh, the per capita daily intake of food, calorie (energy) and protein have continuously declined during 1962-90 (Table 2.3). During 1975-90, the average intakes were less than the level recommended by WHO/FAO for a person to live above the absolute poverty line. But the figures were slightly higher than the level recommended for a person to live above the extreme poverty line. The trend of intake of food and nutrition also indicates that the majority of the rural poor live in hunger and impoverishment.

Table 2.3: Trend of per capita daily intake of food, calorie and protein in rural Bangladesh

Period	Food intake (gm)	Calorie (kc)	Protein (gm)
1962-64[a]	886	2301	57.9
1975-76[a]	806	2094	58.
1981-82a	765	1943	48.
1990b	746	1892	49

Source: a. Report of Nutrition Survey of Rural Bangladesh 1981-82, INPS, Dhaka University.

b. Rahman Z. and M. Hossain 1992.

After liberation, the government of Bangladesh has launched cumulative development programs of considerable magnitude. The effects of such programs on the intermediate growth variables such as transport and communication, electrification, education, health, etc. are spectacular. The infrastructure of the economy has considerably developed. Use of family planning has rapidly increased. Urbanization and monetization of the economy has increased. Education, knowledge, and exposure of the people have also increased. But, despite these, the impacts of the development programs on the proximate determinants of development such as savings, investment and employment are negligible. As a result, the development efforts of the government have so far failed to expand the industrial sector and raise the rate of economic growth even during a long period of time. The development programs have also failed to reduce the long prevailing inequity in income distribution which has rather increased. However, the development efforts have resulted in at least some decline in the incidence of absolute poverty in the recent years, although the average food consumption and nutrition intake continue to remain low.

Health and Family Planning Services

During the last three decades, Bangladesh has achieved considerable success in the area of health and family planning services. The pattern and the rate of socio-economic development of Bangladesh greatly

depend on the improvement of health and sanitation status of the population and the success of the FP program. While improvement of the health status increases the productive power of the people and enhances human development in the society, the FP program controls the growth of population and contributes to improvement of reproductive health status. As such, an analysis of the health and FP situation can unravel some of the forces which are contributing or acting as impediment to social development of the country.

Health facilities and health status

Health facilities

The medical facilities have rapidly grown in Bangladesh. During 1978-94 the number of hospitals, both government and private taken together, has more than doubled, the number of beds has also doubled, and the number of registered doctors has increased more than three times (Table 2.4).

During the same period, the number of medical colleges has increased from 8 to 13, and the number of post graduate medical institutes from 3 to 6. Table 2.5 exhibits the growth of health facilities at lower levels of service delivery. It is evident that although the number of thana Health Centres and District Hospitals have increased during 1978-94, the number of other hospitals and clinics remains more or less constant. The findings indicate that the rate of increase in the number of health facilities is quite low and it is definitely much lower than required in a society where the health status of the people is miserably low.

Levels and trends of infant, and child mortality

Under-five mortality for the most recent five-year period (which roughly corresponds to the years 1989-1993) is 133 per 1,000 live births. This means that almost one in seven children born in Bangladesh dies before reaching the fifth birthday. Two-thirds of the deaths under age five occur in the first year of life; the infant rate is 87 deaths per 1,000 live births and the child mortality rate is 50 per 1,000 live births. During

Table 2.4: *Growth of medical facilities: 1978-1994*

Year	Hospitals		Govt. dispen-saries	Beds in		Registered doctors (MBBS, BDS)	Registered nurses	Registered midwives	Registered lady health visitors
	Govt.	Private		Govt. hospital	Private hospital				
1978	388	36	1752	16853	2685	7035	2012	1041	413
1979	405	36	1752	17494	2703	7909	2461	1167	432
1980	510	39	1752	18957	3030	9188	3019	1353	44
1981	512	164	1468	19021	4771	10065	3736	2239	44
1982	544	164	1446	19136	4771	10333	4500	2934	473
1983	560	164	1493	20286	4771	11496	5164	3424	758
1984	568	164	1559	21870	4771	13500	5800	3850	1176
1985	596	164	1275	22874	4771	14591	6418	4399	158
1986	600	164	1275	23306	4771	16090	6912	5199	1584
1987	608	267	1310	26575	6463	16929	7000	5837	179
1988	608	267	1310	26871	6463	18030	7390	6556	-
1989	608	267	1310	26913	NA	18917	8056	7035	NA
1990	608	267	1310	NA	NA	20006	9274	7485	NA
1991	610	280	1318	27111	7242	21004	9655	7713	345
1992	611	280	1362	27111	7242	21749	10607	9363	-
1993	611	292	1397	27637	7643	22400	9455	10104	-
1994	639	280	1397	28553	7247	24911	9630	7713	-

Notes: *All figures are progressive totals.*
Source: Director General of Health Service (Health Information Unit), Ministry of Health and Family Welfare.

Table 2.5: Health facilities in Bangladesh: 1977-94

Year	THC	RHC	USC	P.G. Hosp.	Dis-trict Hosp.	T.B. Hosp.	T.B. Seg. Hosp.	IDH	Leprosy	Urban Dispen-sary	T.B. clinic	School health clinic	Maternity & child welfare centre
1977	179	12	1275	3	37	4	8	5	3	35	44	25	9
1978	253	12	1275	3	37	4	8	5	3	35	44	25	91
1979	275	12	1275	3	37	4	8	5	3	35	44	25	91
1980	275	12	1275	3	37	4	8	5	3	35	44	25	9
1981	280	12	1275	3	37	4	8	5	3	35	44	25	91
1982	312	12	1275	3	37	4	8	5	3	35	44	25	91
1983	319	12	1275	3	43	4	8	5	3	35	44	25	91
1984	344	12	1275	3	59	4	8	5	3	35	44	25	91
1985	346	12	1275	3	59	4	8	5	3	35	44	25	91
1986	356	12	1275	3	59	4	8	5	3	35	44	25	91
1987	351	12	1275	3	59	4	8	5	3	35	44	25	91
1988	352	12	1275	3	59	4	8	5	3	35	44	25	91
1989	352	12	1275	5	59	4	8	5	3	35	44	25	96
1990	352	12	1275	5	59	4	8	5	3	35	44	25	96
1991	400	12	1310	5	60	4	8	5	3	35	44	25	96
1992	400	12	1362	5	60	4	8	5	3	35	44	25	96
1993	172	12	1362	5	57	4	8	5	3	35	44	25	96
1994	380	14	1362	5	59	4	8	5	3	35	44	23	96

Notes: *THC= Thana Health Complex; RHC= Rural Health Centre; USC= Union Sub-Centre; P.G.= Hosp. Post Graduate Hospital; T.B.= Seg.-T.B. Segregation Hospital; IDH= Infectious Disease Hospital.*

Source: Director General of Health Services (Health Information Unit), Ministry of Health and Family Welfare.

infancy, the risk of death in the first month of life (52 per 1,000) is greater than in the next 11 months (35 per 1,000).

The findings of the BDHS, 1996-97 indicate that child survival in Bangladesh has improved since the early 1980s. Under-five mortality has declined from 173 deaths per 1,000 births in the period 10-14 years before the survey (approximately 1984-88) to 116 for the period 0-4 years before the survey, a decline of 43 percent. The pace of decline was slightly faster for child mortality than for infant mortality; the child mortality rate declined by 46 percent (from 63 per 1,000 births 10-14 years before the survey to 34 per 1,000 births 0-4 years before the survey), while the infant mortality rate declined by 30 percent over the same period (from 117 to 82 per 1,000 births). It is interesting to note that, while neonatal mortality rates have fallen in the recent past (from 75 to 48 per 1000), post neonatal mortality rates show (from 42 to 34) little change (see BDHS 1996-97: 20).

Further evidence of a decline in childhood mortality comes from a comparison of data from the 1996-97 BDHS with previous data sources. Table 2.6 show infant mortality rates from various surveys and the vital registration system for the period 1981 to 1995. Although the rates fluctuate over time, there is a general downward trend. Infant mortality rates have declined from around 120 or more per 1,000 live births in the early 1980s to 80 in the two years before the BDHS. Under-five mortality has also declined. The 1989 BFS reported rates for 1970 to 1983 of almost 190 deaths per 1,000 birth (Huq and Cleland 1990:116), while the rate from the BDHS for the period 1994-97 is 116. Although not comparable to nationally-representative data, childhood mortality has also declined in the Matlab area of Bangladesh. Infant mortality rates in the comparison area declined from about 106 deaths per 1,000 births in the period 1984-88 to 97 for 1989-93, a less rapid decline than implied by the BDHS rates of 112 and 87, respectively (ICDDR,B 1994:5). However, the decline in the under-five mortality for the comparison area of Matlab was steeper than the rates recorded in the BDHS; the former show a decline from about 182 to 132 deaths per 1,000 births for the period 1984-88 to 1989-93, compared to 164 to 133 for the BDHS.

Table 2.6: Trends in infant mortality rates: 1981-1994

Data source	Year											
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1994
1996-97 BDHS[1]	-	-	-	-	-	117	-	-	-	-	96	82
1993-94 BDHS[1]	117	-	-	-	-	112	-	-	-	-	87	-
1991 CPS	-	-	-	-	-	-	73	88	88	75	-	-
1989 CPS	-	-	-	-	107	99	90	102	-	-	-	-
1989 BFS	128	129	136	134	111	113	84	-	-	-	-	-
Vital registration	129	122	118	122	112	116	113	116	98	94	91	-

[1] *Figures are five-year rates placed at the mid-point year.*
Source: BDHS 1993-94:93; BDHS 1996-97:20.

Antenatal care

The BDHS 1996-97 data indicate that many mothers do not seek antenatal care. Among births that occurred in the three years before the survey, almost three-quarters (74%) did not received antenatal care (antenatal check-up) during pregnancy. Those women who do receive care tend to receive it from doctors (20%) or from nurses, midwives, or family welfare visitors (7%).

The survey results show that there are sharp differences in antenatal care coverage among subgroups in Bangladesh. Antenatal care is much more common for births to younger women and those of lower birth order. Births to women in urban areas are more than twice as likely to have received antenatal care (58%) as births in rural areas (23%). The urban-rural difference is due largely to the greater proportion of urban births for which doctors provide antenatal care. Differences in antenatal care coverage by division are minimal; it is only in Dhaka that a greater proportion of pregnant women receive antenatal care. However, differences by education level of the mother are substantial: while only 18 percent of births to women with no education receive care during pregnancy, the level increase to 60 percent of births to women with at least some secondary school.

Although the level of antenatal care in Bangladesh is still relatively low, there is evidence that it has been increasing over time. The 1989 BFS included a question as to whether women had gone to a doctor or family welfare visitor for a check on her recent pregnancies (Huq and Cleland 1990:111). Mothers responded affirmatively for less than 10 percent of the births in the years immediately prior to the survey. Although differences in the questions could account for some of the increase over time, it seems likely that there has been an increase in the extent of antenatal care received.

Tetanus toxoid vaccination

According to BDHS, 1996-97, tetanus toxoid coverage is relatively widespread in Bangladesh. For almost three-fourths of births, the mothers received at least one tetanus toxoid injections during pregnancy. This represents a considerable increase from 66 percent level in 1993-94.

As for antenatal care coverage, higher tetanus toxoid coverage among younger mothers may be explained by the fact that higher parity mothers and older mothers may have received all the required doses of the toxoid during previous pregnancies. Differentials in coverage by division show that coverage is highest in Khulna Division and lowest in Sylhet Division. There is a strong positive relationship between the mother's education and tetanus toxoid coverage. The proportion of births whose mothers received two or more tetanus toxoid doses during pregnancy increases with increase in educational status.

As with the data on antenatal care coverage, data from the 1989 BFS indicate that the proportion of pregnant women receiving tetanus toxoid injections has risen substantially. For births occurring in 1988 and early 1989, 26 percent of the mothers received at least one tetanus toxoid injection during pregnancy, according to the 1989 BFS (Huq and Cleland 1990:111). According to the BDHS, this figure was 75 percent for births in the three years before the survey (corresponding roughly to 1991-93). If true, this means that the coverage level has tripled in about seven years.

Delivery care

Almost all births (96%) in Bangladesh occur at home. The only exceptions to this high level of home deliveries are births to urban women, 20 percent of which occur in health facilities; births to women with some secondary education, 16 percent of which occur in health facilities; and the small proportion of births to women who receive at least four antenatal care visits, 37 percent of which occur in health facilities. Differentials by age of the mother, birth order, and division are not significant.

Sixty percent of births in Bangladesh are assisted by traditional birth attendants (*dai*), with relatives and friends assisting in delivering 29 percent of births. Less than 10 percent of births are assisted by medically trained personnel — either doctors (5%) or nurses, midwives and family welfare visitors (3%).

Children vaccination

Information on vaccination coverage is presented in Table 2.7, according to the source of information used to determine coverage, i.e., the vaccination card or mother's report. Data are presented for children age 12-23 months, thereby including only those children who have reached the age by which they should be fully vaccinated. The first indicator shows the proportion of these children who had been vaccinated at any age up to the time of the survey. These results are presented according to the source of the information used to determine coverage, i.e., vaccination record or mother's report. The second indicator shows the proportion of children who had been vaccinated by age 12 months, the age at which vaccination coverage should be complete.

According to information from both the vaccination records and mothers' recall, 85 percent of children age 12-23 months have received a BCG vaccination and 84 percent the first doses of DPT and polio. Coverage declines for subsequent doses of DPT and polio. Only 67 percent of children receive the third doses of DPT and polio; dropout rates[6] between the first and third doses of DPT and of polio are thus 21 percent. The coverage rate for measles (69%) is similar to that for the third doses of DPT and polio. Overall, 59 percent of children 12-23 months are fully vaccinated; 14 percent have not received any vaccinations at all.

As mentioned earlier, it is recommended that children complete the schedule of immunizations during their first year of life, i.e., by 12 months of age. Among children age 12-23 months at the time of interview, 46 percent had been fully vaccinated before their first birthday. With regard to specific vaccines, children were least likely to have received the measles vaccination by age 12 months.

Sanitation

Tubewells are the major source of drinking water in Bangladesh. Overall, about nine out of ten households (88%) obtain their drinking

6 *Dropout rate = (Dose 1 - Dose 3) * 100/Dose 1.*

Table 2.7: Percentage of children 12-23 months who had received specific vaccines at any time before the survey, Bangladesh 1993-94

Source of information	Percentage of children who received										Percent with vaccination card	Number of children
	BCG	DPT			Polio			Measles	All[1]	None		
		1	2	3+	1	2	3+					
Vaccination card	45.1	45.4	42.8	39.7	45.4	42.8	39.7	36.5	35.3	0.0	45.5	533
Mother's report	40.3	38.2	34.6	26.3	38.8	35.0	27.1	32.4	23.6	14.0	54.5	638
Either source	85.4	83.6	77.4	66.0	84.2	77.7	66.8	68.9	58.9	14.0	100.0	1171
Vaccinated by 12 months of age	79.4	78.9	71.6	59.0	79.5	71.9	59.7	55.0	46.2	19.0	-	1171

Note: The DPT coverage rate for children without a written record is assumed to be the same as that for polio vaccine since mothers were specifically asked whether the child had received polio vaccine. For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccination.

1 Children who are fully vaccinated (i.e., those who have received BCG, measles and three doses of DPT and polio).

Source: BDHS 1993-94: 107.

water from tubewells. Piped water is available mostly in urban areas. Among urban households, 27 percent have water piped into the residence, 10 percent obtain drinking water from taps (public or private) outside the residence, and 62 percent get their drinking water from tubewells.

Over two-thirds (69%) of households in Bangladesh have sanitation facilities; only 41 percent have a hygienic toilet, while 30 percent have no facility at all. Hygienic toilets include septic tank/modern toilets, water-sealed/slab latrines and pit toilets. Sanitary facilities vary between rural and urban areas. In rural areas, only 36 percent of households have hygienic toilets, compared to 81 percent of urban households. Moreover, one-third of rural households have no facility at all, compared to only 5 percent of urban households.

Tin is the most common roofing material in Bangladesh, accounting for over half of both rural and urban households. Almost three out of four households in Bangladesh live in structures with walls made of natural materials such as jute, bamboo or mud.

As a way of estimating the extent of crowding, information was gathered in the BDHS on the number of rooms households use for sleeping. Two-thirds of the households (65%) have three or more persons per sleeping room, with a mean number of 3.5 persons. There are no pronounced discrepancy between urban and rural households in the extent of crowding.

Family planning behavior of the people

The Demographic and Health Survey is conducted at every two-year interval in Bangladesh to collect information on various aspects of the family planning behavior of the people. The findings of the latest survey (1996-97) on the current use of contraception have been presented in Table 2.8.

About 50 percent of the married women of the reproductive age (10-49) were currently using contraceptives in 1996-97. Most of the users, about 84 percent, were using modern methods. The most popular method by far is the pill, which is used by 21 percent of married

Table 2.8: Percent distribution of currently married women by contraceptive method currently used, according to age, Bangladesh 1996-97

Age	Modern method								Traditional method				Not currently using	Total	Number of women
	Any method	Any modern method	Pill	IUD	Injection	Condom	Female sterilization	Male sterilization	Any trad. method	Periodic abstinence	Withdrawal	Other			
10-14	15.6	9.1	4.8	0.0	0.3	3.9	0.0	0.0	6.5	3.5	2.3	0.8	84.4	100.0	143
15-19	32.9	27.8	17.9	1.0	4.4	4.3	0.0	0.1	5.0	3.2	1.7	0.1	67.1	100.0	1252
20-24	43.1	37.6	24.2	1.5	6.4	3.2	1.7	0.4	5.5	3.0	2.0	0.4	56.9	100.0	1655
25-29	52.5	46.0	25.2	2.4	8.5	4.3	4.5	1.0	6.5	3.9	1.8	0.7	47.5	100.0	1812
30-34	63.1	54.0	26.9	2.4	7.8	5.2	11.1	0.5	9.0	6.0	2.2	0.8	36.9	100.0	1297
35-39	63.9	51.8	20.8	1.9	7.1	4.1	15.9	1.9	12.1	9.2	1.6	1.1	36.1	100.0	1031
40-44	54.7	42.7	12.1	1.4	3.9	2.8	19.0	3.5	12.0	8.0	1.9	2.2	45.3	100.0	740
45-49	35.1	27.6	3.8	1.2	1.7	1.6	16.2	3.0	7.5	4.9	1.6	1.0	64.9	100.0	520
Total	49.2	41.5	20.8	1.8	6.2	3.9	7.6	1.1	7.7	5.0	1.9	0.8	50.8	100.0	8450

Source: BDHS 1996-97:11.

women. Use of the pill accounts for 42 percent of all contraceptive use in Bangladesh. Other commonly used methods are female sterilization (8%), periodic abstinence (5%), and injection (6%). Only 4 percent of married women reported that they rely on condoms as a contraceptive method, while another 2 percent said they use withdrawal as a method. The proportion of women who use the IUD or whose husbands are sterilized is 2 percent or less.

The pattern of current use by age shows a peak at ages 30-39. The drop in contraceptive use among older women may reflect declining fecundity, while lower levels among women under 25 are to be expected since many may not yet have reached their desired family size. However, it is notable that one in five married women (16%) age 10-14 are deliberately controlling their fertility early in marriage. Similarly, women in age 15-19 report a contraceptive use rate of 33 percent.

The methods that women use vary by age. The pill and periodic abstinence are the most commonly used methods among women age 10-19. Among women in their early 20s, injection is the second most popular method after the pill. There is a gradual shift to longer-term methods among older women, so that by age 25-29, female sterilization is second to the pill; by age 35-39, it is the most widely used method. One in six married women (16%) in their late 30s and 40s has been sterilized.

The level of contraceptive use in Bangladesh has risen steadily over the last two decades. The contraceptive prevalence rate for any method has increased six fold since 1975, from 8 to 49 percent of married women (Table 2.9). Use of modern methods has grown even faster. In the roughly five years since the 1991 CPS was conducted, contraceptive use has increased from 40 to 49 percent among married women and use of modern methods has risen from 31 to 42 percent. Overall, there has been a steady rise in the contraceptive prevalence rate since 1975, with an average increase of about two percentage points a year.

In terms of specific family planning methods, the dominant change in Bangladesh since the late 1980s has been a large increase in the number of couples using the pill. The proportion of married women relying on the pill almost increased 2.5 times in the last seven years,

Table 2.9: Percentage of currently married women age 10-49 who are currently using specific family planning methods, Bangladesh, 1975-1997

Method	1975 BFS	1983 CPS	1985 CPS	1989 CPS	1989 BFS	1991 CPS	1993-94 BDHS	1996-97 BDHS
Any method	7.7	19.1	25.3	31.4	30.8	39.9	44.6	49.2
Any modern method	5.0	13.8	18.4	24.4	23.2	31.2	36.2	41.5
Pill	2.7	3.3	5.1	9.1	9.6	13.9	17.4	20.8
IUD	0.5	1.0	1.4	1.7	1.4	1.8	2.2	1.8
Injection	U	0.2	0.5	1.1	0.6	2.6	4.5	6.2
Vaginal methods	0.0	0.3	0.2	0.2	0.1	U	U	U
Condom	0.7	1.5	1.8	1.9	1.8	2.5	3.0	3.9
Female sterilization	0.6	6.2	7.9	9.0	8.5	9.1	8.1	7.6
Male sterilization	0.5	1.2	1.5	1.5	1.2	1.2	1.1	1.1
Any traditional method	2.7	5.4	6.9	7.0	7.6	8.7	8.4	7.7
Periodic abstinence	0.9	2.4	3.8	3.8	4.0	4.7	4.8	5.0
Withdrawal	0.5	1.3	0.9	1.2	1.8	2.0	2.5	1.9
Other traditional methods	1.3	1.8	2:2	2.0	1.8	2.0	1.1	0.8
Number of women	U	7662	7822	9318	10907	9745	8980	8450

U = Unknown (no information).

Sources: 1975 BFS (Islam and Islam 1993:43); 1983 CPS (Mitra and Kamal 1985:159); 1985 CPS (Mitra 1987:147); 1989 CPS (Mitra et al. 1990:96); 1989 BFS (Huq and Cleland 1990:64); 1991 CPS (Mitra et al. 1993:53); BDHS 1993-94: 45; BDHS 1996-97: 9 (Preliminary Report).

from 9 percent in 1989 to 21 percent in 1996-97. Use of injection, and condoms have increased since 1989, while use of female and male sterilization has declined slightly. Use of periodic abstinence have increased slightly since 1991.

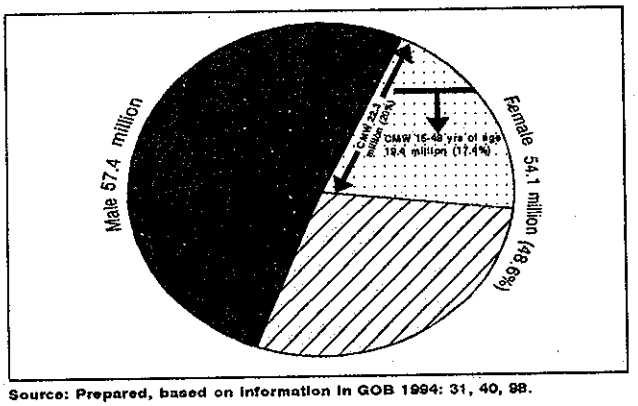
The 1996-97 BDHS data indicate that a majority of modern method users are using reversible methods as opposed to permanent methods. The shift towards modern reversible methods is largely due to a significant increase in use of the pill from 1985 to 1997, as well as to the decline in popularity of female and male sterilization.

3
Demographic Characteristics of Women: Major Issues

Women in Reproductive Age

According to the 1991 Census, the total population of Bangladesh was 111.5 million (GOB 1994: 40)[7]. Women comprised 48.6 percent (54.1 million), currently married women comprised 20 percent (22.3 million), and currently married women 15-49 years of age comprised 17.4 percent (19.4 million) of the total population (Figure 3.1).

Figure 3.1: Population and various categories of women in Bangladesh: 1991 [Total population 111.5 million (100%)]



Source: Prepared, based on information in GOB 1994: 31, 40, 98.
Note: CMW = Currently married women.

The total number of women in the age group 15-49 years comprise about 24 million, which is 21.5 percent of the total population and 39.7 percent of the total women. About 14 million of these 24 million women, i.e., about three-fifths are young aged 15-29 years (Figure 3.2). About 80 percent of the women in the age group 15-49 live in the

7 *According to GOB source, the total population of bangladesh in January 1995 is 119.7 million and the growth rate is 1.9 percent (GOB 1995:1)*

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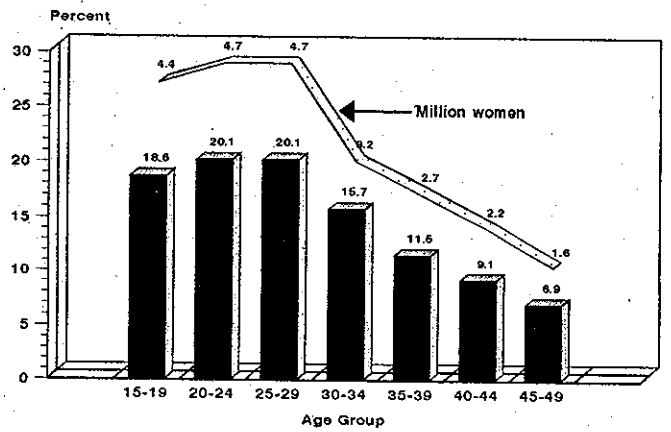
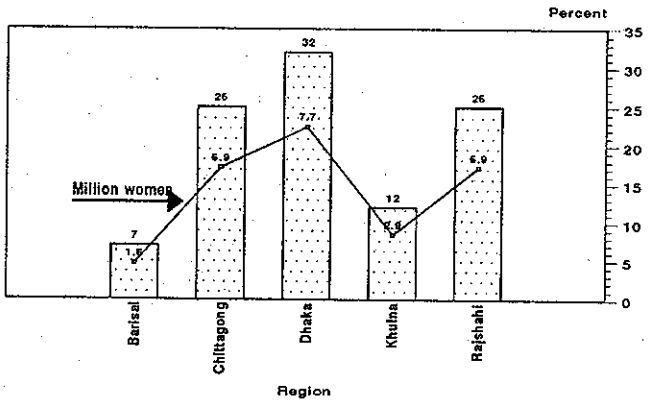
Figure 3.2: Percent distribution of women aged 15-49 in 5 year age groups: 1991 (Total: 23.6 million)



rural areas and the rest in the urban areas. About one-third of these women reside in Dhaka Division, one-quarter each in Chittagong and Rajshahi Divisions, 12 percent in the Khulna Division, and 7 percent in Barisal Division (Figure 3.3).

Figure 3.3: Percent distribution of women aged 15-49 years by administrative divisions: 1991 (Total: 23.6 million)

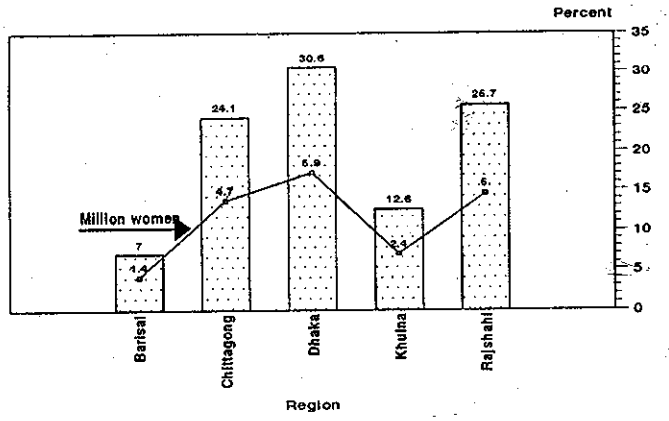


NOT FOR SUPPLY

Currently Married Women 15-49 Years

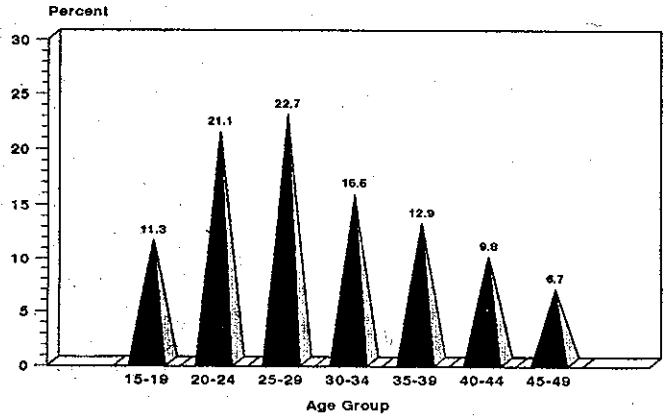
Out of about 24 million women in the age group of 15-49 years, 19.4 million (81 percent) are currently married. Among these currently married women, 81.4 percent (15.8 million) live in rural areas and the rest (3.7 million) live in urban areas (GOB 1994: 99). The proportion of women in the age group of 15-49 years who are currently married varies by administrative divisions, ranging between 77 percent in Dhaka Division and 86 percent in Barisal Division. The pattern of distribution of the currently married women in the age group 15-49 years by administrative divisions is similar to the distribution of all women in the same age group. Out of the total 19.4 million CMWRA (15-49 years) about 31 percent (5.9 million) is located in the Dhaka Division, about 26 percent (5 million) in Rajshahi Division, 24 percent (4.7 million) in Chittagong Division, about 13 percent (2.5 million) in Khulna Division, and the rest 7 percent (1.4 million) in Barisal Division (Figure 3.4).

Figure 3.4: Percent distribution of currently married women aged 15-49 years by administrative divisions: 1991 (Total CMWRA: 19.4 million)



The age distribution of the currently married women (15-49 years) shows a relatively young age pattern with one-third (6.3 million out of 19.4 million) below 25 years, and 55 percent (10.7 million) below 30 years, and only 16.5 percent (3.2 million) in the oldest age groups, of 40-49 years (Figure 3.5).

Figure 3.5: Percent distribution of CMWRA (15-49 years) by 5 year age groups: 1991 (Total CMWRA: 19.4 million)



The distribution of currently married women by age and number of children ever born is presented in Table 3.1. The mean number of children ever born to currently married women in each five-year age group, an indicator of the momentum of childbearing, indicate that about 56 percent of all currently married women aged 15-19 years have given birth to a child. On average, women have given birth to three children by their late twenties, five children by their late thirties, and almost seven children by the end of their childbearing years.

Secondary analysis based on BDHS 1993-94 shows that among the CMWRA[8] about 2.9 million (12.8%) are zero parity women, about 4.5 million (20.1%) had at least five living children, and about 11 million (49%) had more than two children. Estimates show that out of the total 22.3 million CMWRAs, 3.4 million (15.4%) are very young aged less than 20 years, and 3.2 million (14.5%) are older aged 40+ years.

The parity-wise distribution of the CMWRAs shows that in the rural areas, 33 percent women were in the higher parity groups with 4+ living children, the comparable urban figure was 27 percent. This differential was most pronounced in Chittagong division, with 55

8 *CMWRA includes married women 10-49 years of age. The total number of such women in Bangladesh is 22.3 million (Figure 3.1)*

Table 3.1: Percent distribution of currently married women age 15-49 by number of children ever born (CEB) and mean number ever born and living, according to five-year age groups, 1993-94

Age group	Number of children ever born (CEB)											Total	Number of women	Mean no.of CEB	Mean no. of living children
	0	1	2	3	4	5	6	7	8	9	10+				
15-19	44.5	42.2	12.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100	1224	0.70	0.62
20-24	10.5	28.8	33.4	19.3	6.4	1.0	0.5	0.1	0.0	0.0	0.0	100	1964	1.88	1,62
25-29	3.5	10.6	23.7	27.2	19.3	9.3	4.7	1.3	0.3	0.1	0.0	100	1911	3.04	2.59
30-34	2.7	3.7	11.5	19.3	20.9	16.9	12.8	6.9	3.7	1.5	0.2	100	1353	4.22	3.46
35-39	1.7	1.8	6.1	10.8	15.3	19.1	15.5	12.9	8.8	4.5	3.5	100	1079	5.34	4.32
40-44	0.7	1.2	3.9	4.9	8.5	14.2	15.4	16.2	13.1	8.3	13.6	100	767	6.62	5.17
45-49	0.4	0.9	2.2	4.8	7.1	10.2	13.7	16.1	14.3	12.8	17.3	100	541	7.11	5.47
Total	9.9	15.5	17.3	15.3	11.9	9.0	7.2	5.3	3.7	2.3	2.7	100	8840	3.48	2.85

Source: BDHS 1993-1994: 33.

percent and 48 percent of the women in the rural and urban areas respectively having 3 or more living children.

Newlywed Couples

The total number of newlywed couples in 1994 in Bangladesh was about 1.2 million, with about 90 percent residing in rural and 10 percent in urban areas, ranging between 7.4 percent in Barisal Division and 28.6 percent in Dhaka Division (Table 3.2). Newly-wed brides often had little family planning decision-making authority (USAID/Dhaka 1995:9). The contraceptive use rate among the newly-wed couples is very low at 9 percent implying that they are underserved (Alauddin and Islam 1995:3).

Table 3.2: Distribution of newlywed couples by place of residence, 1994

Place of residence	Number (000)			Percentage		
	Total	Rural	Urban	Total	Rural	Urban
Bangladesh	1169	1046	123	100.0	89.5	10.5
Divisions:						
Barisal	87	82	5	7.4	7.3	0.1
Chittagong	277	262	15	23.7	22.4	1.3
Dhaka	334	282	52	28.6	24.1	4.5
Khulna	156	132	24	13.3	11.3	2.0
Rajshahi	315	288	27	27.0	24.7	2.3

Source: Obtained from BBS, GOB: 1994; and GOB 1995:1.

Female Aged 13 Years in 1991

The legal female age at marriage is 18 years in Bangladesh. Females aged 13 years in 1991 will reach 18 years in 1996. The total number of 13 year old females in 1991 was 769, 468, with 77 percent rural and 23 percent urban. This is equivalent to 3.5 percent of the total married women (22.3 million) in Bangladesh. The distribution of these women ranges from 7.6 percent in Barisal Division to 30.3 percent in Dhaka Division. The delay in age at marriage of these 13 years females in 1991 in the future will have positive impact on the fertility reduction in Bangladesh. With regard to the possible policy

interventions, there is little historical evidence in Bangladesh that legislation regarding age at marriage has been effective in delaying early marriage. However, there are other measure that can be taken such as provision of opportunities for education and employment outside the home for young women that are likely to result in delayed marriage. In addition, there exists a need to extend the interval between marriage and first birth, and thereby, delay the timing of the first birth. This suggests the need for a more concerted effort in the FP program focussed on newly-wed couples.

Fertility and Birth Intervals

The future population growth could be assumed by taking women fertility and their birth intervals into the account. The conditions depicts as, if fertility decline the future growth in population will decline; if number of adolescent marriage reduce then their fertility will decline; and if birth interval increases (time space between two children) then future population will decline. Thus, fertility reference is a very important determinant for population dynamics of a country.

Fertility

The total fertility rate for the three-year period (1991-1993) was 3.4 children per women (Table 3.3). The age-pattern of fertility indicates that Bangladeshi women have children early in their childbearing age; by age 30, a woman will have given birth to over 70 percent of the children she will ever have. The crude birth rate for the whole country is 29 births per 1,000 population.

Fertility is higher in rural areas than in urban areas (Figure 3.6). The difference is especially large at ages 15-19. The total fertility rate is estimated at 3.5 in rural areas, about 30 percent higher than that in the urban areas (Figure 3.7). Fertility is highest in Chittagong Division, with the TFR of 4.0, and lowest in Rajshahi (3.0) (Figure 3.7).

Fertility has declined from 6.3 births per woman in the mid-1970s to 3.4 births for the period 1991-93. Since the period 1989-91, fertility has declined from 4.3 to 3.4 births per woman, a drop of 21 percent in a two-year period. This decline in fertility is by far the most dramatic one ever recorded in Bangladesh (Kantner, *et al.*, 1995).

Table 3.3: Age-specific and cumulative fertility rates and the crude birth rate for the three years preceding the survey, by urban-rural residence, 1993-94

Age group	Residence		
	Urban	Rural	Total
15-19	81	148	140
20-24	178	198	196
25-29	134	161	158
30-34	82	108	105
35-39	41	58	56
40-44	4	21	19
45-49	(17)	14	14
TFR 15-49	2.69	3.54	3.44
TFR 15-44	2.60	3.47	3.37
GFR	106	140	136
CBR	25.3	29.5	29.1

Source: BDHS 1993-94: 24.

Notes: Rates are for the period 1-36 months preceding the survey. Rates for age group 45-49 may be slightly biased due to truncation. Rates in parentheses are based on 125 to 249 woman-years of exposure.

TFR: Total fertility rate, expressed per woman.

GFR: General fertility rate (births divided by number of women 15-44), expressed per 1,000 women.

CBR: Crude birth rate, expressed per 1,000 population.

Figure 3.6: Age-specific fertility rates by Urban-Rural residence

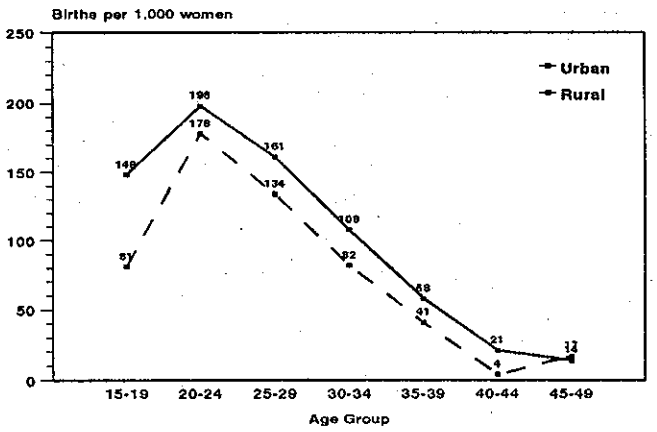
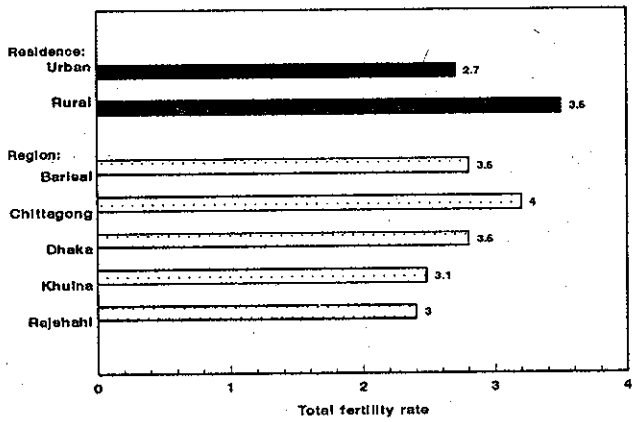


Figure 3.7: Total fertility rates by residence and regions



Adolescent Marriage and Fertility

Early childbearing, especially among adolescent (those under 20 years of age) has negative demographic, socio-economic and socio-cultural consequences. According to 1991 Census, the adolescent female population (15-19 years of age) constitute about 4.4 million, with 78 percent rural and 22 percent urban (Table 3.4). About 50 percent of the adolescent female population are married, - 53 percent in the rural areas and about 38 percent in the urban areas. Compared to the 50 percent of the adolescent female population, only 5 percent of the adolescent male population are married. Estimates, based on information in Table 3.4, show significant variations in the marital status of the teenage female population by administrative divisions, being lowest in Chittagong Division (38%) and highest in Khulna Division (75%). It might seem surprising that Chittagong Division represents both lowest contraceptive use rates (29.3%) and lowest teenage female marriage rate (38%) compared to Khulna Division with highest contraceptive use rate (55.3%) and also highest adolescent marriage rate (75%).

In Bangladesh, the adolescent fertility rate is one of the highest in the world with 171 births per 1000 women aged 15-19 years - a rate more than five times higher than that in Sri-Lanka (IPPF 1994: 8). Twenty-seven percent of adolescent women in Bangladesh are mothers

Table 3.4: Distribution of adolescents (15-19 years of age) by place of residence and sex, 1991

Place of residence	All		Married		Unmarried	
	Male	Female	Male	Female	Male	Femal
Bangladesh						
Total	4546460	4386702	225005	2174852	4318210	2137920
Rural	3508215	34200520	188040	1808983	3317447	1549168
Urban	1038245	966182	36965	365869	1000763	588752
Barisal Division						
Total	322271	312389	17785	145899	304273	163464
Rural	275552	267595	15980	128796	259388	136084
Urban	46719	44794	1805	17103	44885	27380
Chittagong Division						
Total	1099476	1097642	32035	419945	1049937	534001
Rural	822764	852507	26339	353921	777825	376184
Urban	276712	245135	5696	66024	272112	157817
Dhaka Division						
Total	1541001	1439291	83930	612088	1469893	701458
Rural	1088322	1033016	63122	459079	1029476	457851
Urban	452676	406275	20808	153009	440417	243607
Khulna Division						
Total	478036	450936	27607	339063	454506	218522
Rural	395246	350154	24750	285256	374757	166694
Urban	82790	100782	2857	53807	79749	51828
Rajshahi Division						
Total	1105676	1086444	63648	867855	1039601	520475
Rural	926331	917248	57849	584931	876001	412355
Urban	179345	169196	5799	75924	163600	108120

Source: Obtained from BBS, GOB: 1995.

and another 6 percent are pregnant with their first child. Thus, one in three such women (or about 1.5 million out of 4.4 million) has begun childbearing (Table 3.5). As expected, the proportion of women who have begun childbearing rises rapidly with age, from 11 percent of those aged 15 years to 59 percent of those aged 19 years. Those residing in rural areas, those residing in Rajshahi Division, and those with no education are also more likely than others to have begun childbearing. Adolescent childbearing is lowest in Chittagong Division (25%).

Table 3.5: Percentage of adolescents (15-19 years of age) who are mothers or pregnant with their first child, by selected background characteristics, 1993-94

Background characteristics	Percentage who are		Percentage who have begun child-bearing	Number of teenagers
	Mothers	Pregnant with first child		
Age (years)				
15	6.8	3.8	10.6	615
16	17.1	6.2	23.4	566
17	32.1	6.5	38.7	463
18	38.5	6.5	45.1	539
19	54.4	4.7	59.2	382
Residence				
Urban	16.0	4.2	20.3	321
Rural	29.0	5.7	34.8	2246
Division				
Barisal	27.4	6.2	33.6	159
Chittagong	18.0	7.1	25.1	797
Dhaka	30.2	3.4	33.7	727
Khulna	29.0	5.9	34.9	320
Rajshahi	35.4	5.6	41.0	575
Education				
No education	39.2	5.6	44.8	913
Primary incomplete	29.1	6.8	35.9	541
Primary complete	26.7	7.7	34.4	302
Secondary/ higher	12.6	3.7	16.3	849
Total	27.4	5.6	33.0	2566

Source: BDHS 1993-94:37.

Note: Numbers may not add to total due to slight differences in the factors used to inflate ever-married to all women by background characteristics.

The adolescent married women deserve special considerations, because, as a group, they are the most under-served by the national FP program. For example, the CPR among this group is only 24.7 percent compared to the national average of 44.6 percent; about 65 percent adolescent married women never used FP compared to the national average of 34 percent; fieldworker visitation rate is lower (30%) compared to the national average (38%); these women are more likely than older women to say that their husbands had more influence in FP decision making, and the total demand for FP is lowest among this group compared to the other groups (BDHS 1993-94: 44, 50, 69, 86; Islam, *et al.*, 1995: 80, 88). Compared to the women at older ages, the adolescent women run higher risk of complications during pregnancy and childbirth (including obstructed births and damaged organs), higher maternal mortality and morbidity, less likely to receive early and adequate pre-natal care, and high risk of marriage breakdown (IPPF 1994:8,9).

Birth Intervals and Open Intervals

Secondary analysis of BDHS 1993-94 indicates that birth intervals are generally long in Bangladesh (Table 3.6). Slightly over three-fifths of non-first births during the last one year occur three or more years after the previous birth, while over one-fourth (27%) took place 24-35 months after the previous birth. Only about 12 percent of non-first births during the last one year occur within an interval of less than 24 months. Younger women have shorter birth intervals than older women. The median birth interval for women age 15-19 years was 26 months compared to about 38 months for women over age 40 (BDHS 1993-94: 35). A shorter median interval was recorded for those women whose preceding sibling was dead compared to those whose prior sibling was alive. The length of birth interval was relatively lower at the low parity groups (Table 3.7). This birth interval was relatively longer in the urban than in the rural areas. In the urban areas, about two-fifths of non-first births during the last one year occurred four or more years after the previous birth, and it was one-third in the rural areas (Table 3.8).

Table 3.6: *Distribution of married women who had any child birth (other than first one) during last 12 months by the length of birth interval and age, 1993-94*

Age (years)	Length of birth interval (years)							All
	<=1	1-2	2-3	3-4	4-5	5-6	6+	
15-19	2.9 (2)	25.0 (21)	32.1 (27)	31.2 (26)	6.3 (5)	1.7 (1)	0.8 (1)	9.3 (83)
20-24	0.3 (1)	13.4 (45)	26.3 (87)	29.3 (98)	16.8 (56)	8.0 (27)	5.8 (19)	37.2 (333)
25-29	0.9 (2)	7.5 (20)	24.8 (65)	25.0 (66)	19.7 (52)	9.7 (26)	12.3 (32)	29.5 (264)
30-34	0.8 (1)	6.8 (9)	29.6 (39)	28.2 (37)	13.6 (18)	4.5 (6)	16.5 (21)	14.6 (130)
35-39	-	2.2 (1)	35.2 (22)	25.0 (15)	11.0 (7)	5.3 (3)	21.3 (13)	6.9 (62)
40-44	-	6.1 (1)	11.0 (2)	30.7 (5)	21.7 (3)	15.3 (2)	15.3 (2)	1.8 (16)
45-49	-	-	14.6 (1)	41.1 (3)	16.9 (1)	-	27.4 (2)	0.8 (7)
All	0.8 (7)	10.8 (96)	27.1 (243)	27.9 (250)	15.9 (142)	7.3 (65)	10.2 (92)	100.0 (895)

Note: Parentheses show the absolute number.

Source: Secondary Analysis of BDHS 1993-94, URC(B) 1995.

Table 3.7: *Distribution of married women who had any child birth (other than first one) during last 12 months by the length of birth interval and parity, 1993-94*

Parity	Length of birth interval (years)							All
	<=1	1-2	2-3	3-4	4-5	5-6	6+	
0	-	59.9 (2)	23.7 (1)	-	-	16.4 (1)	-	0.4 (4)
1	3.4 (2)	21.0 (15)	22.1 (16)	18.4 (13)	19.2 (14)	4.1 (3)	11.8 (8)	8.0 (71)
2	-	12.5 (38)	23.7 (71)	30.0 (90)	16.4 (49)	8.5 (26)	8.9 (27)	33.5 (300)
3	1.1 (2)	7.7 (17)	24.8 (55)	23.5 (52)	21.7 (48)	10.3 (23)	10.9 (24)	24.7 (221)
4	-	9.2 (12)	29.6 (40)	30.0 (40)	12.1 (16)	5.2 (7)	13.8 (19)	15.1 (135)
5+	1.3 (2)	7.3 (12)	36.6 (60)	33.2 (54)	9.3 (15)	3.9 (6)	8.4 (14)	18.3 (164)
All	0.8 (7)	10.8 (96)	27.1 (243)	27.9 (250)	15.9 (142)	7.3 (65)	10.2 (92)	100.0 (895)

Note: Parentheses show the absolute number.
Source: Secondary Analysis of BDHS 1993-94, URC(B) 1995.

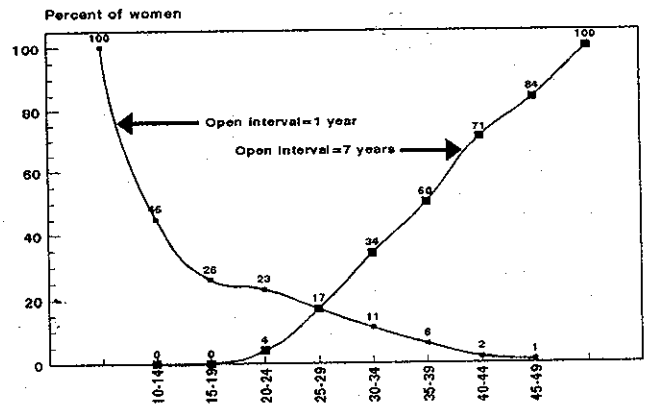
Table 3.8: Distribution of married women who had any child birth during last 12 months by place of residence and by length of birth interval, 1993-94

Place of residence	Length of birth interval (years)							All
	<=1	1-2	2-3	3-4	4-5	5-6	6+	
Bangladesh:								
Total	0.8 (7)	10.8 (96)	27.1 (243)	27.9 (250)	15.9 (142)	7.3 (65)	10.2 (92)	100.0 (895)
Rural	0.7 (6)	10.4 (82)	27.5 (218)	28.5 (226)	16.2 (129)	6.6 (52)	10.1 (80)	88.6 (793)
Urban	1.2 (1)	13.9 (14)	23.9 (24)	23.3 (24)	13.7 (14)	13.0 (13)	10.9 (11)	11.4 (102)
Divisions:								
Barisal	-	13.7 (9)	20.6 (13)	32.4 (21)	13.2 (9)	8.3 (5)	11.8 (8)	100.0 (65)
Chittagong	0.5 (1)	10.8 (29)	29.4 (79)	32.0 (86)	13.6 (36)	5.8 (16)	7.9 (21)	100.0 (268)
Dhaka	1.9 (6)	7.2 (21)	28.8 (85)	25.3 (74)	19.5 (57)	6.9 (20)	10.4 (30)	100.0 (294)
Khulna	-	15.1 (14)	25.6 (21)	23.5 (22)	12.5 (12)	9.5 (9)	13.9 (13)	100.0 (93)
Rajshahi	-	13.3 (23)	24.0 (42)	26.7 (47)	16.3 (29)	8.7 (15)	11.1 (19)	100.0 (175)

Source: Secondary Analysis of BDHS 1993-94, URC(B) 1995.
Note: Parentheses show the absolute number.

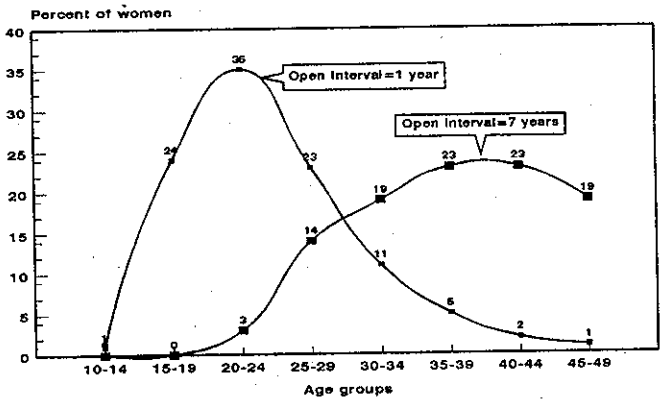
The open interval, i.e., the time between the last birth and the date of interview has shown a distinct pattern (Figure 3.8). The open interval

Figure 3.8: Open interval of 1 year and 7+ years with age of women



of 1 year declines and that of 7+ years increased as age increases. Lower open-interval is mostly associated with younger ages and longer open-interval with older ages. As shown in Figure 3.9, three-fifths

Figure 3.9: Distribution of women with open interval of 1 year and 7+ years by their age



of the women with one year open-interval are less than 25 years of old, and over three-fifths (65%) of those with seven years open-interval are over 34 years at age.

Desired (Ideal) Number of Children

Analysis of 1993-94 BDHS data shows that 58 percent of the women prefer a two-child or less than two-child family, and another 24 percent consider a three-child family as the ideal size (Table 3.9). Most importantly, among women below 30 years of age (comprising 58 percent of the total married women), 65 percent prefer a two-child family. This implies that out of 22.3 million CMWRAs in Bangladesh about 13 million women, and out of the 13 million women below 30 years of age 8.5 million women prefer a two-child family. Also, 5.3 million women prefer a three-child family.

Estimates, based on secondary analysis of 1993-94 BDHS, show that 31 percent of the women already have more living children than desired (estimated based on information in Table 3.10). Among women having two children, 36 percent want more; and among those having three children, only 16 percent want more children. The desired family size declines with an increase in the number of living children.

In 1993-94 BDHS, an interesting question was asked to the respondents "if you could choose exactly the number of children to have in your whole life, how many would that be, and how many of these would you like to be boys and girls"? Analysis of the data present an interesting choice pattern: about 60 percent of the respondents (96.6% of 60.7% of the total respondents) expressed the choice for two-child family with one son and one daughter, another 24 percent of the respondents (69.8% of 34.5% of the total respondents) expressed their choice for three-child family with **two sons** and one daughter, and only 1.2 percent expressed their choice for three-child family with **two-daughters** and one son (Table 3.11). This pattern reveals two things (a) prevalence of son preference, and (b) preference for small families.

Table 3.9: Distribution of married women by age and desired family size

Age (years)	Desired number of children 1	2	3	4	5	6	7+	Up to God	Other Answer	All
10-14	4.8 (7)	67.4 (96)	16.6 (24)	4.4 (6)	-	-	-	-	6.8 (40)	1.6 (142)
15-19	2.2 (27)	66.8 (817)	18.2 (223)	6.0 (73)	0.4 (5)	0.2 (3)	0.1 (1)	-	6.1 (75)	13.6 (1223)
20-24	1.9 (36)	64.2 (1261)	22.2 (435)	5.8 (114)	0.6 (11)	0.3 (7)	0.1 (2)	-	5.0 (98)	21.9 (1965)
25-29	2.1 (40)	59.1 (1126)	22.9 (437)	9.4 (179)	0.8 (14)	0.1 (1)	0.2 (3)	-	5.6 (107)	21.3 (1907)
30-34	1.9 (26)	51.9 (702)	26.7 (361)	11.8 (160)	0.7 (10)	0.3 (4)	0.3 (5)	-	6.3 (85)	15.1 (1351)
35-39	2.4 (26)	46.1 (496)	27.2 (293)	14.2 (153)	1.2 (13)	0.8 (8)	0.7 (7)	-	7.4 (80)	12.0 (1077)
40-44	1.7 (13)	42.2 (324)	27.5 (211)	15.3 (118)	1.4 (10)	0.9 (7)	0.6 (5)	-	10.6 (81)	8.5 (767)
45-49	1.2 (6)	38.1 (206)	30.0 (162)	15.5 (84)	0.8 (4)	0.9 (5)	0.2 (1)	0.2 (1)	13.0 (70)	6.0 (541)
All	2.0 (181)	56.0 (5028)	23.9 (2146)	9.9 (887)	0.8 (68)	0.4 (34)	0.3 (23)	0.0 (1)	6.7 (604)	100.0 (8972)

Source: Secondary Analysis of BDHS 1993-94, URC(B) 1995.
Note: Parentheses show the absolute number
0.0= Negligible.

Table 3.10: Distribution of married women by parity and desired family size

Parity	Desired family size							Up to God	Other Answer	All
	1	2	3	4	5	6	7+			
0	4.6 (53)	65.5 (753)	15.4 (177)	5.9 (68)	0.2 (3)	0.3 (4)	-	-	7.9 (91)	12.8 (1149)
1	2.9 (47)	72.5 (1162)	15.6 (250)	4.0 (64)	0.3 (5)	0.1 (2)	0.1 (2)	-	4.5 (71)	17.9 (1603)
2	1.0 (19)	62.9 (1144)	25.7 (468)	5.8 (105)	0.5 (6)	0.1 (1)	0.0 (1)	-	4.2 (76)	28.3 (1820)
3	2.2 (33)	49.1 (737)	32.7 (491)	8.9 (134)	1.0 (15)	0.2 (2)	0.2 (3)	-	5.7 (86)	16.7 (1501)
4	1.6 (17)	51.7 (565)	21.1 (231)	16.9 (185)	0.9 (10)	0.5 (5)	0.5 (6)	-	6.9 (76)	12.2 (1094)
5+	0.6 (12)	37.0 (667)	29.3 (529)	18.3 (331)	1.7 (30)	1.1 (20)	0.6 (12)	0.1 (1)	11.4 (205)	20.1 (1806)
All	2.0 (181)	56.0 (5028)	23.9 (2146)	9.9 (887)	0.8 (68)	0.4 (34)	0.3 (23)	0.0 (1)	6.7 (604)	100.0 (8972)

Source: Secondary Analysis of BDHS 1993-94, URC(B) 1995.
Note: Parentheses show the absolute number.
0.0= Negligible.

Table 3.11: Preference for son and daughter

Ideal # of sons	Ideal # of daughters 0	1	2	3+	All
0	96.3 (173)	1.4 (3)	2.3 (4)	-	2.2 (180)
1	1.3 (61)	96.6 (4701)	2.0 (97)	0.1 (5)	60.7 (4864)
2	2.3 (63)	69.8 (1934)	27.5 (761)	0.4 (12)	34.5 (2770)
3+	2.9 (6)	57.4 (117)	26.5 (54)	13.2 (27)	2.6 (204)
All	3.8 (304)	84.2 (6753)	11.4 (917)	0.6 (44)	100.0 (8018)

Source: Secondary Analysis of BDHS 1993-94, URC(B) 1995.
Note: Parentheses show the absolute number.

Child Delivery and Maternal Health

The delivery issue is very important in regard to survival of both mother and child. There are few issues which are life threating at the stage of child delivery such as prolong labor, force delivery, hand-foot-cord presentation, retained placenta, delivery by non-medical persons, abortion, etc. Although infant mortatily declined over-time but still the rate is very high compared to developed countries in the world. Also, maternal mortality and morbidity is very high prevailing in the country.

Place of and Assistance in Child Delivery

As discussed in page 28, almost all births (96%) in Bangladesh occur at home. Among the child deliveries during the last five years, 98.4 percent in the rural areas and 78.2 percent in the urban areas had taken place at home. Only 10 percent of births during the last five years (only 9.3 percent in rural and 18.7 percent in urban areas) were assisted by medically trained personnel-either doctors or nurses, trained midwives and family welfare visitors.

The current lack of explicit attention to post-partum family planning service provision is an important omission by the FP program. Considering the fact that there are about 3.5 million births in Bangladesh every year, substantial number of unwanted pregnancies and undesirable short birth intervals, the issue of post partum contraception deserves increased attention (Barkat 1995: i, Salway *et al.* 1993:14-18).

Maternal mortality and morbidity

Pregnancy and childbirth are natural processes but they are by no means risk-free. A maternal mortality ratio of 8.5 deaths per 1000 is quoted in recent WHO/UNICEF analysis, placing Bangladesh among the countries with the highest maternal mortality in Asia (WHO/UNICEF 1996). Although some reports suggest that maternal mortality has dropped from about 6 to 4.5 deaths per 1000 within the last 7 years, a lot still to be done. WHO/UNICEF estimate that more than 50,000 women die each year in Bangladesh due to causes related to pregnancy and childbirth, and the lifetime risk of maternal death, 1 in 21, is one of the highest in the world. In addition to these, even babies who initially survive the death of mother, seldom reach their first birthday.

Many women who do not die, suffer from various types of short and long term illness and disability. Due to these disabilities, women not only suffer physically, but may in many cases also loss their position in the family and in society. About one third of women suffer from such complications as haemorrhage, infection, hypertension and birth trauma after delivery (BRAC-LSHTM 1994). In spite of some progress with Vitamin-A and iodine deficiency disorders, little has been done to address the massive problem of malnutrition. About 70 percent of mothers suffer from nutritional deficiency anemia, 75 percent of pregnant women do not receive antenatal care, and about 90 percent do not receive assistance from a trained attendant at the time of delivery (Abedin 1997). High fertility, maternal nutritional status, pregnancy at a young age, harmful practices during pregnancy, childbirth and thereafter, and availability and accessibility of emergency obstetric care services are among the factors responsible for this high rate of maternal mortality and morbidity. These factors also contribute to the high rate of neonatal mortality.

Abortion

Abortion, as a determinant of fertility, has not been measured in the 1993-94 BDHS. Evidence suggests that menstrual regulation services have expanded in recent years. Official reporting system indicates that the numbers of MR cases rose from several thousands in 1979

to 100,000 in 1993 (BAPSA, 1993). According to Streatfield *et al.*, "if the undocumented estimate of 500,000 or more abortions (official plus unofficial) is correct, then this practice could be reducing the total fertility rate by as much as 0.5 children per woman" (Streatfield K. *et al.*, 1994: 134).

Also, considering that 800,000 MRs/abortions are performed every year in Bangladesh and that one MR prevents 0.65 births, this (MR) alone prevents 0.52 million births (i.e., one-tenth of all births) per year (Kamal 1992: 8). Menstrual Regulation (MR) provides a substantial support to clients having contraceptive failures. One-tenth of the MR clients report getting pregnant while using a contraceptive (Kamal *et al.*, 1990). For these women, MR serves as a potential back-up support. However, considering the high rate of failure of conventional contraceptives, it is most likely that the number of women having contraceptive failures but not seeking MR services would be higher than those seeking the services. About one-quarter of MWRAs do not even know about MR. Research findings also revealed that about one-third of the women seeking MR services at formal service facilities are rejected, and over 92 percent of these women are rejected because their pregnancies are too advanced (Begum *et al.*, 1987). The failure of these women to report to a clinic within 10 weeks of pregnancy is attributable to various reasons including their lack of knowledge about availability of MR services and the exact duration upto which MR can be performed. Follow-up surveys show that about two-fifths of the rejected MR clients try to have abortions from somewhere else and two-thirds suffer from complications (Kamal *et al.*, 1990). Thus, based on the above discussions about the various aspects of the demand for MR services, it can argued that with the increase in the level of knowledge about MR and availability of services, more women are likely to avail MR services and practice post-MR contraceptives, and thereby will contribute more in the reduction of fertility.

4
Dynamics of the Concept and Measures of Unmet Need

Unmet Contraceptive Need: Concept and Measures

Implementation of the unmet need approach requires prior knowledge about the subgroups of unmet need women. Women with unmet need have to be categorized by types to be able to determine who among them can be reached easily and may contracept in relatively short time, where are they located, and what measures are needed to motivate the other unmet need women to use contraceptives as early as possible.

The concept that eventually turned into unmet need for family planning was first explored in the 1960s, when data from surveys of contraceptive knowledge, attitudes, and practices (KAP) showed a gap between some women's reproductive intentions and their contraceptive behavior. The term that came into popular use to describe this group--reflecting the source of the data--was "KAP-gap" (Bogue 1974). Subsequently, Freedman et. al. (1972) first identified a specific group of women who might be expected to adopt contraception--even without changing their desired family size--because they said that they wanted to have no more children but were not using contraception. In 1974 Freedman and Coombs for the first time used survey data to identify the size of this group in several countries, and they found it to be substantial. They coined the term "discrepant behavior" to describe the status of such women. Similar evidence of "discrepant behavior" came from surveys of young people in the United States in the early 1970s, where it was found "a significant gap" between the need for family planning and it use (Morris 1974).

The term "unmet contraceptive need" (UCN) is conventionally defined as the percentage of currently married women in their reproductive ages who do not want additional children and yet are also not using any family planning method (Westoff 1978; Westoff and Pebley 1982; Hatmadji and Pebley 1982). The FP needs of these women are implicit: since they do not desire any more children, they may be considered

as the potential users of contraceptives in the sense that they can be converted into users if the program can devote sufficient efforts to motivate them. The contraceptive use rate in any country can be raised only by transforming the "unmet need" into "met need".

Westoff (1978) originally proposed eight measures of UCN: Measure 1 gives the proportion of all currently married women under 50 years of age, regardless of their current pregnancy or breastfeeding status, who said that they wanted no more children and who were currently not practicing any FP method. Measures 2,3, and 4 are similar to Measure 1, except that the numerator is somewhat lower. Instead of including all currently married non-using women (who do not desire additional children) in the numerator, Measure 2 considers only the currently married non-using limiter women who are non-pregnant, Measure 3 considers the currently married non-using limiters who are non-pregnant and non-breastfeeding, and Measure 4 includes only the currently married non-using limiters who are non-pregnant, non-breastfeeding and still fecund.

In the standard formulation the unmet need group does not include pregnant or amenorrheic women whose current pregnancy or recent birth was intended, even if they do not want to become pregnant again right away. Also, women who became pregnant unintentionally because of contraceptive method failure are not considered to have an unmet need for family planning in general, although they may need more reliable contraception (Westoff and Ochoa 1991).

In the last few years, the concept of unmet need has encountered various criticism. Dixon-Mueller and Germain hold that the concept is too restrictive and have pointed out, the standard formulation does not identify the full extent of need for family planning (1992). The standard formulation may be taken to suggest that all women using any contraception, whether effective or ineffective, appropriate or inappropriate, have their contraceptive needs met. In fact, however, some contraceptive users could be considered to have an unmet need if they are using an ineffective method, using a method incorrectly, or using a method that is unsafe or unsuitable for them. Pritchett (1994) questions the potential demographic importance of the phenomenon. Karen Foreit and colleagues have denoted the broader formulation the unmet need for "appropriate contraception" (1992). For example,

contraceptive users may need a more appropriate method because their current method causes side-effects or because they are using a method best suited to spacing births when in fact they want no more children.

Many women use traditional methods of contraception. In which case it may be more appropriate to define unmet need as including women using traditional methods, such as periodic abstinence and withdrawal, in addition to those using no method at all (Boulier 1985, DeGraff and DeSilva 1991). This is because contraceptive failure rates usually are particularly high for traditional methods. In countries where the prevalence of traditional method use is high, the family planning and reproductive health services include an expanded measure--"need for any or more effective contraceptive methods"--as well as a measure of unmet need for any contraceptive method.

The standard formulation does not consider unmet need among unmarried women, including unmarried young adults, who are sexually active and at risk of unintended pregnancy. Because there probably is much unmet need among unmarried sexually active women, this is a serious limitation, as Westoff has observed (1994). In fact, the level of unmet need among sexually active unmarried women may be higher than among married women. Sexually active, unmarried women--including not only the never-married but also the separated, divorced, and widowed--typically have an even greater stake in avoiding pregnancy than do married women, but in many countries they are less likely to use contraception.

While there is no generally agreed-upon concept of unmet need among men comparable to that among women, surveys could provide the basis for such a formulation (233). Men are considered to have an unmet need if they are sexually active, their partners are fecund and not pregnant, and they do not want their partners to become pregnant, but neither they nor their partners use to become pregnant, but neither they nor their partners use contraception (Mcfarlance et.al. 1993, Morris 1996).

Assessing unmet need among young adults is particularly important. Family planning and other reproductive health care programs reach relatively few unmarried young adults, women or men. While in most countries only a minority of young adults engage in sexual activity before marriage most who are sexually active have a clear need for contraception (Robey, Ross, Bhushan 1996).

Reflecting recommendations in the Programme of Action of the International Conference on Population and Development (ICPD), Cairo, 1994, Sinding and Fathalla (1995) have suggested for "a new generation" of surveys that measure unmet need more broadly, including unmet need among people who already are using contraception but may be dissatisfied with their method. Such surveys would gather both quantitative and qualitative information about women's and men's reproductive intentions and contraceptive use, experience with side-effects, discontinuation of contraceptive use, and other problems related to family planning. Such information could help extend the focus of unmet need from use of any contraception to the quality of care (Sinding and Fathalla 1995).

The implication of all of the above stated complexity is that the measures developed from answers to a few questions in an interview must necessarily be very crude. There is no information on the strength or intensity of the "unmet need"; no knowledge of whether intentions to use contraception will be implemented or not. The only such inference that can be drawn is that the motivation to avoid further childbearing is probably stronger than the wish to control the timing of the next birth. All that is really known, in effect, is that the women classified as having an unmet need for family planning have indicated some desire to control their fertility, either by postponing the next birth or by avoiding additional childbearing but, for various reasons, are not using contraception.

Women classified as having an unmet need constitute the unrealized component of the total demand for family planning. The other part of that demand consists of women currently practicing contraception. In a certain sense, these two parts are the latent and manifest components of total demand.

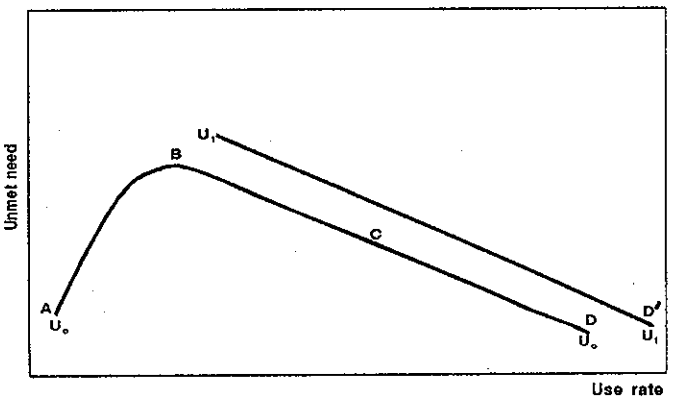
The concept of unmet need admits separation into spacing and limiting components. The former relates to fecund non-users who want more children but who wish to postpone the next birth at least two more years. Women with an unmet need for limiting also are fecund and not using but say that they want no more children. The same dichotomy is made for women currently using contraception; consequently, total demand can be disaggregated accordingly.

Although unmet need is a current status measure, there is a typical cycle of change over the fertility transition (Westoff and Bankole 1995). In the beginning, when large families are wanted, unmet need will be minimal, since there is little demand for family planning. As the transition develops and accelerates, unmet need can be expected to rise as the demand for family planning increases and outdistances available supply. Toward the end of the transition, unmet need will decline as contraception becomes readily available and acceptable and the small family norm is established. At the micro-level the time dynamics of unmet need is important involving a difference between flow and stock, as well as a difference between `stated behavior' and subsequent `actual behavior' of the unmet need wo/men.

Magnitudes of Unmet Need in Different Countries

It appears from an analysis of both cross-country and time series data on unmet need and use rate that the two are inversely related. Figure 4.1 shows the hypothetical relationship between unmet need and use rate of contraceptives. The U_oU_o curve has the shape of an inverse U and comprises four broad ranges: at or around point A where both unmet need and use rate are low, at or around B there is very high unmet need but low use rate, at or around C both unmet need and use rate are moderately high, and at or around D where unmet need

Figure 4.1: Relationship between unmet need and use rate



Source: Prepared by the authors.

is low but use rate is high. If the curve depicts an intertemporal relationship between the two variables, then the four ranges can be considered the four consecutive stages of fertility transition. In the early stage, that is, before family planning campaign or the programs for socio-economic development are launched, both unmet need and the CPR are low mainly due to high desire for children (and ignorance or apathy about the problem of rapid population growth) in the society. As the development programs and the FP campaign are launched, the society immediately reaches B when both unmet need and contraceptive use increase. Thereafter, however, the use rate increases only by satisfying the unmet need. At one stage, such as at D, the use rate becomes quite high and unmet need is reduced to a negligible level. It is difficult to increase use rate by satisfying unmet need any further. However, the society may intend to increase the use rate further in order to drastically reduce NRR. In that case, an increasing number of currently MWRAs who neither use any contraceptives nor belong to the unmet need category, i.e., who belong to the third category-women who are non-users and have no unmet need-have to be converted into users. In the diagram this will imply a rightward shift of U_1U_1 curve, so that the society can reach point D′, which may be considered another - the final - stage of fertility transition.

An attempt was made to estimate a linear equation regressing unmet need on the use rate using recent DHS data of 26 countries[9] and the following estimated equation was obtained:

$$\text{Unmet need} = 34.51 - 0.28\ (\text{Use rate})$$
$$(R^2 = 0.53)$$

Although the value of R^2 was not found to be quite high, the slope coefficient was significant at 1 percent level of significance. The equation states that a 1 percent increase in the use rate reduces unmet need by 0.28 percent. The rate of change as shown by the coefficient appears to be too low. It seems apparently that a one percent increase in the use rate will reduce unmet need by one percent. It should be mentioned, however, that over a time series data of an individual country, the

9 *The countries are Botswana, Burundi, Ghana, Kenya, Liberia, Mali, Togo, Uganda, Zimbabwe, Egypt, Morocco, Sudan, Tunisia, Indonesia, Sri Lanka, Thailand, Bolivia, Brazil, Colombia, Dominical Republic, Ecuador, Guatemala, Mexico, Peru, El Salvador, Trinidad-Tobago. The input information were obtained from Westoff and Ochoa (1991: Proceedings).*

relationship between use rate and unmet need will not be so linear and monotonic. The rate of decline in unmet need for a unit increase in the CPR is likely to be much higher in the time series data than observed in the cross-sectional data. There is another aspect of the issue which is related to the dynamics of unmet need. If unmet need is considered as a stock variable, it is quite plausible to expect that the elasticity of unmet need with respect to use rate will be approximately one (i.e., the UU curve in the figure will be a rectangular hyperbola), so that an amount of increase in use rate can be achieved only by reducing unmet need by the same amount. But unmet need can also be considered as a flow variable: some of today's unmet need women may become user tomorrow, thereby reducing unmet need by the amount of decline in use rate. At the same time, some of the women who belong to the `non-user non-unmet' category today may join the unmet need category tomorrow. All these imply that unmet need may not fall proportionately with the rise in use rate.

An analysis of the cross-country data on unmet need and use rate (Westoff and Ochoa 1991:587, Table 1) reveals that countries such as Burundi, Liberia, Uganda, Sudan, Ghana and Mali are still in the second stage of fertility transition, i.e., at or around B in the figure. They have low use rate and high UCN. On the contrary, countries such as Sri Lanka, and Thailand in Asia and Brazil and Colombia in Latin America are already in the fourth stage of transition, i.e., at or around D in the figure. These countries have satisfied most of the unmet need to raise the CPR to a considerably high level. Bangladesh and a number of other countries (Mexico, Tunisia, Indonesia, Dominican Republic, Ecuador, Peru, El Salvador, Trinidad and Tobago) are at present in the third stage, i.e., at or around C, and have moderately high unmet need and use rate.

It is thus, apparent that Bangladesh has already crossed the first two stages of fertility transition and is passing through the third stage. If most of the existing unmet need can be satisfied in Bangladesh, it will reach the fourth stage. If the country wants to achieve further increase in the CPR, which it may require to achieve its targeted fertility decline, it will have to convert a sizeable section of the "non-user and non-unmet need" category of women into users.

The total demand[10] for family planning comprises current use of methods and unmet need. In Bangladesh, the total demand is approximately 67 percent, which is quite high in the absolute sense. The developing countries where the demographic surveys are regularly conducted, can be divided into three groups: high demand countries where total demand is above 60 percent, medium demand countries where total demand lies between 40 percent and 60 percent, and low demand countries where total demand is below 40 percent. Bangladesh has already joined the group of high demand countries, which includes, among others, Brazil, Columbia, Mexico, Peru, Tunisia, Egypt, Sri Lanka, Thailand and Indonesia as well. The total demand is highest in Brazil and Columbia (more than 80 percent), the CPR is also highest in these two countries (around 65 percent). Among the high demand countries, Bangladesh along with Indonesia, Egypt and Zimbabwe have relatively low demand, and these four countries where the magnitude and the components of total demand are strikingly similar still have the prospect of raising the CPR and the total demand by approximately 20 percentage points.

A measure of satisfaction of demand can be obtained by dividing contraceptive prevalence by total demand (Westoff and Ochoa 1991:

10 *The concept of "demand" in family planning has various dimensions. Demand for FP refers to the desire or motivation of women or couples to control future fertility. This demand is directly influenced by the (potential) supply of children; i.e., the number of surviving children a woman or couple would have in the absence of parity-specific fertility regulating behavior (Bongaarts and Menken, 1983; Knodel, 1983), and a woman's or couple's demand for children. Demand for FP is said to exist when the supply of children exceeds the desired or preferred number. Indicators of demand for FP play an important role in the FP program management. Clearly a central function of program management is to provide sufficient resources to satisfy existing and anticipated future demand for FP services. Information on current and projected levels and structure of demand (the distribution of women or couple s with a demand for services by such factors as geography, socio-economic status, and demographic characteristics) are crucial to effective program planning. In addition to satisfying existing demand for FP services, program administrators must also be concerned with two additional program aspects related to the demand for services. A particularly important function of management is the conversion of latent demand into contraceptive use. There are growing numbers of women and couples whose number of surviving children exceed their expressed number of desired children (Bongaarts, 1991; Westoff and Ochoa, 1991). Program management must also be concerned with demand generation; i.e., with changing perceptions in the target population for FP services such that the social, economic, and health-related benefits of fertility regulation, as well as the costs and potential health risk of contraceptive use, become more widely understood and accepted. For both of the above purposes, indicators of the level, demographic, socio-economic and geographic distribution of demand provide valuable information for use in designing and implementing efforts to influence the level and strength of demand for program services.*

576). In Bangladesh, only 67 percent is currently being satisfied, while the score of satisfaction lies between 80 and 85 percent in Thailand, Brazil, Sri Lanka, and Columbia among the developing countries and it is as high as 95 percent in some developed countries, including the U.S. The level of demand satisfaction in Bangladesh is thus only moderate, indicating ample scope for further increase.

If the score of satisfaction could be increased to 100, i.e., all of the existing unmet need were satisfied, then total demand would equal the prevalence rate. If the CPR can be raised to 67 percent by satisfying the UCN, the TFR would decline from the present level (3.4) to slightly over 2.00 and NRR will become about 1.[11] It, thus, appears that although the CPR has already reached a critical level, it has to be raised further by another about 22 percent by satisfying the UCN if the government wants to achieve the targeted NRR by 2005.

Trend of Unmet Need in Bangladesh

The measures of UCN have been obtained for Bangladesh, using the 1993-94 BDHS data. Table 4.1 shows the extent of UCN in Bangladesh for all the measures. The table shows two sets of values of UCN for the 1993-94 data. The Westoff measures have been computed by including infecund women in the numerator in one set, and the other set has excluded the infecund women[12]. To trace change in the extent of UCN in the country over time, the last column of the table has been reproduced from Khuda and Howlader (1988: 100) to show the UCN in 1985.

As the label shows, the estimate of UCN differs from one measure to another. It varies between 12.3 percent and 23.5 percent when infecund women are included, and between 12.7 percent and 22.6 percent when infecund women are excluded. Inclusion of users of traditional methods in the numerator raises UCN by 4 to 7 percentage points in each of the four basic measures (1,2,3 and 4). If we consider

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11 *The question "what would the fertility rate be if all current unmet need are satisfied" is an important question, but one not easy to answer. Earlier research has shown that the CPR and TFR are closely connected (Mauldin and Segal 1988, Westoff 1990). The equation connecting prevalence with fertility can be used to predict TFR implied by the prevalence. However, there are numerous problems (Details see Westoff and Ochoa 1991, Proceedings).*

12 *Since Measure 4 of Westoff excludes the infecund women from the UCN category, this group of women were not included in UCN even in the first column.*

Measure 1 as the most appropriate convenient measure, a widely used measure in the cross-country analysis, it can be said that around 23 percent of the currently married women had unmet need for family planning in Bangladesh.

The unmet need in Bangladesh shows a declining trend. Between 1985 and 1993-94, it has declined by about 8 percentage points according to Measure 1 and more according to the other measures. The trend is quite expectedly so in the transition stage. As the FP campaign becomes intensified over time, the proportion of the MWRAs using contraceptive methods increases and thereby more and more unmet need is met. However, in the last stage of the development of FP program when the program matures and the fertility transition is complete, unmet need can increase, even if the CPR is already very high, due to drastic increase in the proportion of MWRAs who want to limit or space childbirth. The existing trends in UCN and the CPR together endorse the observation that Bangladesh has reached the middle stage of demographic transformation, i.e., fertility transition is underway in Bangladesh (Caldwell 1994; Khuda and Hossain 1995).

Table 4.1: *Measures of unmet contraceptive need in Bangladesh*

Measures	1993-94 BDHS Data		1985 CPS Data
	Including infecund women	Excluding infecund women	
1	23.5	22.6	30.2
1A	29.5	28.7	39.9
2	18.8	17.8	29.5
2A	24.8	24.0	34.6
3	9.4	8.1	27.9
3A	13.8	12.7	33.0
4	7.9	8.1	18.
4A	12.3	12.7	26.2

Source: Computed from BDHS 1993-94; and Khuda and Howlader 1988.

As delineated at the outset of this chapter that the concept of UCN has undergone enormous change in the recent years. The implicit aim of propounding the concept was to help the program managers

to identify the target women and assess the magnitude of the prospective demand for FP services so as to determine the quantum of supplies in the future years. Therefore, by applying the same logic one can include in the UCN category also other women who are in implicit need of program services and whom the program should reach immediately. The currently married non-using women who want additional children but who want to delay childbirth can be considered to be in need of FP methods at present. The currently married non-user women who are pregnant or are in the post partum amenorrhoeic period also need medical care and services which, if provided, will reduce maternal and childhood mortality, which will, in turn, induce them to use contraceptives in the future. The user women who are currently having side-effects or health hazards due to use of a FP method also need advice and medical services from the program. In order to include all these subgroups of women in the UCN group, the concept of UCN should be broadened: it should refer to the proportion of all currently married fecund women in their reproductive ages who are not using any method and who do not want any childbirth at present, who are pregnant or are in the postpartum amenorrhoeic period, and who are using a FP method but suffering from side-effects and health hazards due to use[13].

Not using effective methods or most appropriate contraceptive, or not using correctly.

Effects analysis in Chap. 5, because women who want to delay or limit and are users of temp. methods, underlate need for more permanent methods.

13 *See Proceedings, Volume 1, Demographic and Health Surveys World Conference, 1991 for the new definition of unmet need.*

5
Unmet Contraceptive Need - Analysis of the 1993-94 Bangladesh Demographic and Health Survey

Magnitudes of Unmet Need

Despite rapid increase in the CPR during the last two decades, the CPR is still far below the desired level in Bangladesh. The CPR has to be raised to around 70 percent, if the country has to achieve replacement level fertility by 2005. Given the annual rate of increase in the CPR during the last two decades, it appears to be difficult that the program would be able to increase the CPR by another 20-25 percentage points by the next decade. This is more so because as the program attains relative maturity, it would be increasingly difficult for the program to get each unit of additional increase in the CPR, given its present strategy. Therefore, the program is urgently required to change its strategy in order to achieve its ~~good~~ goal during the stipulated period. Recognizing this challenge, the Government of Bangladesh have already developed a new strategy based on clients need (GOB 1996).

The concept of UCN which is widely used now-a-days is significantly different from the concept reflected in any of the measures presented in Table 4.1. Westoff and Ochoa (1991) have lately defined the concept as the estimate of the proportion of married, fecund women currently not using any method of contraception who report wanting either to postpone or avoid further childbearing, as well as the proportion of the currently pregnant or amenorrheic women who report either that they had wanted to wait or never to have had any additional childbirths. The proportion of the currently pregnant and amenorrheic women who wanted to space or limit births has been included in the category of UCN women on the reasoning that these women became pregnant because their need for family planning had not been met. The currently

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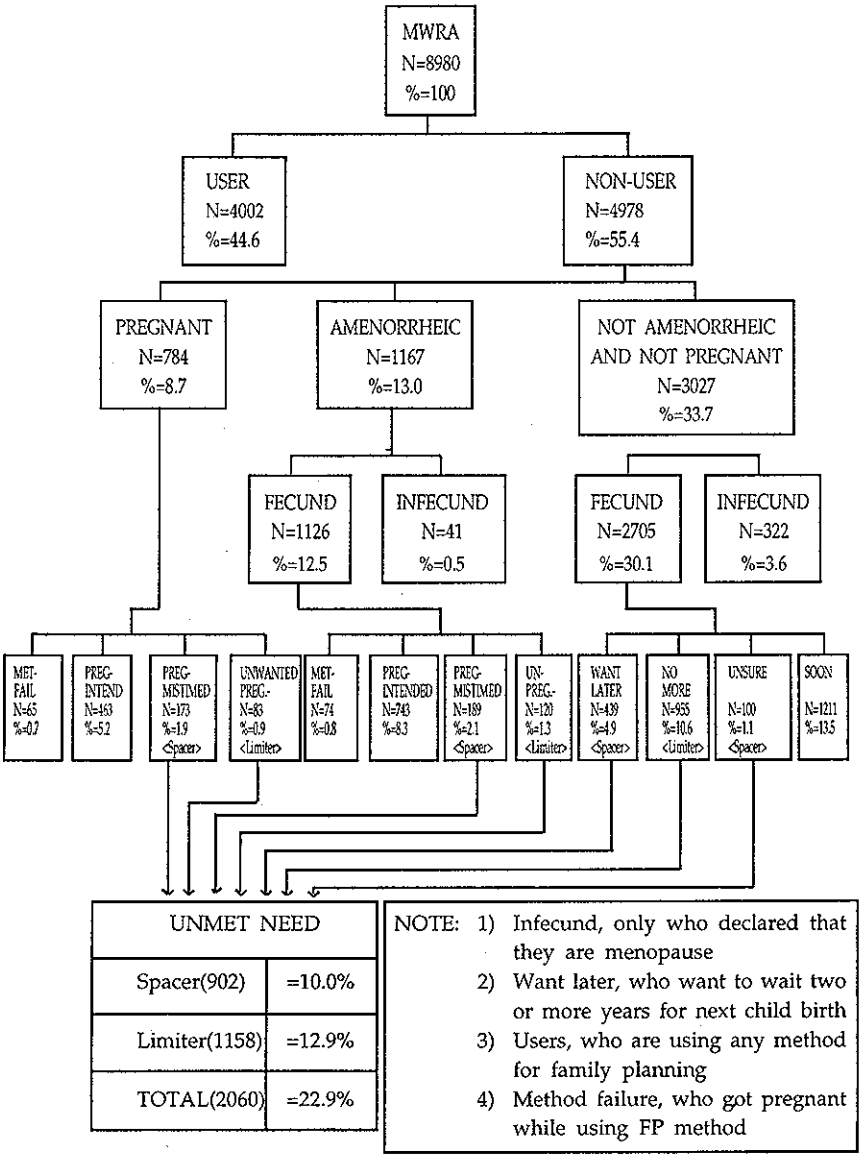
pregnant or amenorrheic women who became pregnant due to method failure have been excluded from the unmet need category, because unmet need is by definition, confined to non-users. The women who experienced method failure can not be considered to be in need of "a contraceptive method" *per se;* in fact, what they need is a better contraceptive method or improved program service. The same reasoning also applies to the user women who report side-effects or health hazards resulting from use of a method, and hence, they have also been excluded from the UCN category.

We have also utilized the concept as propounded by Westoff and Ochoa to calculate the extent of unmet need in Bangladesh. As per the operational definition of the concept, the UCN includes: (a) women who are fecund, non-pregnant, and non-amenorrheic, but who currently do not use any method and want either to limit or to delay childbirths, or are unsure about whether or when they want to have births; (b) pregnant women whose pregnancy was mistimed or unintended; and (c) amenorrheic women whose latest pregnancy was mistimed or unintended.

Figure 5.1 presents a flow chart showing the varieties of subgroups of MWRAs which constitute unmet need. The figure also shows the estimated proportion of women in each subgroup, either included in or excluded from unmet need, magnitude of unmet need, and the magnitude of the two components - limiters and spacers - of unmet need, which existed in Bangladesh at the time of the last demographic and health survey (1993-94).

The estimated unmet need is 22.9 percent, which include 12.9 percent of women who wanted to limit (unmet need for limiting births) and 10 percent of women who wanted to delay childbirths (unmet need for spacing births). Among the three subgroups of non-users women, the subgroup of the non-amenorrheic non-pregnant women is most important, accounting for 15.5 percent unmet need. The pregnant women constitute 2.8 percent, and the amenorrheic women 3.4 percent unmet need.

Figure 5.1: Unmet contraceptive need among the MWRA in Bangladesh, 1993-94



UNMET NEED	
Spacer(902)	=10.0%
Limiter(1158)	=12.9%
TOTAL(2060)	=22.9%

NOTE:
1) Infecund, only who declared that they are menopause
2) Want later, who want to wait two or more years for next child birth
3) Users, who are using any method for family planning
4) Method failure, who got pregnant while using FP method

Source: Prepared by the authors, based on secondary analysis of BDHS 1993-94, URC(B) 1995.

MET = Method; PREG-Pregnant; and UN = Unwanted.

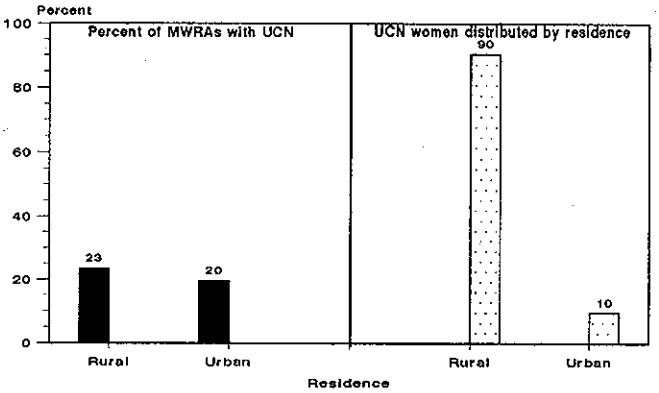
Differential in Unmet Need Women: Demographic and Economic Characteristics

In order to identify the subgroups of women which have relatively high unmet need, they have been distributed by a number of characteristics: place of residence, age, parity, open birth interval, education, and employment.

Place of Residence

Ninety percent of unmet need women of the country live in the rural areas (Figure 5.2). This indicates that most of the urban women who do not want any more children have already become user of FP

Figure 5.2: Distribution of UCN women by Rural/Urban residence

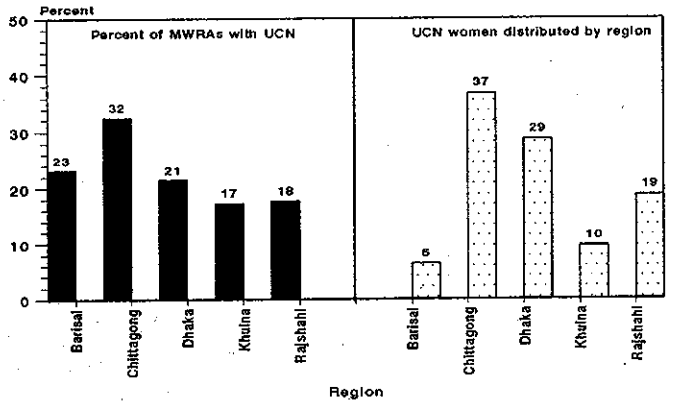


Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

methods, while 90 percent of rural women who do not desire additional children do not use any method either, possibly because the program has not so far devoted the required efforts to motivating a large number of women in the rural areas, or because it is more difficult to conduct the program activities in many of the rural areas than in the urban areas.

More than 65 percent of unmet women live in Chittagong and Dhaka divisions, Chittagong alone containing 36 percent (Figure 5.3). The

Figure 5.3: Distribution UCN women by region



Source: Secondary Analysis of BDHS 1993-94, URC(B) 1995.

proportion of unmet women in Rajshahi is also considerable - 19 percent. Unmet need in the other two divisions, Khulna and Barisal, is low. In each division except Dhaka more than 90 percent of UCN women live in the rural areas (Table 5.1). In Dhaka division the concentration of the unmet women in the urban areas is slightly high - 15 percent, which is due to the large urban centers including the capital city being located in this division.

Figures 5.2 through 5.4 show the distribution of UCN women by place of residence. Figure 5.2 has two parts: the righthand part shows the distribution of the unmet need women by rural-urban residence and the lefthand part shows the proportion of MWRAs who have UCN in the rural and urban areas. It is evident that although 90 percent of unmet need women live in the rural areas, only 23 percent of rural women have unmet need.

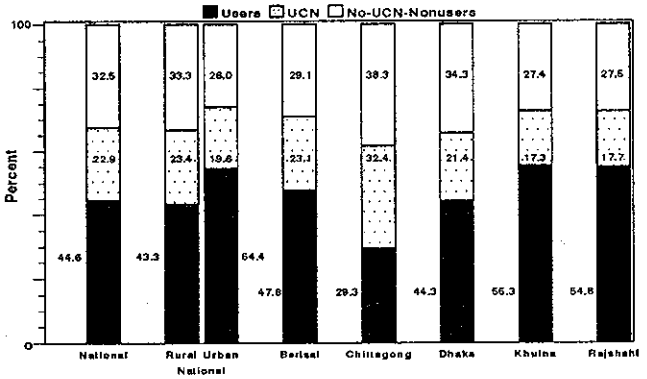
Figure 5.3 summarizes the distribution of unmet need women by administrative regions. As exhibited in the left part, more than 20 percent of MWRAs have unmet need in Chittagong, Barisal and Dhaka divisions, while the proportion is slightly less in Khulna and Rajshahi. The righthand part depicts that the UCN women are concentrated mostly in the rural areas of Chittagong, followed by Dhaka and Rajshahi. Figure 5.4 shows the total demand for family planning is high in Khulna

Table 5.1: *Distribution of currently married women (MWRAs) who report unmet need by place of residence and age, 1993-94*

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	15.4 (317)	20.2 (416)	18.2 (375)	15.2 (313)	13.4 (276)	10.2 (210)	7.4 (152)	100.0 (2060)
Rural	15.7 (292)	20.1 (374)	17.9 (334)	14.9 (278)	13.5 (251)	10.4 (194)	7.4 (137)	90.4 (1861)
Urban	12.7 (25)	21.1 (42)	20.7 (41)	17.7 (35)	12.6 (25)	7.8 (15)	7.6 (15)	9.6 (199)
Rural by Divisions:								
Barisal	15.5 (19)	22.7 (28)	11.9 (15)	17.5 (22)	13.4 (17)	14.4 (18)	4.6 (6)	95.5 (125)
Chittagong	10.8 (75)	17.7 (129)	21.6 (151)	17.1 (119)	14.4 (100)	11.8 (82)	6.6 (46)	92.0 (696)
Dhaka	18.4 (92)	21.4 (107)	16.6 (83)	13.5 (68)	13.7 (68)	8.9 (44)	7.6 (38)	85.1 (501)
Khulna	24.7 (45)	19.3 (36)	12.2 (22)	11.3 (21)	11.7 (21)	9.9 (18)	11.0 (20)	92.7 (184)
Rajshahi	16.9 (60)	22.6 (80)	17.8 (63)	13.7 (49)	12.4 (44)	8.9 (32)	7.8 (28)	92.1 (355)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Figure 5.4: Distribution of users, UCN and no-UCN-nonusers women by region and Rural/Urban residence



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

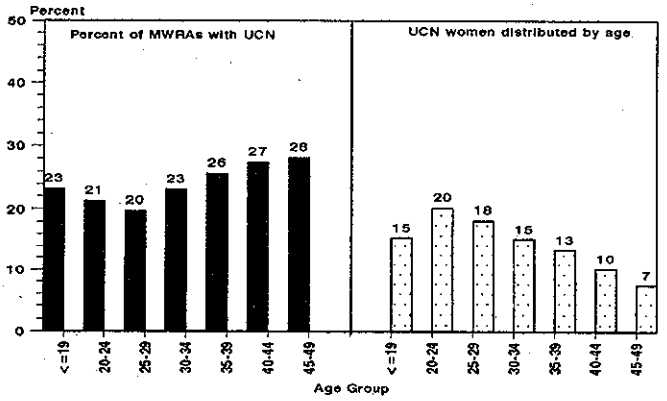
and Rajshahi where there is high use rate and low UCN (i.e., point D in Figure 4.1). Barisal and Dhaka divisions have moderate amount of total demand where both use rate and UCN are moderately high (point C in Figure 4.1). Chittagong division has the lowest demand for family planning, where use rate is low and UCN is high (point A in Figure 4.1).

The unmet need women can be broadly divided into two groups: spacers and limiters. Figure 4.1 has shown that among the 22.9 percent of MWRAs who have unmet need, 10.0 percent were spacers and 12.9 percent limiters. The proportion of unmet need women who want to delay birth is higher than the proportion of unmet need women who do not want additional child in the rural areas compared to the urban areas (Annex Tables 3 and 4). However, the number of limiters is higher than the number of spacers in all the regions of the country.

Age Group of MWRA

The unmet need women are concentrated in the lower age-groups: women <30 years comprise more than 50 percent of UCN women (Figure 5.5). The women of these age groups are relatively young. Most of the young women are likely to have demand for additional children in rural Bangladesh. Therefore, the high unmet need in the

Figure 5.5: Distribution UCN women by age group



Source: Secondary analysis of BDHS 1993-94, URC(B).

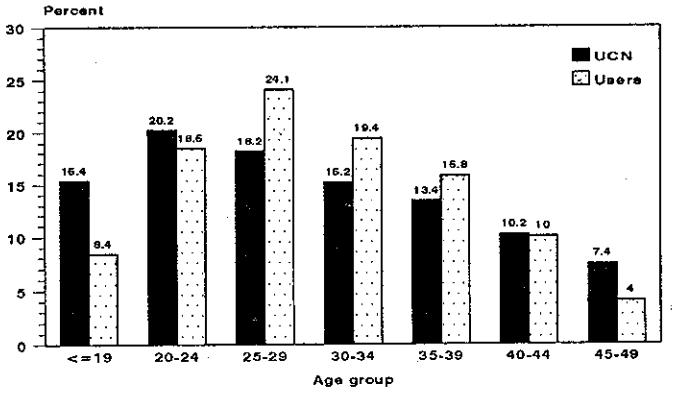
younger age groups indicates that a considerable number of pregnant and breastfeeding women are included in the category of UCN women of these age groups.

The proportion of UCN women rises with the age upto 20-24 years, and then gradually declines. The pattern is the same in both rural and urban areas. Also, it is almost similar in all the regions of the country.

As shown in Figure 5.6 the majority of both users and unmet need women are found in the three age groups between 20 and 35 years. However, the 25-29 years age group contain the highest proportion of users, followed by 30-34 years age group and 20-24 years age group. On the other hand, the 20-24 years age group contain the highest proportion of unmet need, followed by the 25-29 years age group and 30-34 years age group (also below 19 years age group).

The distribution of users and those with unmet need by their age has been shown in Figure 5.7, with the unmet need women have been superimposed on the users. Both distributions are inverted U-shaped: the proportions of users as well as unmet need increase upto certain age group, and then start dwindling. The reason for both the two

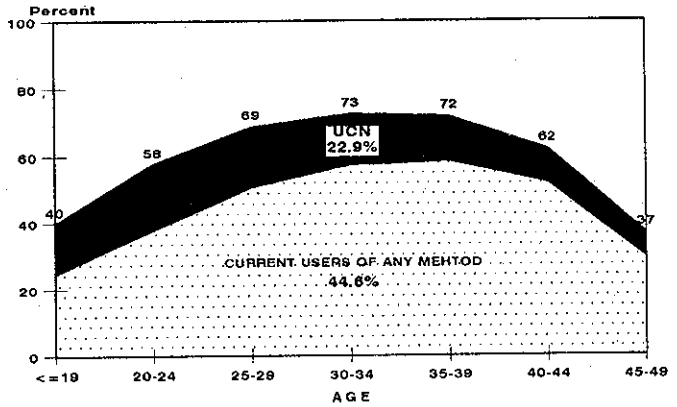
Figure 5.6: Distribution of total users and UCN women by age group



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

curves having an inverted 'U' shape is almost the same. As age increases, more and more women will want to stop or delay child birth, and therefore, will either use contraceptives or remain in the unmet need category. However, beyond certain age group, more and more women will consider themselves infecund or will have infrequent sex so that they will stop using any method and thus the use rate

Figure 5.7: Percentage distribution of current users and UCN women by age



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

will fall. The UCN will also decline in the later age groups due to increased self-assessed infecundity among the women. The total demand for family planning is thus higher among middle aged women (25-39 years) than those younger and older.

Tables 5.2 and 5.3 show the age distribution of spacers and limiters respectively. Two-thirds of spacers are concentrated in the first three age groups. The pattern is same in all the regions. On the contrary, limiters are concentrated in later age groups: three-fifths are concentrated in the three age groups between 30 and 44 years. However, except in Barisal division, there is a considerable proportion of limiters as well as of spacers in all the regions of the country, among those aged 25-29 years.

Parity distribution

The pattern shown by the parity distribution of unmet need women is similar to the pattern of their age distribution: the proportion of unmet need women first increases and reaches its peak at 2 children and then continuously declines (Table 5.4). The proportion of UCN women first rises with the number of living children because, as the number of children increases, more and more women do not want additional children. The proportion declines in the higher parity groups for a different reason. Most of the women who have more than 2 children are likely to be the women who are in the later age groups and who consider themselves infecund. That is why they do not want any more children and also do not use any FP method.

More than 50 percent of the unmet need women are located in the lower parity groups (2 children or less). The pattern of parity distribution of unmet need women is almost the same in both rural and urban areas, and also in all the regions of the country (Table 5.4).

Figure 5.8 shows the proportion of unmet need women in each parity group in the lefthand part and the distribution of unmet need women by parity in the righthand part. The left part shows that the proportion of women who have unmet need increases as parity increases. The righthand part depicts as parity increases, unmet need increases upto 2 children and then declines. Figure 5.9 depicts the proportion of

Table 5.2: Distribution of unmet need women who do not want to be pregnant now but want children in uture [Spacer] by place of residence and age, 1993

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	34.1 (307)	33.0 (298)	20.8 (187)	7.3 (66)	3.3 (30)	1.2 (10)	0.3 (3)	100.0 (902)
Rural	34.4 (285)	32.5 (270)	20.3 (168)	7.7 (64)	3.5 (29)	1.3 (10)	0.4 (3)	91.9 (829)
Urban	30.5 (22)	38.2 (28)	26.5 (19)	3.0 (2)	1.8 (1)	-	-	8.1 (73)
Divisions:								
Barisal	26.2 (20)	36.3 (20)	17.0 (9)	7.0 (4)	2.3 (1)	-	1.2 (1)	100.0 (55)
Chittagong	24.4 (82)	30.1 (101)	26.3 (88)	11.8 (40)	5.5 (19)	1.6 (5)	0.4 (1)	100.0 (337)
Dhaka	38.2 (97)	34.7 (88)	19.6 (50)	4.1 (10)	2.1 (5)	1.3 (3)	-	100.0 (254)
Khulna	51.3 (46)	31.5 (28)	10.7 (10)	4.3 (4)	2.3 (2)	-	-	100.0 (89)
Rajshahi	37.4 (62)	36.1 (60)	18.0 (30)	5.1 (9)	1.7 (3)	1.1 (2)	0.6 (1)	100.0 (167)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.3: Distribution of unmet need women who do not want to be pregnant at all in future [Limiter] by place of residence and age, 1993

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	0.9 (10)	10.2 (118)	16.2 (188)	21.3 (247)	21.2 (246)	17.2 (199)	12.9 (150)	100.0 (1158)
Rural	0.7 (7)	10.1 (105)	16.1 (166)	20.7 (214)	21.5 (222)	17.8 (184)	13.0 (134)	89.2 (1033)
Urban	2.3 (3)	11.0 (14)	17.3 (22)	26.2 (33)	18.8 (24)	12.3 (15)	12.0 (15)	10.8 (126)
Divisions:								
Barisal	0.8 (1)	12.6 (10)	8.8 (7)	25.7 (19)	21.5 (16)	23.7 (18)	6.8 (5)	100.0 (76)
Chittagong	0.5 (2)	7.8 (33)	17.5 (74)	21.1 (89)	21.4 (90)	19.7 (83)	11.9 (50)	100.0 (420)
Dhaka	1.7 (6)	11.9 (40)	15.8 (53)	21.6 (72)	21.9 (73)	14.0 (47)	13.2 (44)	100.0 (335)
Khulna	0.9 (1)	9.5 (10)	14.4 (16)	19.4 (21)	20.0 (22)	17.5 (19)	18.5 (20)	100.0 (109)
Rajshahi	0.4 (1)	11.8 (26)	17.8 (39)	20.8 (46)	20.3 (44)	15.0 (33)	13.9 (30)	100.0 (219)

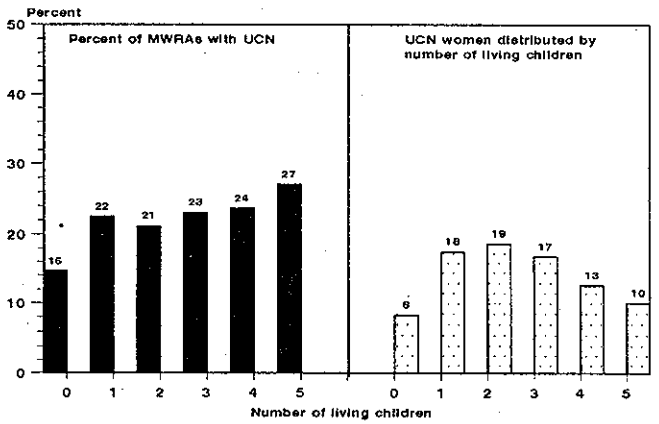
Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.4: *Distribution of currently married women who report unmet need by place of residence and parity, 1993-94*

Place of residence	Parity						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	8.2 (168)	17.5 (360)	18.6 (384)	16.8 (346)	12.5 (258)	26.4 (544)	100.0 (2060)
Rural	8.3 (154)	17.1 (318)	18.2 (338)	16.9 (315)	12.7 (236)	26.9 (501)	90.4 (1861)
Urban	7.2 (14)	20.9 (42)	23.0 (46)	15.9 (32)	11.3 (22)	21.6 (43)	9.6 (199)
Divisions:							
Barisal	11.0 (14)	15.4 (20)	13.5 (18)	15.2 (20)	13.5 (18)	31.4 (41)	100.0 (131)
Chittagong	6.0 (45)	14.0 (106)	16.9 (128)	17.4 (132)	14.0 (106)	31.7 (240)	100.0 (756)
Dhaka	8.0 (50)	21.1 (124)	19.8 (117)	16.9 (100)	10.4 (61)	23.3 (137)	100.0 (589)
Khulna	11.9 (24)	20.8 (41)	19.3 (38)	13.2 (26)	12.2 (24)	22.6 (45)	100.0 (198)
Rajshahi	8.9 (34)	17.8 (69)	21.7 (84)	17.8 (69)	12.7 (49)	21.1 (82)	100.0 (386)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

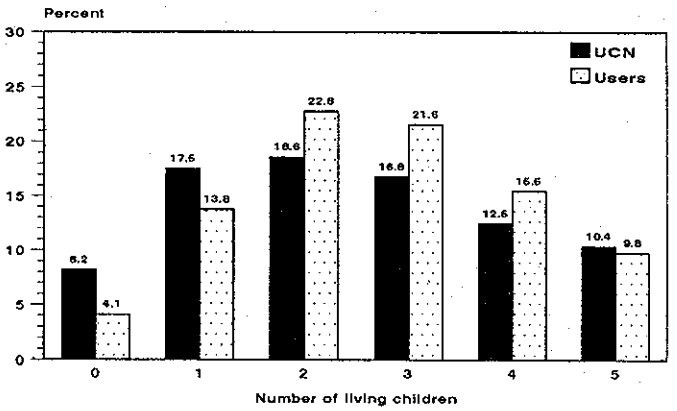
Figure 5.8: Distribution of UCN women by number living children



Source: Secondary analysis of BDHS 1993-94, URC(B).

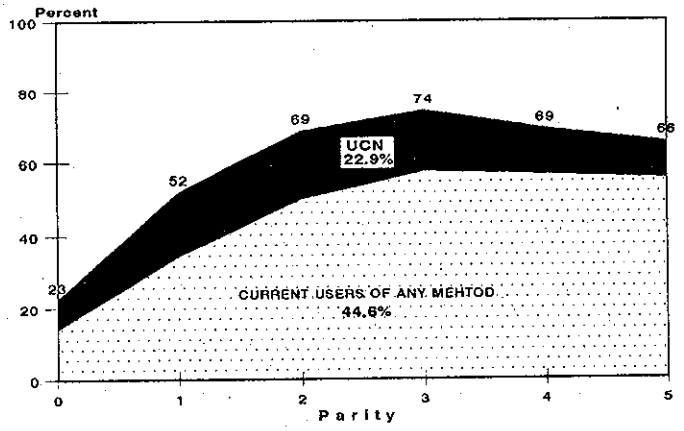
users and that of unmet need women side-by-side for each parity group. The 2-children group contain the highest proportion of both users and unmet need women. The total demand is highest in the 3-children group (Figure 5.10). In Figure 5.10 the parity distribution of unmet need women has been superimposed on the parity distribution of users. Both distributions are inverted U-shaped.

Figure 5.9: Users and UCN women: number of living children



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

Figure 5.10: Percentage distribution of current users and UCN women by parity



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

Tables 5.5 and 5.6 display the parity distribution of spacers and limiters. Quite expectedly, the spacers are concentrated in the lower parity groups and the limiters in the higher parity groups. The 2-children and 3-children groups contain a considerable proportion of both spacers and limiters. Two important findings are evident in the two tables: first, even in the zero parity group, there is a considerable proportion of spacers (Table 5.5) and second, even in the 2-children group a low-parity group, there is a considerable proportion of limiters (Table 5.6).

Education of Women

The lefthand part of Figure 5.11 shows that the proportion of the women with unmet need declines with increased level of education. The righthand part of the figure shows that the unmet need women are mostly concentrated among the uneducated women. The proportion of unmet need women falls substantially even as the level of education rises to the primary level, and any further increase in the educational level reduces unmet need by an insignificant level. The relationship between education and unmet need is in the expected direction. As educational level increases, more and more women become users of FP methods to avert or delay childbirth, and thus, as more and more 'need' is satisfied, unmet need declines.

Table 5.5: Distribution of unmet need women who do not want to be pregnant now but want children in future [Spacer] by place of residence and parity, 1993-94

Place of residence	Parity						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	18.2 (164)	35.6 (321)	21.2 (191)	13.1 (119)	6.5 (59)	5.4 (49)	100.0 (902)
Rural	18.3 (151)	34.7 (287)	21.1 (175)	13.3 (111)	6.8 (56)	5.8 (48)	91.9 (829)
Urban	17.0 (12)	46.0 (34)	21.9 (16)	10.8 (8)	3.4 (2)	0.9 (1)	8.1 (73)
Divisions:							
Barisal	26.3 (14)	31.6 (17)	19.3 (11)	14.1 (8)	5.2 (3)	3.5 (2)	100.0 (55)
Chittagong	13.3 (45)	28.2 (95)	23.1 (78)	15.4 (52)	10.0 (34)	10.0 (34)	100.0 (337)
Dhaka	18.8 (48)	43.2 (110)	19.8 (50)	12.6 (32)	3.4 (9)	2.1 (5)	100.0 (254)
Khulna	26.5 (24)	41.7 (37)	20.2 (18)	6.7 (6)	3.7 (3)	1.1 (1)	100.0 (89)
Rajshahi	20.0 (33)	37.0 (62)	20.6 (34)	12.5 (21)	6.0 (10)	4.0 (7)	100.0 (167)

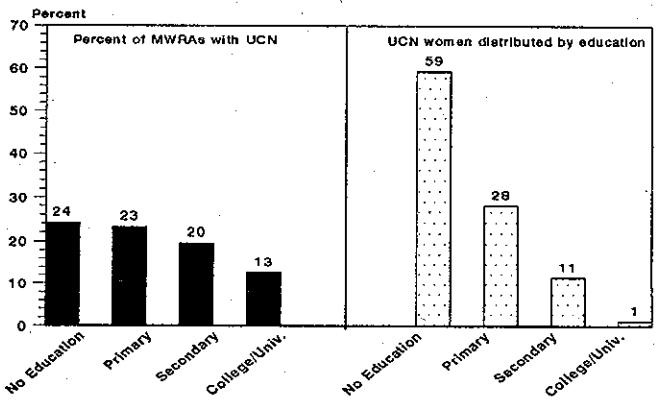
Note: Parenthesis show the absolute number.
Source Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

*Table 5.6: Distribution of unmet need women who do not want to be pregnant at all in future [**Limiter**] by place of residence and parity, 1993-94*

Place of residence	Parity						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	0.4 (4)	3.3 (39)	16.7 (193)	19.7 (228)	17.2 (199)	42.8 (495)	100.0 (1158)
Rural	0.2 (2)	3.0 (31)	15.8 (163)	19.8 (204)	17.4 (179)	43.9 (453)	89.2 (1033)
Urban	1.5 (2)	6.3 (8)	23.7 (30)	18.8 (24)	15.9 (20)	33.7 (42)	10.8 (126)
Divisions:							
Barisal	-	3.8 (3)	9.3 (7)	16.0 (12)	19.4 (15)	51.6 (39)	100.0 (76)
Chittagong	0.2 (1)	2.5 (11)	11.9 (50)	19.1 (80)	17.2 (72)	49.1 (206)	100.0 (420)
Dhaka	0.7 (3)	4.2 (14)	19.8 (66)	20.2 (68)	15.7 (53)	39.3 (132)	100.0 (335)
Khulna	-	3.6 (4)	18.6 (20)	18.6 (20)	19.1 (21)	40.1 (44)	100.0 (109)
Rajshahi	0.4 (1)	3.2 (7)	22.5 (49)	21.8 (48)	17.9 (39)	34.2 (75)	100.0 (219)

Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.
Note: Parenthesis show the absolute number.

Figure 5.11: Distribution of UCN women by education



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

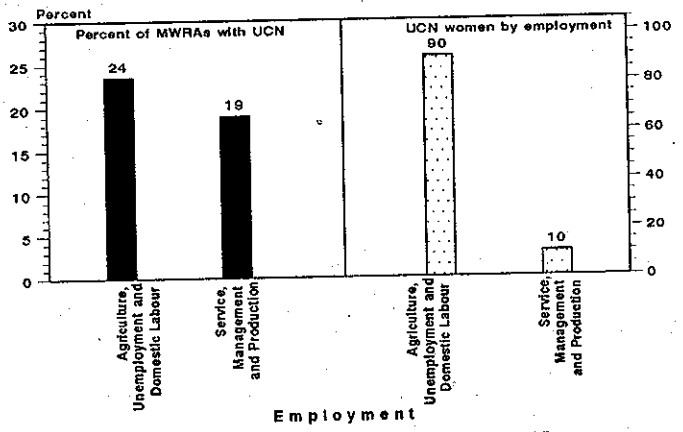
Employment Status of Women

Figure 5.12 shows that increased employment in the `modern' sector reduces the extent of unmet need. The lefthand part of the figure shows that the proportion of women who have unmet need is lower among the women employed in the service, management and production (industrial) sectors than among those who are either unemployed, employed in agriculture, or are in domestic labor. Ninety percent of UCN women are concentrated among those who are unemployed, employed in agriculture, or in domestic activities. The most important reason for such a relationship is that the women employed in the modern sector are also those who are educated. Thus, the relationship between education and unmet need greatly determines the relationship between employment status and unmet need.

Past Use of Contraceptives

A considerably high proportion of the women with unmet need had used some FP method in the past. That a proportion of the past users have discontinued use is a pointer to the program manager to improve quality of care to address the problems of those discontinuing use because of side-effects.

Figure 5.12: Distribution of UCN women by employment

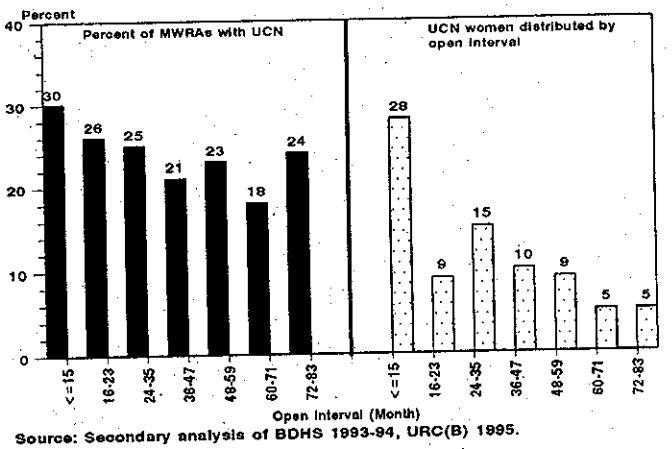


Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

Open Birth Interval

Figure 5.13 shows the open interval distribution of unmet need women in its righthand part and the proportion of MWRAs who have unmet need for each open interval group in the lefthand part. It is evident from the pattern of open interval distribution that the unmet need

Figure 5.13: Distribution of UCN women by open interval



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

women are heavily concentrated among mothers of young children (less than 15 months old). This group is likely to contain a large number of amenorrheic women who do not want another pregnancy, at least not soon. A large number of these women do not use any contraceptive method mainly because they think that they are not currently exposed to the risk of pregnancy. However, the most fecund women among them can conceive soon, after the first ovulation, and hence, they have need for contraception. The proportion of unmet need women falls substantially as interval increases from 15 months. The proportion of unmet need women is quite high in the 48+ interval group only because this group has a number of subgroups in it. In fact, unmet need declines and becomes increasingly negligible as the lengthening of interval increases within the 48+ group (not shown in figure). As the interval increases, some women become users, and some become less fecund or less sexually active so as not to use any method. The lefthand part shows that the proportion of MWRAs having unmet need declines as the interval increases.

It appears from both parts of the figure that the unmet need women are highly concentrated in the shorter interval groups (less than two years), i.e., a high proportion of women who had any childbirth in the recent months have unmet need.

Other Issues Related to Unmet Need

We can now turn to discussing the important issues which affect the nature and extent of unmet need. The issues have been examined by unfolding some characteristics of the MWRAs who are either already user or have unmet need. A prior knowledge about the characteristics of women would be helpful to the program for categorization of women into unmet need subgroups and devoting differential efforts to them in order of priority.

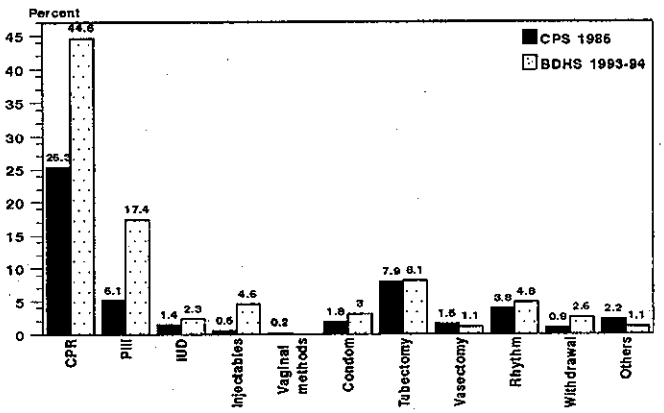
Use of Contraceptive

The unmet need is, by definition, related to the use rate. As discussed above, the use rate increases in most situations by reducing unmet need, and thus, a decline in unmet need is a reflection of the increase in the CPR. It is important for the program to identify the regions

of the country where unmet need is relatively high, because the existence of high unmet need implies that the regions have high potential for increasing use rate.

Figure 5.14 shows that the CPR has increased from 25.3 in 1985 to 44.6 in 1993-94 in Bangladesh. The magnitude of increase is quite substantial. However, such a high increase in the CPR has resulted

Figure 5.14: Contraceptive prevalence and method mix



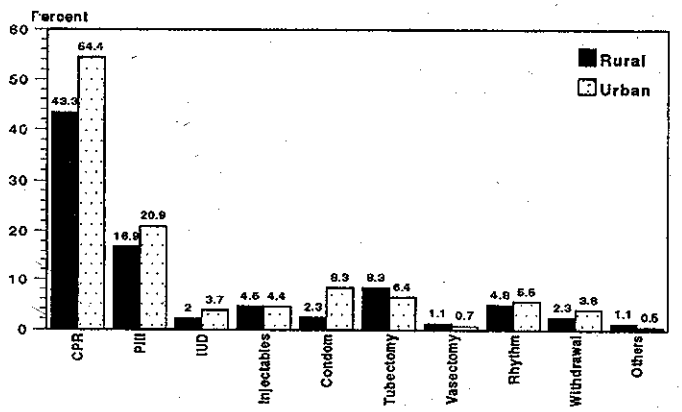
Source: BDHS 1993-94.

mainly from the rapid increase in the use rate of pill. The use rate of pill has increased from 5.1 percent to 17.4 percent during the period. The use rate of other methods increased very little - the use rate of some important methods (vasectomy) has even declined. Thus, the use of pill contributes to most of the increase in the CPR, and the increase in the use rate of pill is much higher than that of the other non-clinical modern methods.

Figure 5.15 shows that the CPR is much lower in rural areas than urban areas, and the difference is mostly due to the lower use rate of pill and condom in rural areas.

In the country as a whole, the CPR is lowest and unmet need highest in Chittagong Division. Figure 5.16 shows the difference in the CPR between Chittagong Division and the rest of the country. Compared

Figure 5.15: Contraceptive prevalence and method mix by Rural-Urban residence, 1993-94

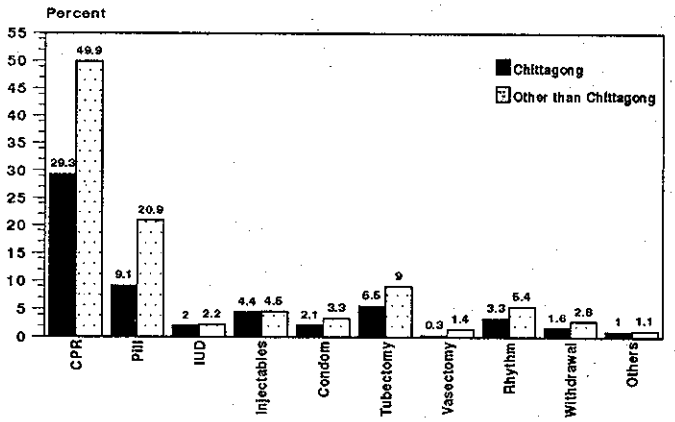


Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

to the other regions, the use rate of all methods is low in Chittagong, and this is especially true of pills. That is, if the use rate of pill alone can be raised in Chittagong to that of the national level, the CPR in Chittagong Division would increase substantially.

Similar to the unmet need women, the users can be divided into two groups: spacers and limiters. Tables 5.7 and 5.8 show the distribution

Figure 5.16: Contraceptive prevalence and method mix by region, 1993-94



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

of spacer users and limiter users respectively by place of residence and age. The spacers constitute about 80 percent of users, while it accounted for only 10 percent of unmet need women. The proportion of limiters is thus very low among the users, compared to the same among the unmet need women. The main reason for such a big difference in the proportion of limiters between users and unmet need women seems to be the fact that the incentives and the opportunities for stopping childbirth through usage of permanent contraceptive methods have rapidly declined in the recent years, so much so that even the user women who wanted to stop birth could not or did not do so in reality. That a high proportion of women want to stop childbirth is reflected in the high proportion of unmet need women being limiters, while that most of the women can not or do not stop childbirth in practice is reflected in the low proportion of users being limiters.

The proportion of women who use contraceptives for spacing is higher than the proportion of women who use contraceptives for limiting in all regions of the country (Tables 5.7 and 5.8). Also, the proportion of spacer users is considerably higher than the proportion of limiter users in urban than rural areas. As expected, the spacers users are concentrated in the younger age groups and the limiter users in the older age groups. However, the middle two age groups of 25-34 years contain just about half of both spacers and limiters.

Tables 5.9 and 5.10 show the distribution of spacer users and limiter users respectively by parity and place of residence. The spacers are concentrated in the lower parity groups and the limiters in the higher parity groups. Similar to what has been observed with age distribution, the middle two parity groups (2-children and 3-children) contain about half of both spacers and limiters. The pattern is similar in all regions, except Chittagong. In Chittagong division, most of the limiters (about two-thirds) are located in the higher than 3-children group of user women, indicating that the demand for children is higher in Chittagong region than in other regions.

Table 5.7: Distribution of user women who do not want to be pregnant now but want children in future [Spacer] by place of residence and age, 1993

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	10.5 (333)	21.7 (691)	25.9 (823)	18.2 (579)	13.1 (417)	8.0 (255)	2.6 (82)	100.0 (3180)
Rural	11.3 (306)	21.6 (584)	25.4 (685)	18.3 (495)	12.9 (348)	7.9 (214)	2.6 (69)	84.9 (2701)
Urban	5.6 (27)	22.4 (107)	28.8 (138)	17.4 (83)	14.4 (69)	8.7 (42)	2.7 (13)	15.1 (479)
Divisions:								
Barisal	11.1 (24)	20.1 (43)	24.3 (52)	20.7 (45)	13.0 (28)	9.8 (21)	1.0 (2)	100.0 (216)
Chittagong	7.5 (41)	20.7 (113)	26.2 (143)	19.7 (108)	13.6 (75)	9.2 (50)	3.2 (17)	100.0 (549)
Dhaka	8.0 (78)	19.9 (194)	27.5 (269)	19.0 (186)	14.9 (145)	7.6 (75)	3.0 (29)	100.0 (977)
Khulna	13.2 (69)	22.7 (118)	24.2 (126)	15.8 (82)	12.8 (67)	8.3 (43)	3.0 (16)	100.0 (521)
Rajshahi	13.2 (121)	24.2 (222)	25.3 (233)	17.1 (157)	11.1 (102)	7.2 (66)	1.9 (18)	100.0 (918)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.8: Distribution of user women who do not want to be pregnant at all in future [Limiter] by place of residence and age, 1993

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	0.3 (3)	5.8 (47)	17.3 (142)	24.0 (197)	26.0 (213)	17.4 (143)	9.3 (76)	100.0 (822)
Rural	0.2 (2)	6.1 (45)	17.8 (133)	24.6 (185)	25.9 (194)	16.8 (126)	8.5 (64)	91.2 (750)
Urban	1.7 (1)	2.6 (2)	12.5 (9)	17.3 (13)	26.2 (19)	22.9 (17)	16.8 (12)	8.8 (72)
Divisions:								
Barisal	1.2 (1)	2.4 (1)	19.5 (11)	17.5 (10)	25.4 (14)	24.0 (13)	10.0 (5)	100.0 (54)
Chittagong	-	2.5 (3)	10.2 (14)	22.0 (30)	36.0 (49)	21.0 (28)	8.2 (11)	100.0 (135)
Dhaka	0.5 (1)	8.1 (20)	18.9 (46)	23.4 (57)	21.7 (53)	13.2 (32)	14.3 (35)	100.0 (244)
Khulna	-	1.8 (2)	10.7 (12)	26.5 (30)	27.7 (31)	25.3 (28)	8.0 (9)	100.0 (112)
Rajshahi	0.3 (1)	7.6 (21)	21.6 (60)	25.7 (71)	24.3 (67)	14.8 (41)	5.7 (16)	100.0 (276)

Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.
Note: Parenthesis show the absolute number.

Table 5.9: Distribution of user women who do not want to be pregnant now but want children in future [Spacer] by place of residence and parity, 1993-94

Place of residence	Parity						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	4.7 (150)	16.0 (510)	23.6 (750)	20.4 (648)	14.1 (448)	21.2 (674)	100.0 (3180)
Rural	4.9 (131)	15.9 (429)	22.6 (610)	19.6 (530)	14.2 (383)	22.9 (618)	84.9 (2701)
Urban	4.0 (19)	16.8 (81)	29.3 (141)	24.6 (118)	13.6 (65)	11.7 (56)	15.1 (479)
Divisions:							
Barisal	5.0 (11)	15.9 (34)	22.5 (49)	22.8 (49)	12.8 (28)	21.0 (45)	100.0 (216)
Chittagong	4.0 (22)	10.4 (57)	21.3 (117)	19.2 (105)	16.1 (88)	29.1 (160)	100.0 (549)
Dhaka	4.7 (46)	14.3 (140)	23.7 (231)	20.0 (201)	15.8 (154)	21.0 (205)	100.0 (977)
Khulna	6.2 (32)	17.3 (90)	25.9 (135)	22.5 (117)	9.5 (50)	18.6 (97)	100.0 (521)
Rajshahi	4.3 (40)	20.5 (188)	23.9 (219)	19.1 (175)	14.0 (129)	18.2 (167)	100.0 (918)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.10: Distribution of user women who do not want to be pregnant at all in future [Limiter] by place of residence and parity, 1993-94

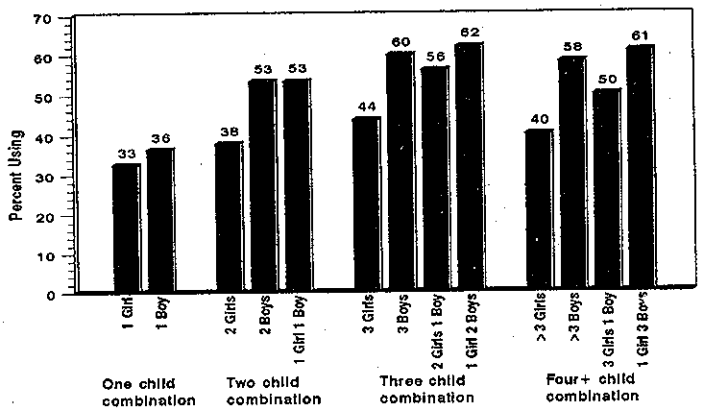
Place of residence	Parity						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	1.7 (14)	5.4 (44)	19.6 (162)	26.4 (217)	21.1 (174)	25.7 (211)	100.0 (822)
Rural	1.7 (13)	5.2 (39)	20.3 (152)	26.7 (200)	21.2 (159)	24.9 (187)	91.2 (750)
Urban	1.7 (1)	7.9 (6)	13.0 (9)	23.4 (17)	20.0 (14)	34.0 (25)	8.8 (72)
Divisions:							
Barisal	3.6 (2)	9.3 (5)	17.7 (10)	25.3 (14)	20.6 (11)	23.7 (13)	100.0 (54)
Chittagong	3.0 (4)	1.0 (1)	12.6 (17)	19.1 (26)	20.7 (28)	43.8 (59)	100.0 (135)
Dhaka	2.3 (6)	4.1 (10)	19.1 (47)	30.6 (75)	22.5 (55)	21.4 (52)	100.0 (244)
Khulna	-	4.4 (5)	20.5 (23)	24.1 (27)	25.3 (28)	25.7 (29)	100.0 (112)
Rajshahi	1.0 (3)	8.3 (23)	23.7 (65)	27.4 (76)	18.5 (51)	21.1 (58)	100.0 (276)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Son Preference

Due to a number of socio-economic factors, son preference is high in Bangladesh, which is an important reason for desiring a large number of children, and thereby affecting contraceptive behavior (Khuda 1977 and 1988, and Vlassof and Khuda 1986). More than one-third of MWRAs in the country still belong to the "non-user non-unmet need" ("no demand") category and a significant proportion of women of this category is likely to have desire for additional children due to son preference (also see Table 3.11). Figure 5.17 indicates the existence of son preference among the MWRAs: the use rate is higher among the mothers of son of any number than among the mothers of daughters of the same number.

Figure 5.17: Son preference and contraceptive use



Source: Secondary analysis of BDHS 1993-94, URC(B) 1995.

Infecundity

By definition, unmet need women include only the fecund women. Thus, the extent of unmet need is inversely related to infecundity. A knowledge about the distribution of infecund women may be useful, albeit indirectly, in identifying the unmet need segments.

The number of infecund women has been defined, here, as the total number of sterilized women, those who can not become pregnant, and those whose last birth occurred over five years ago. Tables 5.11 and 5.12 show the distribution of infecund women by region, age and

Table 5.11: *Distribution of currently married women who can not and who will not become pregnant again by place of residence and age, 1993-94*

[Definition: No. of sterilized women + No. of infecund women + those whose last birth was over 5 years ago.]

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	2.6 (33)	8.1 (103)	14.0 (177)	18.4 (233)	21.4 (270)	18.3 (232)	17.1 (216)	100.0 (1263)
Rural	2.7 (31)	8.3 (95)	14.4 (165)	18.8 (216)	21.4 (246)	18.2 (209)	16.4 (188)	91.0 (1149)
Urban	2.2 (3)	6.5 (7)	10.1 (11)	14.8 (17)	21.4 (24)	20.2 (23)	24.9 (28)	9.0 (114)
Divisions:								
Barisal	0.9 (1)	5.2 (4)	15.1 (11)	17.2 (13)	21.2 (16)	20.2 (15)	20.3 (15)	100.0 (74)
Chittagong	3.8 (11)	7.5 (21)	11.1 (31)	13.5 (38)	23.2 (65)	22.5 (63)	18.4 (51)	100.0 (278)
Dhaka	2.9 (11)	9.7 (37)	15.0 (58)	18.1 (69)	18.6 (71)	13.1 (50)	22.8 (88)	100.0 (385)
Khulna	1.8 (3)	3.7 (6)	8.8 (15)	19.0 (32)	23.6 (40)	29.1 (50)	14.0 (24)	100.0 (170)
Rajshahi	2.1 (8)	9.7 (35)	17.4 (62)	22.7 (81)	21.9 (78)	15.3 (54)	10.8 (38)	100.0 (355)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.12: *Distribution of currently married women who can not and who will not beconie pregnant again by place of residence and parity, 1993-94*

Place of residence	Parity						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	12.6 (159)	5.3 (67)	15.2 (193)	19.6 (248)	17.5 (221)	29.7 (375)	100.0 (1263)
Rural	12.4 (142)	5.1 (59)	15.6 (180)	20.0 (230)	17.7 (204)	29.1 (335)	91.0 (1149)
Urban	14.6 (17)	7.0 (8)	11.3 (13)	15.9 (18)	15.7 (18)	35.6 (40)	9.0 (114)
Divisions:							
Barisal	10.8 (8)	9.4 (7)	14.7 (11)	20.3 (15)	16.3 (12)	28.6 (21)	100.0 (74)
Chittagong	12.5 (35)	3.8 (10)	11.7 (33)	14.4 (40)	15.7 (44)	41.9 (117)	100.0 (278)
Dhaka	16.1 (62)	4.4 (17)	13.3 (51)	21.3 (82)	18.0 (69)	26.9 (104)	100.0 (385)
Khulna	8.4 (14)	2.9 (5)	15.8 (27)	18.3 (31)	24.3 (41)	30.3 (52)	100.0 (170)
Rajshahi	11.2 (40)	7.8 (28)	20.0 (71)	22.4 (80)	15.5 (55)	23.1 (82)	100.0 355)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

parity respectively. About 15 percent of MWRAs were reported to be infecund in the 1993-94 BDHS. The highest proportion of infecund women (30%) were in Dhaka division. The infecund women are concentrated in the older (above 30 years) age groups. However, except in Dhaka division, the proportion of infecund women was highest in the 35-39 age group, followed by the two succeeding age groups (Table 5.11). The infecund women are also concentrated in the higher parity-groups (above 2 children) in all the regions. There is high multicollinearity between age and parity, and hence, the relationship between age and infecundity is, to a great extent, hidden in the relationship between parity and infecundity.

Unwanted Pregnancy and Abortion

The category of unmet need women includes those pregnant women whose pregnancy was unwanted or mistimed and those amenorrheic women whose last pregnancy was unwanted or mistimed. There are also women who became pregnant and aborted their pregnancy, and therefore, are not included in the currently pregnant or amenorrheic women. The aborted women should be included in the unmet category because that they have aborted itself proves that they did not want the last pregnancy, at least not at that time, more so because the incidence of induced abortion is highly pronounced in Bangladesh (see pages 57-58).

Tables 5.13 and 5.14 show the distribution of women who have aborted their last pregnancy by age and parity respectively. Only 44 women are found in this category. A comparison of the number of aborted women found here with that discussed earlier (pages 57-58) indicates the possibility of serious underreporting. In the Bangladesh society, abortion is still considered as an undesirable act. Given this, it is quite likely that a large number of aborted women have hidden information about their abortion to the interviewers in the BDHS.

Despite the extremely low number of aborted women, the pattern of distribution of the aborted women who have admitted their abortion at the time of interview may be greatly indicative of the existing pattern of distribution of all aborted women, including those who suppressed information regarding their abortion.

Of the total aborted women, 19 (43%) are in Dhaka Division alone. If compared with the total number of MWRAs, the proportion of women having aborted their last pregnancy is higher in urban than in rural areas. Most such women are concentrated in the age group 25-44 years (Table 13), and in the higher parity groups, although a number of women who have only 2 or 3 children aborted their last pregnancy (Table 14).

The number of pregnant women who did not want to be pregnant and also not aborted their last pregnancy is higher than those who aborted. The majority of these women were located in Chittagong and Dhaka divisions (Table 5.15). Most of them are in the lower age groups (below 30 years). Table 5.16 shows that although the overwhelming majority of these women belong to lower parity-groups (below 3 children), a good number of them also belong to higher parity-groups (more than 2 children).

not distinct ?

Side-effect of Use

In a society where the FP program rapidly expands its coverage without simultaneously ensuring improved quality of services, side-effect of method use inevitably becomes an important barrier to further increase in the use rate. It is not only that the users experiencing side-effects are likely to discontinue contracepting, but also that this will adversely affect the neighboring non-users who will feel discouraged to use contraceptive even in the future. The antinatalistic impact of side-effects on the CPR will be high as the CPR increases, so much so that increasing trend in the CPR may be halted or the CPR may even decline long before it reaches the target level unless the quality of care increases concomitantly with the increase in the CPR. In this sense, it can be said that it will be difficult to satisfy unmet need in Bangladesh at the current stage of its fertility transition, if the problems of side-effect and health concerns are not minimized as soon as possible.

Table 5.17 shows the distribution of users who complained of side-effects by methods used. It is evident that a significantly high proportion

Table 5.13: Distribution of currently married women who aborted their last pregnancy by place of residence and age, 1993-94

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh	2.2 (1)	12.2 (5)	27.4 (12)	22.2 (10)	17.2 (8)	10.8 (5)	8.0 (3)	100.0 (44)
Rural	2.9 (1)	9.5 (3)	31.0 (10)	15.4 (5)	16.1 (5)	14.4 (5)	10.7 (3)	74.8 (33)
Urban		20.0 (2)	16.9 (2)	42.6 (5)	20.5 (2)	-	-	25.2 (11)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.14: Distribution of currently married women who aborted their last pregnancy by place of residence and parity, 1993-94

Place of residence	Parity					All
	1	2	3	4	5+	
Bangladesh	9.7 (4)	21.8 (10)	11.0 (5)	16.2 (7)	41.4 (18)	100.0 (44)
Rural	8.2 (3)	20.4 (7)	8.2 (3)	17.3 (6)	45.9 (15)	74.8 (33)
Urban	14.0 (2)	25.9 (3)	19.2 (2)	12.7 (1)	28.2 (3)	25.2 (11)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.15: Distribution of unmet need women who did not want their last pregnancy and not-aborted by place of residence and age, 1993-94

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	33.0 (88)	38.6 (103)	18.7 (50)	6.9 (18)	1.7 (5)	0.9 (2)	0.2 (1)	100.0 (266)
Rural	33.3 (79)	37.7 (89)	18.8 (45)	7.5 (18)	1.4 (3)	1.0 (2)	0.3 (1)	89.0 (237)
Urban	30.3 (9)	45.8 (13)	17.8 (5)	1.6 (0)	4.5 (1)	-	-	11.0 (29)
Divisions:								
Barisal	33.8 (7)	35.6 (7)	17.6 (4)	6.5 (1)	3.2 (1)	-	3.2 (1)	100.0 (20)
Chittagong	26.0 (24)	36.9 (34)	22.8 (21)	8.6 (8)	4.3 (4)	1.4 (1)	-	100.0 (93)
Dhaka	37.2 (29)	38.4 (30)	17.5 (14)	5.5 (4)	-	1.4 (1)	-	100.0 (78)
Khulna	50.5 (14)	37.3 (10)	5.5 (1)	6.7 (2)	-	-	-	100.0 (27)
Rajshahi	29.4 (14)	44.1 (21)	20.6 (10)	5.9 (3)	-	-	-	100.0 (48)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.16: Distribution of unmet need women who did not want their last pregnancy and not aborted by place of residence and parity, 1993-94

Place of residence	Number of child						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	12.1 (32)	32.5 (86)	23.1 (61)	18.1 (48)	9.1 (24)	5.1 (14)	100.0 (266)
Rural	11.9 (28)	31.8 (75)	23.4 (55)	17.9 (42)	9.6 (13)	5.4 (13)	89.0 (237)
Urban	13.7 (4)	38.4 (11)	20.4 (6)	20.2 (6)	5.1 (1)	2.2 (1)	11.0 (29)
Divisions:							
Barisal	20.9 (4)	25.9 (5)	19.4 (4)	12.9 (3)	11.2 (2)	9.7 (2)	100.0 (20)
Chittagong	11.1 (10)	20.6 (19)	22.8 (21)	21.2 (20)	15.1 (14)	9.3 (9)	100.0 (93)
Dhaka	8.5 (7)	41.8 (33)	24.6 (19)	17.5 (14)	6.2 (5)	1.4 (1)	100.0 (78)
Khulna	24.3 (7)	31.8 (9)	31.8 (9)	7.3 (2)	4.9 (1)	-	100.0 (27)
Rajshahi	9.7 (5)	43.2 (21)	17.8 (9)	21.5 (10)	3.9 (2)	3.9 (2)	100.0 (48)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

- 28 percent- of user women complained about side-effects of use. Side-effect is higher in Rajshahi and Dhaka, where the use rate is also higher. The complaints of side-effects relate to all methods, but mostly about pill, tubectomy and injectables. The proportion of women complaining of side-effects to all user women is very high for the two most prominent clinical methods - tubectomy and injectables.

Intention to Use Contraceptives in Future: The Intender Approach

Two-thirds number of women in both the categories of "unmet need" and "non-user non-unmet need" women expressed their future intention to use some contraceptive method (Figure 5.18). The difference between the intenders of the two categories is that the intenders of unmet need category do not want pregnancy at all or want to delay pregnancy, while it is more likely that the intenders of the "non-user non-unmet need" category want childbirth immediately - they intend to use some method only after having the desired number of births in the future.

Most of the unmet need women - 65 percent-expressed their future intention to contracept (Table 5.18). Most of these intenders are located in Chittagong and Dhaka divisions. More than 70 percent of these women belong to the lower age groups (below 30 years). Since these women belong to the unmet need category, they do not want to be pregnant at all or soon. They also do not want to use any method at present, even for spacing.

The unmet need women who intended to contracept in the future are scattered over all parity groups, although the concentration is high among women with 1-2 children (Table 5.19). That they are scattered in all age groups suggests that this may be because they fell that they may have to reverse their decision.

It is quite interesting to observe that about 68 percent women of the "non-user non-unmet need" category (or 22% of the total women) expressed their future intention to contracept (Figure 5.18). In so far as acceptance of family planning is concerned, these women belong to the most "hard-nut-to-crack" category - users and unmet need women are the other two categories. That even a sizeable proportion (36%)

Table 5.17: Distribution of users of modern methods complaining side-effects

Place of residence	Number of users complaining side-effects						Total
	Vasec tomy	Tubec tomy	IUD	Injec tables	Pill	Condom	
Bangladesh:							
Total	1.3 (14)	29.9 (341)	6.2 (70)	16.9 (193)	44.8 (511)	1.0 (12)	100.0 (1141)
Rural	1.4 (14)	30.8 (313)	5.7 (58)	17.4 (177)	44.0 (447)	0.7 (7)	89.0 (1016)
Urban	0.2 (0)	22.6 (28)	10.1 (13)	12.6 (16)	51.1 (64)	3.3 (4)	11.0 (125)
Divisions:							
Barisal	2.5 (2)	28.0 (25)	-	26.7 (1)	48.8 (44)	-	100.0 (89)
Chittagong	-	29.9 (62)	6.9 (14)	20.4 (42)	42.1 (86)	0.6 (1)	100.0 (206)
Dhaka	0.6 (2)	29.9 (108)	5.6 (20)	17.9 (64)	44.4 (160)	1.6 (6)	100.0 (360)
Khulna	0.8 (1)	25.0 (39)	7.2 (11)	20.8 (33)	45.4 (71)	0.6 (1)	100.0 (157)
Rajshahi	2.6 (9)	32.8 (108)	6.0 (20)	12.1 (40)	45.5 (149)	1.0 (3)	100.0 (328)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.18: Distribution of unmet need women who intend to use contraceptives in future by place of residence and age, 1993-94

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	21.3 (285)	27.2 (364)	23.2 (311)	15.8 (211)	9.1 (112)	2.7 (36)	0.7 (9)	100.0 (1338)
Rural	21.9 (262)	27.1 (325)	23.0 (276)	15.3 (184)	9.3 (111)	2.9 (35)	0.5 (6)	89.6 (1199)
Urban	16.6 (23)	27.8 (39)	25.2 (35)	19.4 (27)	7.7 (11)	1.2 (2)	2.0 (3)	10.4 (139)
Divisions:								
Barisal	21.2 (19)	30.1 (26)	17.2 (15)	18.3 (16)	8.8 (8)	2.9 (3)	1.5 (1)	100.0 (87)
Chittagong	16.5 (71)	24.1 (104)	27.6 (119)	17.9 (77)	10.2 (44)	3.4 (14)	0.3 (1)	100.0 (431)
Dhaka	22.0 (93)	27.8 (117)	21.6 (91)	15.1 (64)	9.6 (41)	2.9 (12)	1.1 (5)	100.0 (423)
Khulna	35.0 (43)	27.8 (34)	15.7 (19)	12.1 (15)	7.8 (10)	1.6 (2)	-	100.0 (122)
Rajshahi	21.7 (60)	29.9 (82)	24.1 (66)	14.3 (39)	7.2 (20)	1.9 (5)	0.9 (2)	100.0 (274)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.19: Distribution of unmet need women who intend to use contraceptives in future by place of residence and parity, 1993-94

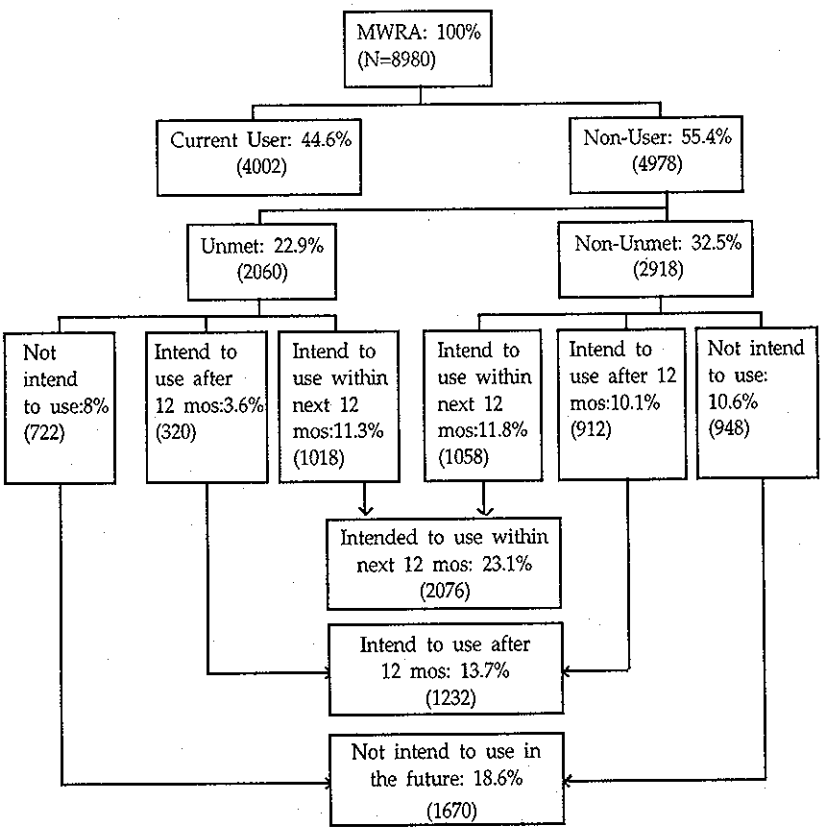
Place of residence	Number of children						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	11.2 (150)	21.9 (293)	21.6 (289)	17.3 (231)	11.3 (152)	16.7 (224)	100.0 (1338)
Rural	11.5 (137)	21.5 (257)	21.0 (252)	17.5 (210)	11.5 (138)	17.1 (204)	89.6 (1199)
Urban	9.0 (13)	25.5 (35)	26.5 (37)	15.1 (21)	10.1 (14)	13.8 (19)	10.4 (139)
Divisions:							
Barisal	15.0 (13)	19.4 (17)	16.9 (15)	14.3 (12)	14.3 (12)	20.2 (18)	100.0 (87)
Chittagong	8.3 (36)	17.0 (73)	20.6 (89)	18.2 (78)	13.4 (58)	22.6 (97)	100.0 (431)
Dhaka	10.9 (46)	24.5 (103)	22.3 (94)	17.2 (73)	9.5 (40)	15.6 (66)	100.0 (423)
Khulna	18.5 (33)	30.0 (37)	21.4 (26)	9.7 (12)	10.1 (12)	10.3 (13)	100.0 (122)
Rajshahi	11.8 (32)	22.6 (62)	23.6 (65)	20.3 (56)	10.6 (29)	11.0 (30)	100.0 (274)

Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.
Note: Parenthesis show the absolute number.

of these women intended to contracept within next 12 months is a manifestation of drastic improvement in the knowledge and attitude of women towards family planning in the Bangladesh society - family planning is no longer considered a "forbidden fruit" by most Bangladeshi women, although a sizeable proportion are not practising family planning.

However, much pronounced intention of the "non-user non-unmet" women to use contraceptive has little significance to the program, for a large proportion of these women want to have pregnancy soon. The

Figure 5.18: Distribution of MWRAs by their intention to use FP in the future



Source: Secondary Analysis of BDHS 1993-94, URC(B) 1995.
mos. = Months

program services will not be acceptable to them till they are adequately motivated to space or limit childbirth. Most of these women (87%) belong to the younger age groups (below 30 years) (Table 5.20). There is ample scope of motivating them at least to space childbirth. About 41 percent of these women already have 2 or more children (Table 5.21). Therefore, there is also sufficient scope of motivating them to limit childbirth.

Equally, if not more, difficult for the program to reach is a subgroup of unmet need women who do not have intention to contracept even in future. Their number is not very low (about 35% UCN women). Most of these women belong to the higher age and higher parity groups, both in the country as a whole and in the regions (Tables 5.22 and 5.23). They will not use contraceptives presumably because they consider themselves infecund or because they are sexually less active (Table 5.24). However, a number of them cited side-effects and health hazards resulting from past use of method as the reason for their non-use. Similar evidence were also found in the other countries (Stover and Heaton, 1995).

Table 5.20: Distribution of "non-user non-unmet need" women who intend to use contraceptives in future by place of residence and age, 1993-94

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	30.2 (594)	34.8 (685)	22.3 (440)	9.1 (179)	3.1 (61)	0.6 (11)	-	100.0 (1970)
Rural	30.4 (542)	34.8 (620)	22.2 (397)	9.0 (161)	3.0 (54)	0.5 (9)	-	90.5 (1783)
Urban	28.0 (52)	34.8 (65)	23.0 (43)	9.5 (18)	3.9 (7)	0.8 (2)	-	9.5 (187)
Divisions:								
Barisal	25.8 (32)	35.4 (43)	20.3 (25)	15.2 (19)	2.1 (3)	1.3 (2)	-	100.0 (123)
Chittagong	23.8 (122)	33.5 (172)	28.9 (148)	9.4 (48)	4.4 (23)		-	100.0 (513)
Dhaka	29.6 (195)	37.1 (245)	22.1 (146)	7.8 (52)	2.6 (17)	0.8 (6)	-	100.0 (660)
Khulna	28.4 (63)	36.1 (80)	22.9 (51)	9.8 (22)	2.5 (6)	0.5 (1)	-	100.0 (222)
Rajshahi	40.3 (182)	32.0 (145)	15.5 (70)	8.6 (39)	3.0 (13)	0.6 (3)	-	100.0 (452)

Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.
Note: Parenthesis show the absolute number.

Table 5.21: *Distribution of "non-user non-unmet need" women who intend to use contraceptives in future by place of residence and parity, 1993-94*

Place of residence	Number of children						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	31.8 (626)	27.7 (546)	20.0 (394)	9.8 (193)	5.9 (116)	4.8 (95)	100.0 (1970)
Rural	31.3 (557)	27.5 (490)	20.2 (359)	10.1 (179)	6.1 (108)	5.0 (89)	90.5 (1783)
Urban	36.6 (68)	30.3 (57)	18.5 (35)	7.1 (13)	3.8 (7)	3.7 (7)	9.5 (187)
Divisions:							
Barisal	25.2 (31)	26.5 (33)	27.4 (34)	8.9 (11)	5.2 (6)	6.8 (8)	100.0 (123)
Chittagong	30.9 (158)	22.5 (115)	18.4 (94)	13.4 (69)	8.7 (45)	6.2 (32)	100.0 (513)
Dhaka	29.1 (192)	29.3 (193)	22.3 (147)	9.3 (61)	6.1 (40)	4.1 (27)	100.0 (660)
Khulna	27.6 (61)	36.7 (81)	19.6 (43)	8.8 (20)	4.5 (10)	2.7 (6)	100.0 (222)
Rajshahi	40.6 (184)	27.4 (124)	16.7 (76)	7.2 (32)	3.1 (14)	5.0 (23)	100.0 (452)

Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.
Note: Parenthesis show the absolute number.

Table 5.22: Distribution of unmet need women who do not intend to use contraceptives, now or ever, by place of residence and age, 1993-94

Place of residence	Age (years)							All
	10-19	20-24	25-29	30-34	35-39	40-44	45-49	
Bangladesh:								
Total	4.5 (32)	7.2 (52)	8.9 (64)	14.2 (102)	21.3 (154)	24.0 (174)	19.8 (143)	100.0 (722)
Rural	4.6 (30)	7.4 (49)	8.8 (58)	14.2 (94)	21.1 (140)	24.1 (160)	19.8 (131)	91.7 (663)
Urban	3.5 (2)	5.2 (3)	10.1 (6)	13.7 (8)	23.8 (14)	23.1 (14)	20.6 (12)	8.3 (60)
Divisions:								
Barisal	4.5 (2)	7.4 (3)	2.2 (1)	17.0 (7)	22.9 (10)	35.6 (15)	10.4 (5)	100.0 (43)
Chittagong	4.0 (13)	9.3 (30)	13.2 (43)	15.7 (51)	19.8 (65)	22.6 (74)	15.3 (50)	100.0 (326)
Dhaka	5.9 (10)	6.4 (11)	7.0 (12)	11.3 (19)	22.8 (38)	22.8 (38)	23.8 (40)	100.0 (166)
Khulna	5.2 (4)	5.7 (4)	8.0 (6)	13.4 (10)	18.8 (14)	22.4 (17)	26.5 (20)	100.0 (76)
Rajshahi	3.4 (4)	3.4 (4)	2.5 (3)	13.5 (15)	24.7 (27)	26.4 (29)	26.1 (29)	100.0 (111)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.23: Distribution of unmet need women who do not intend to use contraceptives, now or ever, by place of residence and parity, 1993

Place of residence	Number of children						All
	0	1	2	3	4	5+	
Bangladesh:							
Total	2.5 (18)	9.3 (67)	13.2 (95)	15.9 (115)	14.7 (106)	44.4 (321)	100.0 (722)
Rural	2.5 (16)	9.2 (61)	13.0 (86)	15.8 (105)	14.8 (98)	44.8 (297)	91.7 (663)
Urban	3.1 (2)	10.3 (6)	14.9 (9)	17.6 (10)	14.2 (8)	39.9 (24)	8.3 (60)
Divisions:							
Barisal	3.0 (1)	7.4 (3)	6.6 (3)	17.0 (7)	11.9 (5)	54.1 (23)	100.0 (43)
Chittagong	3.0 (10)	9.9 (32)	12.0 (39)	16.4 (54)	14.8 (48)	43.8 (143)	100.0 (326)
Dhaka	2.6 (4)	12.4 (21)	13.4 (22)	16.2 (27)	12.7 (21)	42.7 (71)	100.0 (166)
Khulna	1.3 (1)	5.9 (4)	15.9 (12)	18.9 (14)	15.6 (12)	42.3 (32)	100.0 (76)
Rajshahi	1.7 (2)	5.9 (7)	17.0 (19)	11.5 (13)	17.9 (20)	46.0 (51)	100.0 (111)

Note: Parenthesis show the absolute number.
Source: Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

Table 5.24: Distribution of unmet need women who do not intend to use contraceptives by place of residence and reasons for non-use, 1993-94

Reasons for non-use	Place of residence							
	Bangladesh			Divisions				
	Total	Rural	Urban	Barisal	Chittagong	Dhaka	Khulna	Rajshahi
Want children	3.8 (27)	4.2 (27)	-	-	4.8 (16)	5.4 (9)	1.4 (1)	1.8 (2)
Lack of knowledge	2.8 (20)	2.9 (19)	2.0 (1)	1.5 (1)	4.1 (13)	1.3 (2)	-	3.5 (4)
Husband opposed	10.1 (72)	10.8 (70)	2.9 (2)	7.4 (3)	12.5 (40)	9.1 (15)	8.8 (7)	6.4 (7)
Side-effect	3.8 (27)	3.7 (24)	4.6 (3)	4.5 (2)	3.9 (12)	3.4 (5)	5.9 (4)	2.6 (3)
Health concern	7.3 (52)	7.1 (46)	9.5 (6)	9.6 (4)	9.6 (31)	5.1 (8)	4.7 (3)	4.4 (5)
Religiosity	11.1 (82)	12.1 (79)	4.5 (3)	16.3 (7)	15.1 (49)	6.7 (11)	6.8 (5)	9.2 (10)
Fatalistic	5.9 (42)	6.3 (41)	2.0 (1)	5.1 (2)	5.8 (19)	4.0 (7)	8.2 (6)	7.9 (8)
Other people opposed	1.0 (8)	1.1 (8)	-	-	1.6 (6)	-	-	1.8 (2)
In-frequent sex	10.6 (75)	10.0 (65)	17.8 (10)	10.4 (5)	9.0 (29)	10.3 (17)	20.8 (15)	9.3 (10)
Difficult to get pregnant	36.2 (257)	35.0 (228)	49.2 (29)	39.3 (17)	26.3 (85)	49.4 (80)	34.7 (26)	45.7 (49)
Menopausal/hyster	1.2 (8)	1.1 (7)	2.1 (1)	-	1.2 (4)	2.2 (4)	1.4 (1)	-
Other reasons	5.2 (37)	5.2 (34)	5.5 (3)	5.9 (3)	5.3 (17)	3.1 (5)	5.4 (4)	7.5 (8)
Don't know	0.6 (4)	0.6 (4)	-	-	0.8 (3)	-	1.8 (1)	-
Total	100 (709)	100 (651)	100 (58)	100 (43)	100 (323)	100 (162)	100 (74)	100 (108)

Note: Parenthesis show the absolute number.

Source:Secondary Analysis of BDHS 1993-1994, URC(B) 1995.

6
Segmentation Analysis: Predictors of Unmet Need

Predictors of Unmet Need

Attempt has been made in this section to determine the predictors of unmet need, using the CHAID software. The exercise is aimed at categorizing the unmet need women by their characteristics, and identifying the segments where the unmet need women are most concentrated.

CHAID or Chi-squared Automatic Interaction Detector is a new tool, which performs segmentation modelling. It is highly useful in a situation when the objective is to divide a population into segments which differ among themselves with respect to a designated criterion. The segments derived are mutually exclusive and exhaustive. The CHAID analysis begins by dividing the population into two or more distinct groups, based on the categories of the best predictor and then these groups are split into smaller subgroups. The results of the exercises are shown in the form of a tree diagram, whose branches correspond to the groups. As each of these groups is split further into smaller subgroups, the tree spawns additional branches (nodes). Each node on the tree diagram represents a population subgroup. There are three rows of information in each node to describe the subgroup. The first row shows a symbol that identifies the particular category to define the subgroup (in the present case it is the unmet need). The second row contains a summary statistic for the subgroup, based on values of the dependent variable (it is the percentage of unmet need women in the node in the present case). The final row contains the size of subgroup for the node. The initial node (root node or parent node) of the tree represents the total sample. The root node is the parent of a number of child nodes formed by the categories of the best predictor of the dependent variable. CHAID then splits only the child nodes in which the value of the variable significantly differs among the subgroups. A node is not further split, if no predictors are found

statistically significant. The terminal nodes of the tree are the final segments - the segments which can not be split further. The terminal nodes are identified by a dashed number. In its final form, the tree shows the nodes (segments) which contain the highest proportion of population. The program can easily identify the target segments and devote the required efforts for those segments of the population.

Figure 6.1 displays the predictors of unmet need for Bangladesh, identified through CHAID. The root node of the tree shows that 22.94 percent of the 8980 MWRAs in Bangladesh have unmet need. CHAID found the number of living children (parity) as the best predictor of unmet need. The root or parent node has three child nodes determined by the three categories of the best predictor. The highest number of women and those with unmet need are in the middle parity group (1-4 children). Among women who have no children, unmet need is very low (14.6%). Unmet need is quite high among women who have 5+ children (30%). ? What does this mean ?

Each of the three parity groups (child nodes) has been split into a number of subgroups to find the grandchild nodes and derive the second best predictor for each group. The second best predictor varies among the child nodes: it is age of women for zero parity group, length of open interval for the middle parity group, and education for the last parity group. The tree also shows the third best and even the fourth best predictors for the grandchild nodes which could be split further. Education, employment, age, religion, and length of open interval emerge as the third best predictor; and employment, length of open interval, place of residence, and religion as the fourth best predictor.

Segmentation of Unmet Need Women

The tree presented in Figure 6.1 shows that there are in total 23 terminal segments of unmet need women. Table 6.1 summarizes the findings of the CHAID analysis. The segments of the unmet need women have been shown in the table in order of weight of the segments in terms of the percentage of total unmet need among them (first column). The second column shows the terminal number of the segments as shown in the tree. The third column provides description of the segment.

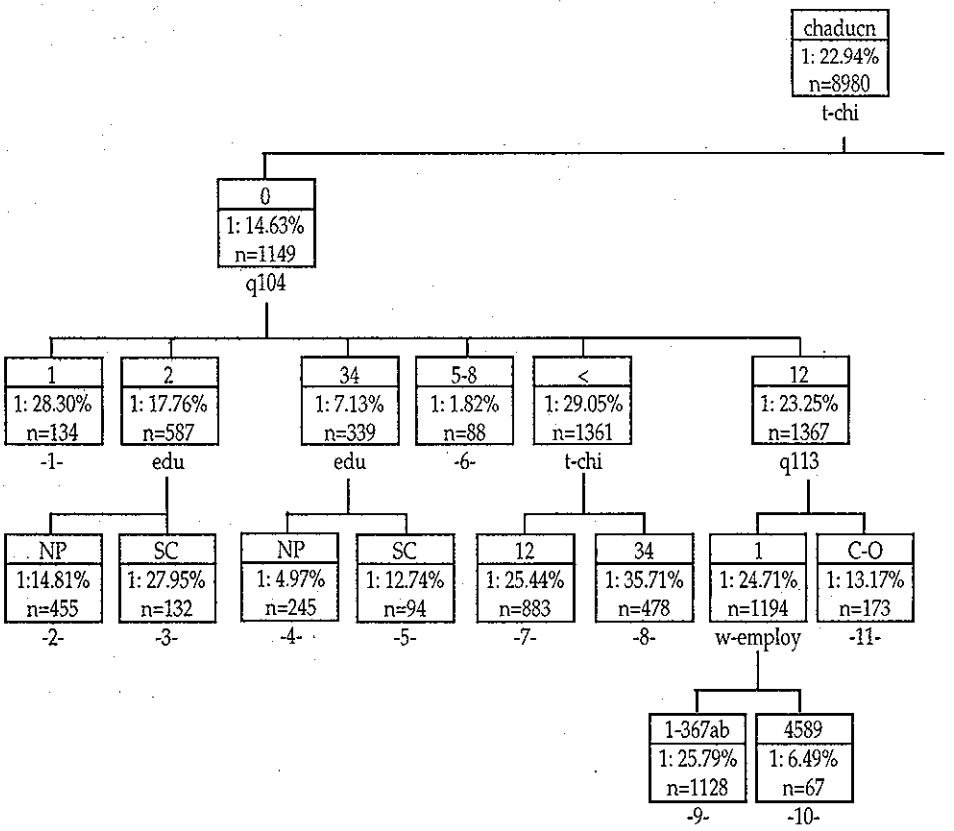
The fourth column shows the percentage of women of the segments who have unmet need; in fact, this column reproduces the figures shown in the middle row of the terminal nodes of the tree. The fifth column shows the percentages of total MWRAs having unmet need in the segments, and the final column presents the cumulative percentages of unmet need.

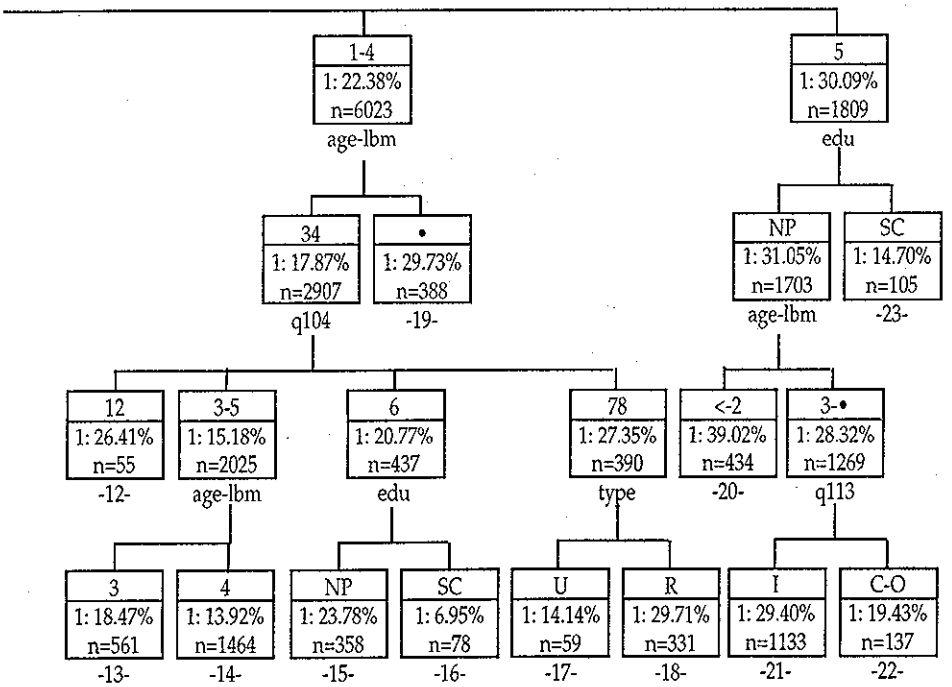
The table shows that more than half of the unmet need women in Bangladesh are concentrated in the top four segments and two-thirds in the top six segments.

CHAID software has also been used to identify the predictors of unmet need for each of five divisions of the country. Figure 6.2 shows that the best predicator of unmet need in Barisal division is the number of living children, followed by religion. As discussed earlier, Chittagong division has the highest proportion of unmet need (37%) in the country. Figure 6.3 shows that the best predictor of unmet need in Chittagong is the number of living children, with religion and education being the second best predictors. For Dhaka division, as shown in Figure 6.4, open birth interval has come out as the best predictor, and education and the number of living children as the second best predictors. Figure 6.5 shows that age is the best predictor - the unmet need women are heavily concentrated in the 20-44 age groups - of unmet need in Khulna division, and religion is the second best predictor. The unmet women in Rajshahi division are best differentiated by the open birth interval, as shown in Figure 6.6. The unmet need women are mostly concentrated among women whose length of interval exceeds 15 months. The number of living children and age of women appear are the second best predictors in Rajshahi division.

What does this tell us?
How do we target?
Clever idea, but doesn't
seem to help in program.

Figure 6.1: Unmet need segments by prodictors: Bangladesh (1993-94)




1-4
1: 22.38%
n=6023
age-lbm
5
1: 30.09%
n=1809
edu
34
1: 17.87%
n=2907
q104
•
1: 29.73%
n=388
-19-
NP
1: 31.05%
n=1703
age-lbm
SC
1: 14.70%
n=105
-23-
12
1: 26.41%
n=55
-12-
3-5
1: 15.18%
n=2025
age-lbm
6
1: 20.77%
n=437
edu
78
1: 27.35%
n=390
type
<-2
1: 39.02%
n=434
-20-
3-•
1: 28.32%
n=1269
q113
3
1: 18.47%
n=561
-13-
4
1: 13.92%
n=1464
-14-
NP
1: 23.78%
n=358
-15-
SC
1: 6.95%
n=78
-16-
U
1: 14.14%
n=59
-17-
R
1: 29.71%
n=331
-18-
I
1: 29.40%
n=1133
-21-
C-O
1: 19.43%
n=137
-22-

CHAID ANALYSIS FROM BDHS DATA: BANGLADESH
Documentation
CurrDir=C:\WINDOWS\TEMP
Filename=
SourceData=SPSS3.SAV

Standard Options

StartUp	= Auto
AnalysisDepth	= 8
MinSubGroup (Before)	= 100
MinSubGroup (After)	= 50
EligibilityLevel	= 0.050
MergeLevel	= 0.050
FreqVar	= <none>
Weight	= wei

Technical Options

Method	= Nominal
Chi-Square	= LikelihoodRatio
WLM	= On (default) (n=10, e=0.0000)
Bonferroni	= Yes

chaducn	levels=2	(Dependent)	Unmet contraceptive need	
level	value	symbol: label	Frequency	weighted
1)	0	H: Has Unmet need	2000	2060
2)	1	N:No Unmet need	6989	6920

t-chi	levels=6	Monotonic	Number of living children	
1)	0	0:0	1142	1149
2)	1	1:1	1629	1604
3)	2	2:2	1849	1821
4)	3	3:3	1500	1502
5)	4	4:4	1087	1095
6)	5	5:5+	1782	1809

age-lbm	leveles=6	Monotonic	Open interval	
1)	1	<:<=16	1612	1626
2)	2	1:16-23	594	606
3)	3	2:24-35	1024	1032
4)	4	3:36-47	830	827
5)	5	4:48+	3402	3223
6)	•	•:•	1527	1566

q104	leveles=8	Floating	Age	
1)	1	1:10-14	146	143
2)	2	2:15-19	1224	1223
3)	3	3:20-24	1972	1965
4)	4	4:25-29	1889	1908
5)	5	5:30-34	1378	1354
6)	6	6:635-39	1083	1078
7)	7	7:40-44	768	767
8)	8	8:45-49	529	541

edu	levels=4	Monotonic	Education	
1)	0	N:no education	4939	5093
2)	1	P:Primary	2580	2495
3)	2	S:Secondary	1262	1201
4)	3	C:College/Uni	208	191

q113	levels=5	Monotonic	Religion	
1)	1	I:Islam	7853	7880
2)	2	C:Christstianity	1090	1051
3)	3	H:Hinduism	31	35
4)	4	B:Buddhism	13	13
5)	5	O:Other	2	2

type	levels=2	Monotonic	Residence	
1)	1	U:Urban	1351	1013
2)	2	R:Rural	7638	7967

w-employ	levels=11	Free	Employment	
1)	0	1:Not employed	7673	7727
2)	1	2:Agri-work	44	44
3)	2	3:Homestand/Manu	264	268
4)	3	4:Construc-work	94	97
5)	4	5:Poul/catt/tradi	403	379
6)	5	6:Domestic labour	143	132
7)	6	7:Semi-skilled as	159	153
8)	7	8:Profess-worker	70	61
9)	8	9:Business	78	75
10)	96	A:Others	40	22
11)	99	b:Not stated	21	21

Table 6.1: Unmet need by segments

Sl.# in order of magnitude of UCN	Sl. of segment (terminal nodes)	Description of segment	Unmet need (%) in the segment	Percentage of total unmet women	Cumulative percentage
1	21	Women who have 5+ children, have no education or education upto primary level, are in 36+ months open interval group and muslim.	29.40 (n=1133)	16.2	16.2
2	9	Women who have 1-4 children, are in 16-35 months open interval group, are muslim, and are either unemployed or employed in agriculture and other low-grade activities.	25.79 (n=1128)	14.1	30.3
3	7	Women who had childbirth less than 15 months ago and have one or two children.	25.44 (n=883)	10.9	41.2
4	14	Women who have 1-4 children, are aged 20-34 years and are in 48+ months open interval group.	13.92 (n=1464)	9.9	51.1
5	8	Women who had childbirth less than 15 months ago and have 3 or 4 children.	35.71 (n=478)	8.3	59.4
6	20	Women who have 5+ children, have no education or education upto primary level, and are in less than 35 months open interval group.	39.02 (n=434)	8.2	67.6
7	13	Women who have 1-4 children, are aged 20-34 years and are in 36-47 months open interval group.	18.47 (n=561)	5.0	72.6
8	18	Women who have 1-4 children, are in 36+ months open interval group, are aged 40-49 years and live in the rural areas.	29.71 (n=331)	4.8	77.4
9	15	Women who have 1-4 children, are in 36+ months open interval group, are aged 35-39 years and have either no education or education upto primary level.	23.78 (n=358)	4.1	81.5
10	2	Women who do not have any child, are aged 15-19 years and have either no education or have education upto the primary level.	14.81 (n=455)	3.2	84.7

11	1	Women who do not have any child and are aged 10-14 years.	28.30 (n=134)	1.8	86.5
12	3	Women who do not have any child, are aged 15-19 years, and have secondary or even higher level of education.	27.95 (n=132)	1.8	88.3
13	22	Women who have 5+ children, have no education or education upto primary level, are in 36+ months open interval group and are non-muslims.	19.43 (n=137)	1.3	89.6
14	11	Women who have 1-4 children, are in 16-35 months open interval group and are non-muslims.	13.17 (n=173)	1.1	90.7
15	23	Women who have 5+ children and have secondary or higher level of education.	14.70 (n=105)	0.7	91.4
16	12	Women who have 1-4 children, are in 36+ months open interval group, and are aged 10-19 years.	26.41 (n=55)	0.7	92.1
17	4	Women do who not have any child, are aged 20-29 years and have either no education or have education upto primary level.	4.97 (n=245)	0.6	92.7
18	5	Women who do not have any child, are aged 20-29 years and have secondary or higher level of education.	12.74 (n=94)	0.6	93.3
19	17	Women who have 1-4 children, are in 36+ months open interval group, are aged 40-49 years and live in the urban areas.	14.14 (n=59)	0.4	93.7
20	16	Women who have 1-4 children, are in 36+ months open interval group, are aged 35-39 years and have secondary+ education.	6.95 (n=78)	0.3	94.0
21	10	Women who have 1-4 children, are in 16-35 months open interval group, are muslim, and are employed in the manufacturing sector or white collar jobs.	6.49 (n=67)	0.2	94.2
22	6	Women who do not have any child and are aged 30-49 years.	1.82 (n=88)	0.1	94.3
23	19	System missing	29.73 (n=388)	5.6	100.0
		TOTAL			100.0

Figure 6.2: Unmet need segments by prodictors: Barisal division (1993-94)

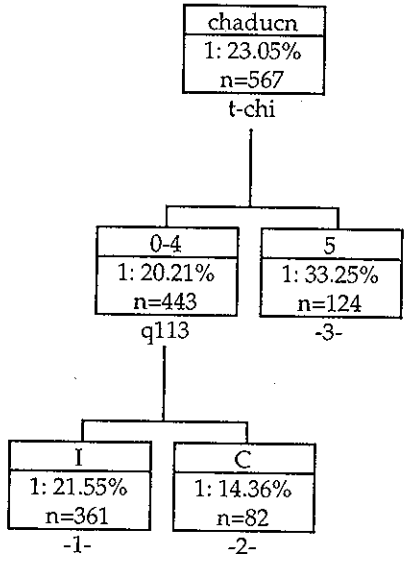


Figure 6.3: Unmet need segments by prodictors: Chittagong division (1993-94)

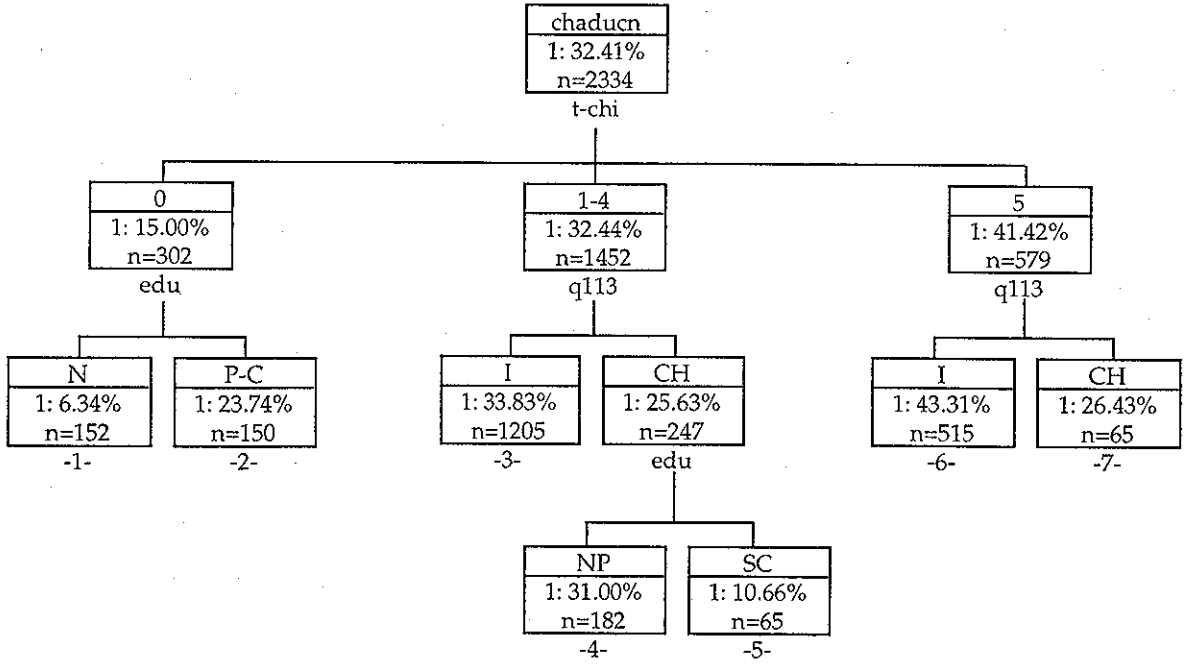


Figure 6.4: *Unmet need segments by prodictors: Dhaka division (1993-94)*

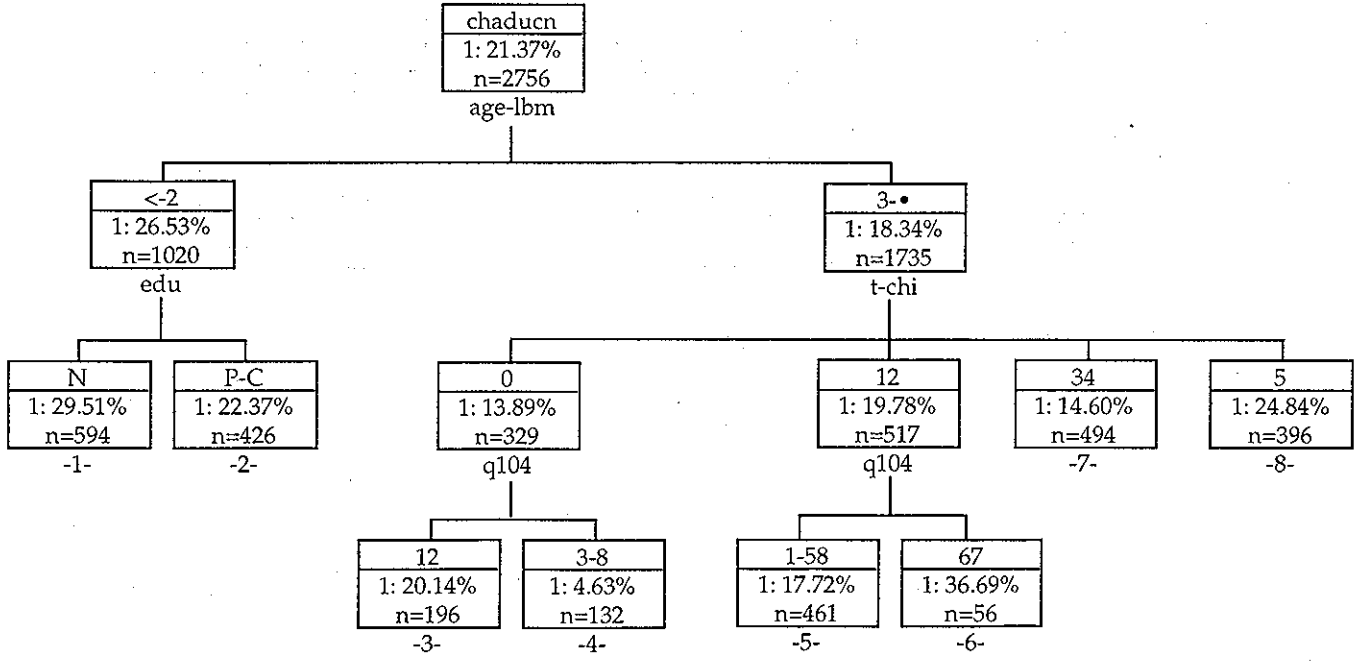


Figure 6.5: *Unmet need segments by prodictors: Khulna division (1993-94)*

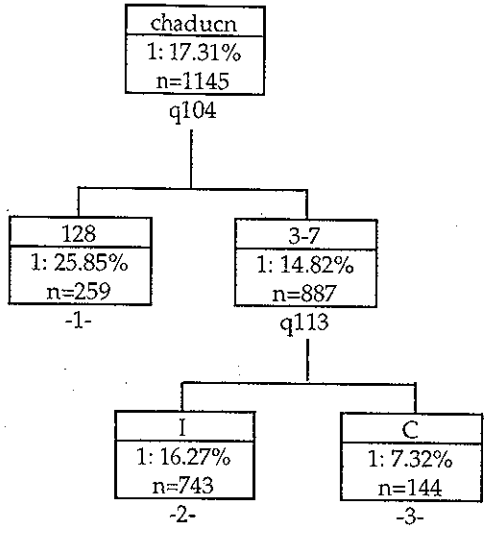
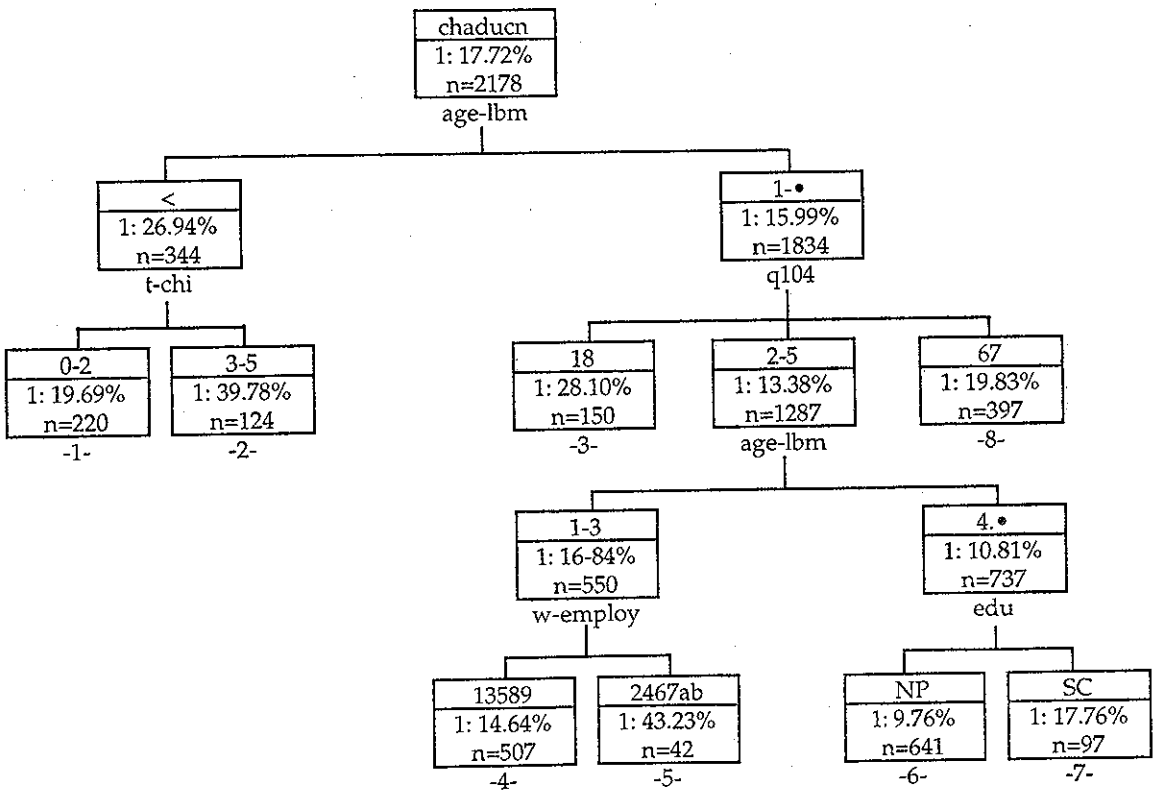


Figure 6.6: *Unmet need segments by prodictors: Rajshahi division (1993-94)*



7
Programmatic Interventions: What is Needed to Meet Unmet Need?

Programmatic Interventions Needed

This section describes the opinion of the program managers about the existing program's capacity to deal with the unmet need segments as well as the required changes in order to effectively reach some segments. Discussions were held with the relevant persons in the government and NGO Systems.[14]

The major areas in the discussion checklist for the FP program managers included the following points: possibilities of identifying women representing the individual predictor of unmet need, i.e., availability of predictor-specific information for women in the FWA register, in case of difficulties in identifying women by specific predictor what change(s) is (are) needed in the information (recording and reporting) system, problem(s) in identifying the major unmet need segments (each segment involves combination of indicators), and program components (FP methods, IEC, services, infrastructure, reimbursements, etc.) needed to deal with the unmet need segments.

The main predictors of unmet need emerging from this study are: number of living children, age of the women, open interval, location (urban/rural), women's education, women's employment status, and religion. All the program personnel interviewed were of the opinion that the women specific information about six out of the seven predictors of unmet need (except employment status of women) are available in the existing record-keeping system of the FP fieldworkers (FWA register). Some relevant information are also available at the static

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14 *Interviewees in the GOB System include DGFP, DG (NIPORT), Directors (MCH, MIS, Administration, IEM, Clinic, PD-FPCST, Dhaka), DDFP, TFPOs, FPIs and FWAs. In the NGO System, interviews were conducted with DG-FPAB, Country Director AVSC, EO-FPSTC, and Country Representative FPMD.*

centers (satellite clinics, FWCs, THCs, MCWCs). Thus, using the existing record-keeping system which is continuously being updated in each bimonthly visit to the clients by the FWAs the target unmet segments can easily be reached by the fieldworkers. Seven out of eighteen interviewees suggested that a column indicating the women's reproductive intentions (desire for additional children and when) should be added to the register. Along with information on their contraceptive status, this would help to identify the current level of unmet need.

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The unmet need based segmented visitation (proactive search strategy) approach was supported by all the program personnel interviewed. The reasons cited by them are as follows: (a) Not more than 40 percent of the CMWRAs are visited by a FP fieldworker in six months (similar is the findings of 1993-94 BDHS). (b) At present, there are 23,500 FWAs in the GOB FP system and about 10,000 fieldworkers (6000 in the USAID CA supported NGOs) in the NGO system. These 33,500 fieldworkers are supposed to serve 22.3 million married women. If the current visitation rate is so low and if it is financially difficult to increase the number of fieldworkers, then how would the situation be tackled with the increasing number of MWRAs and users (a doubling of the number within a decade)? (c) Most of the interviewees reported that if the present field-force can not be increased, or current workloads (visit to 20 households a day) reduced, alternative approaches should be developed. (d) Most program officials reported that, in many cases, non-users refuse to use family planning due to matters which could be effectively addressed by IEC. According to 1993-94 BDHS, about half of non-users under 30 years (or one-fourth of the overall) do not use FP reasons due to fear of health concerns or inadequate knowledge about FP (BDHS 1993-94: 63). In view of the above concerns, the designing of the fieldworkers' visitation pattern based on the unmet need segments was considered by the program managers as one of the effective ways to deal with the problem of increasing fieldworker-client contacts.

What interventions are likely to be the most appropriate in order to reach various unmet need segments? All the 23 unmet need segments identified in this study were described to the program managers and field personnel. There was a consensus among the interviewees that the number of segments (23) is too many to be handled and thus,

the major unmet need segments (in terms of the size of population in the segment) should be targeted first. Most program managers opted for the first seven unmet segments and discussed about the necessary programmatic interventions for these segments. These seven segments together constitute 72.6 percent of the total unmet need, or 16.7 percent of the total MWRAs, or 3.7 million MWRAs (assuming 22.3 million as the total MWRAs). Transforming these seven unmet need segments into users of FP would mean a CPR of 61.3 percent (current CPR 44.6% plus 16.7%). In other words by satisfying these seven unmet need segments it would be possible to cover 24 percent of the remaining distance to replacement level fertility rate (assuming the rate achievable with 70% CPR).

The programmatic interventions suggested by the interviewees for the seven major unmet need segments are presented in a matrix Table 7.1. For those unmet need women having 3 or more living children, irrespective of duration of open interval, the commonly suggested programmatic measures were provision of permanent methods through GOB and private sectors utilizing infrastructures such as FWC, THC, MCWC and private clinics; strong IEC using the fieldworkers (GOB & NGOs), community leaders and the radio/TV; provision for compensation payment and accompaniment allowances; and promotion of private sectors. For the unmet need women with less than 3 living children, irrespective of the duration of open interval, it was suggested by most that vigorous IEC efforts using the GOB and NGO fieldworkers should be undertaken to disseminate knowledge about pill, condom, injectables and IUD, and the services and supplies should be provided using the FWC, EPI camps, satellite clinics and all FP and health centers of the GOB, NGOs and the private sector. Thus, for most UCN segments the FP method suggested is mostly clinical, and for about 11 percent of the total women (segment 1, plus part of segment 2, plus part of segment 4, plus segment 5, plus segment 6, and plus part of segment 6) who are currently non-users the suggested methods were tubectomy/vasectomy. This is encouraging for the long-term success and sustainability of the FP program. However, given the current status of clinical FP services, especially inadequacies in the quality of care aspects (details see: Barkat *et al.*, 1994), erosion in the money value of compensation payments and lack of transport allowances for the person accompanying the clients, lack of trained medically competent

Table 7.1: Suggested programmatic interventions by major unmet need segments

Unmet need segments	FP method(s)	IEC	Services	Infrastructure	Reimbursement
1. Women who have 5+ children, have no education or education upto primary level, are in 36+ months open interval group and muslim (UCN: 3.7%)* (Size: 830,000)**	• Tubectomy/ vasectomy • IUD	• Fieldworker (GOB, NGO) • Community leaders • Mass media (TV/Radio)	• GOB • Private Sector • NGO	• FWC • THC • MCWC • Private clinics	•Compensation payment to clients • Transport allowance for accompanying clients • Promotion of private sectors
2. Women with 1-4 children, 16-35 mo's open interval, muslim (UCN: 3.2%) (Size: 710,000)	• Pill/Condom	• Fieldworker (GOB, NGO)	• GOB • NGO • Private sector	• FWC, EPI Camps and satellite clinics • All health & FP centers	
	•Injectable/ IUD • Tubectomy/ vasectomy (those with 3-4 children)	• Fieldworker (GOB, NGO) • Community leaders • Mass media (TV/Radio)	• GOB •Private sector •NGO	• FWC • THC •MCWC • Private clinics	•Compensation payment to clients • Transport allowance for accompanying clients • Promotion of private sectors
3. Women who had childbirth less than 15 mo's ago and have 1-2 children (UCN:2.5%) (Size: 560,000)	• Pill/condom • Injectable	• Fieldworker • Poster • Film/folk song/theater • Mass media (TV/Radio)	• GOB • NGO • Private sector	• All health and FP center • Satellite clinics • Private sector	-
4. Women with 1-4 children, age 20-34 years, 48 mo's open interval (UCN: 2.3%) (Size:510,000)	• Pill/Condom	• Fieldworker (GOB, NGO)	• GOB • NGO • Private sector	• FWC, EPI Camps and satellite clinics • All health & FP centers	-
	• Injectable/ IUD • Tubectomy/ vasectomy (those with 3-4 children)	• Fieldworker (GOB, NGO) • Community leaders • Mass media (TV/Radio)	• GOB • Private sector • NGO	• FWC • THC • MCWC • Private clinics	•Compensation payment to clients • Transport allowance for accompanying clients • Promotion of private sectors

5. Women who had childbirth less than 15 mo's ago and have 3 or 4 children (UCN:1.9%) (Size:420,000)	• Tubectomy/ vasectomy • IUD	• Fieldworker (GOB, NGO) • Community leaders • Mass media (TV/Radio)	• GOB • Private Sector • NGO	• FWC • THC • MCWC •Private clinics	•Compensation payment to clients • Transport allowance for accompanying clients • Promotion of private sectors
6. Women with 5+ children, have no or upto primary level education, and are less than 35 mo's open interval (UCN:1.9%) (Size:420,000)	• Tubectomy/ vasectomy • IUD	• Fieldworker (GOB, NGO) • Community leaders • Mass media (TV/Radio)	• GOB • Private Sector • NGO	• FWC • THC • MCWC • Private clinics	• Compensation payment to clients • Transport allowance for accompanying clients • Promotion of private sectors
7. Women who have 1-4 children, aged 20-34 years and are in 36-47 mo's open interval (UCN:1.2%) (Size:270,000)	• Pill/Condom ——— • Injectable/ IUD • Tubectomy/ vasectomy (those with 3-4 children)	• Fieldworker (GOB, NGO) ——— • Fieldworker (GOB, NGO) • Community leaders • Mass media (TV/Radio)	• GOB • NGO • Private sector ——— • GOB • Private sector • NGO	• FWC, EPI Camps and satellite clinics • All health & FP centers ——— • FWC • THC • MCWC • Private clinics	- ——— •Compensation payment to clients • Transport allowance for accompanying clients • Promotion of private sectors

* *Parentheses in columns 1 indicate % of total women. The second parenthesis gives estimated absolute size of the segment.*

** *Assuming 22.3 million total number of CMWRAs (See Chapter 3: Women in Reproductive Age).*

manpower (both in the GOB and NGO sectors) to perform sterilization operation, and lack of organizations capable of providing high quality training and education interventions for sterilization and IUD, further promotion of clinical methods may be a difficult task to accomplish.

While discussing the division-wise variations in the unmet need predictors, the program managers suggested special interventions for Chittagong Division - the division with the lowest CPR (29.3%) and highest UCN (32.4%). The number of living children and religion (better to say religiosity, conservatism) emerged as the two best predictors of unmet need in Chittagong Division. In Chittagong division, the muslim women having 1-4 living children constitute 54 percent and the muslim women having 5 or more living children constitute 30 percent of total unmet need. In order to satisfy the unmet need of these two segments in Chittagong Division, the commonly suggested measures were: (a) to undertake special IEC efforts, utilize all medias, especially ensure much higher use of religious community leaders, (b) to direct more NGO efforts in the division, (c) to fill-in all the vacant fieldworkers' position immediately, (d) to undertake innovative operations research in the low performing areas within the division, (e) to mobilize elected leaders, especially members of the parliament, and (f) to undertake special interventions for male motivation. The FP methods suggested were tubectomy/vasectomy for women having 4+ children, injectable/IUD for those having 3 living children, and pill/condom/ injectable for those having 2 living children. The program personnel interviewed were very categorical about the special program interventions need for Chittagong division. Even one of the top level program managers said that the average fieldworker/eligible couple ratio is not applicable for low performing areas in Chittagong division. He added "in order to be able to ensure increased frequency of contact between service providers and clients to provide counselling and support, my suggestion would be to deploy one fieldworker for 500 eligible couples in the low performing areas of Chittagong Division". It is plausible to conclude based on the extent of lack of knowledge, fear of side-effects, and social and familial disapproval prevailing in Chittagong division that more success can be achieved if the FP program in this division can "reach beyond the conventional boundaries of service provision to influence and alter the cultural and familial factors that limit voluntary contraceptive use" (Bongaarts and Bruce 1995).

Problems of Implementation of Unmet Approach

A recent strategic exercise on the Bangladesh Family Planning Program concluded that "by recognizing intenders and making family planning services accessible to them, Bangladesh family planning program can continue to expand. It is important that steps are taken to insure that the unmet needs of these couples satisfied... . To improve the performance of the program, continuation rates and use effectiveness of temporary methods need to be substantially improved and acceptors method mix should change in favor of more longer-acting methods" (Barkat *et al.*, 1996: 34). However, the transition from a target driven program with all its structured multi-level goals to one that is oriented to couples actively wishing to avoid pregnancy, is neither simple nor easy. The formulation and implementation of unmet need based prototype FP program has various aspects, which needs careful consideration. Some of the relevant problem aspects are discussed below:

- **Problems of Identification of Unmet Women by the Grass-root Level Fieldworkers**: The fieldworkers in the GOB and NGO systems use a record-keeping book (known as FW register). The fieldworkers are supposed to visit each woman in her catchment area (FW Unit) once in every two months. In each visit she is supposed to update her FW register. The following major information about the predictors of unmet need are available in the existing FW register: number of living children, age of the women, and open interval. Some relevant information are also available at the static centers (Satellite clinics, FWCs, THCs, MCWCs, etc.). Thus, women with unmet need can be reached using the existing record-keeping system which is supposed to be (continuously) updated in each bi-monthly visit to the clients by a fieldworker. After a detailed discussion with the fieldworkers and supervisory staff it was found that in order to identify the unmet women it would be feasible/proper to add two new columns in the existing register indicating women's reproductive intention (desire/not desire for additional children; and if desired, when).

  Identification of unmet women should be a continuous process and this should be viewed as a `flow', not as `stock'. Thus,

in order to maintain continuity of identification and actions, three things need to be done (a) ensure FWs bi-monthly visits to the women and registration of changes in the status of the women in each visit, (b) supervision and monitoring of the FWs visits, (c) reporting to the higher authority and finally to the central MIS system.

- **Problems of Nation-wide Implementation of Unmet Approach:** Since this is a new idea and the Bangladesh FP program is a huge one, it is suggested that all actions mentioned above should be field-tested in the low performing, middle performing, high performing, and relatively inaccessible FWA units. The field-testing should evaluate at least the following: flow of information, problems of identification of women, problems of dealing with the unmet women, matching of expressed intention and reality, problems in the register, program performances, problems of supervision and monitoring, and cost-efficiency of the approach.

- **Fieldworkers Training:** The field level staff are trained to deal with the current FW register. Any changes in the register and/ or new emphasis on the unmet women will necessitate a new demand for training to these staff. Such training should also be imparted to the supervisory staff. Accordingly, there will be need for changes in the training (basic and refreshers) curriculum of the relevant staff.

- **Service and Logistics MIS:** Both the service and logistics MIS (SMIS and LMIS) is based on the flow of information from the field. The SMIS serves two purposes: inform the program about the performances (in terms of Contraceptive Acceptance Rate) and setting (planning) the future targets. The LMIS is meant for tracking the supply situation and needs. If the program structure is based on unmet need approach then there will be obvious changes in the SMIS and LMIS. The program target setting previously based on historical trends will change, and will be based on the pattern of current users and unmet need women. The later will also change over time.

- IEC: The need for client-segmented IEC will multiply. The pattern of changed IEC is amply reflected in the "FP-MCH IEC Strategy

for Bangladesh: 1993-2000", already adopted by the Government and now in the process of implementation.

Prioritization of Unmet Need and Intender Population: All eligible wo/men in Bangladesh can be categorized into three broad groups: `Users' (44.6%), `Unmet Need' (22.9%) and `Non-user non-unmet' (32.5%). `Unmet need' approach deals with 22.9 percent wo/men. There exist one sub-group in the unmet need category comprised women who do not want to use FP in the future. This group constituting 8 percent of the total should not be a priority group and program resources should not be primarily devoted to this group. Within the unmet group, about 50 percent (11.3% of total) intend to use FP within the next 12 months, and this group should be the immediate program priority. A similar sub-group who intend to use FP within next 12 months was also found among the `non-unmet non-user' category. This group (11.8% of the total women) should form an another priority group for the program. Within the unmet group, there are some who have expressed their intention to use FP anytime after 12 months. This should be the other priority group. A similar group is also evident in the `non-unmet non-user' group. Thus, in order to meet the expressed demand of the eligible women the following prioritization can be used by the national FP program:

Priority	Category definition
1.	Among `unmet need' women who intend to use within next 12 months.
2.	Among `unmet need' women who intend to use longer-acting methods.
3.	Among `non-unmet non-user' who intend to use within next 12 months.
4.	Among `unmet need' women who intend to use anytime after 12 months (may be as a consequence of better services some/many of them will start using earlier).
5.	Among `non-unmet non-user' women who intend to use anytime after 12 months (more IEC, more visits, more efforts will be needed).

8
Summary, Conclusions and Recommendations

Demographic Characteristics of Women

- **Currently married women** constitute 20 percent of the total population in Bangladesh. Four-fifths of these women live in rural areas. The currently married women shows a relatively young age pattern with one-third below 25 years, and over one-half below 30 years.

- **Fertility** has declined very fast from 6.3 births per woman in the mid-1970s to 3.4 births during 1991-93. The age-pattern of fertility indicates that Bangladeshi women have children early in their childbearing age; by age 30, a woman will have given birth to over 70 percent of the children she will ever have. On average, women have given birth to three children by their late twenties, five children by their late thirties, and almost seven children by the end of their childbearing years.

- **Birth intervals** are generally long in Bangladesh. Slightly over three-fifths of non-first births during the last one year occurred three or more years after the previous birth, while over one-fourth took place 24-35 months after the previous birth. Younger women have shorter birth intervals than older women. A shorter median interval was recorded for those women whose preceding sibling was dead. The length of birth interval was relatively lower at the low parity groups.

- The **open interval** (time between the last birth and the date of interview) of 1 year declines and that of 7+ years increases as age increases.

- **Son preference and preference for small families** are evident. About three-fifths of the women prefer a two-child or less than two-child family, and another one-quarters considers a three-

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child family as the ideal size. Most importantly, among women below 30 years of age (comprising 58 percent of the total married women), about two-thirds prefer a two-child family. The desired family size declines with an increase in the number of living children. About one-third of the women already have more living children than desired.

- Almost all **child delivery** (96%) in Bangladesh takes place at home. Only 10 percent of births during the last five years were assisted by medically trained personnel (doctors or nurses, trained midwives and family welfare visitors). Considering the fact that there are about 3.5 million births in Bangladesh every year, a substantial number of unwanted pregnancies and undesirable short birth intervals, the issue of **post partum contraception** deserves increased attention.

- The **adolescent fertility** rate is one of the highest in the world, with 171 births per 1000 women aged 15-19 years. One in three adolescent women (or about 1.5 million out of 4.4 million) has begun childbearing. The adolescent married women deserve special considerations, because, as a group, they are the most under-served by the national FP program. This is moreso, because compared to the women at older ages, the adolescent women run higher risk of complications during pregnancy and child-birth, higher maternal mortality and morbidity, and less likely to receive early and adequate pre-natal care.
- The annual number of **newlywed couples** in Bangladesh is about 1.2 million. Newly-wed brides often had little family planning decision-making authority. The contraceptive use rate among the newly-wed couples is very low at 9 percent implying that they are underserved.

- **MR/abortion** (800,000 cases per year) prevents 0.52 million births (i.e., one-tenth of all births) per year. It is most likely that the number of women having contraceptive failures but not seeking MR services would be much higher than those seeking the services. About one-third of the women seeking MR services at formal service facilities are rejected, mostly on the ground of advanced pregnancy. It is obvious that with the increase in

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the level of knowledge about MR and availability of services, more women are likely to avail MR services and practice post-MR contraceptives, and thereby, will contribute more in the reduction of fertility.

Level of Unmet Contraceptive Need

- The estimated **unmet need** is 22.9 percent, which includes 12.9 percent of women who wanted to limit and 10 percent of women who wanted to delay childbirths. Among the three subgroups of non-user women, the subgroup of the non-amenorrheic non-pregnant women is most important, accounting for 15.5 percent of unmet need. The pregnant women constitute 2.8 percent and the amenorrheic women 3.4 percent of unmet need.

- The **total demand** (current use plus UCN) for family planning is approximately 67 percent, which is quite high in the absolute sense. The level of demand satisfied is moderate at 67 percent, indicating ample scope for further increase.

- If the CPR can be raised to 67 percent by satisfying the UCN, the TFR would decline from the present level (3.4) to slightly over 2.00 and NRR will become about 1, which is the national demographic goal to be attained by 2005.

Unmet Need Women: Demo-Economic Characteristics

- Ninety percent of unmet need women live in **rural** areas. More than 65 percent of unmet need women live in Chittagong and Dhaka divisions, **Chittagong** alone accounting for 36 percent.

- The unmet need women are concentrated in the **lower age-groups**: women <30 years comprise more than 50 percent of UCN women. The proportion of UCN women rises with the age upto 20-24 years, and then gradually declines.

- The pattern of distribution of both the users and those with unmet need by their **age** are inverted U-shaped: the proportions of users

as well as unmet need increase upto certain age group, and then start dwindling.

- The pattern shown by the **parity** distribution of unmet need women is similar to the pattern of their age distribution. The total demand is highest in the 3-children group.

- The proportion of the women with unmet need declines with increased level of **education**. The unmet need women are mostly concentrated among the uneducated women. The relationship between education and unmet need is in the expected direction. As educational level increases, more and more women become users of FP methods to avert or delay childbirth, and thus, as more and more `need' is satisfied, unmet need declines.

- Increased **employment** in the `modern' sector reduces the extent of unmet need. Ninety percent of UCN women are concentrated in the group of women who are unemployed, or who are employed in agriculture or in domestic activities. The most important reason for such a relationship is that the women employed in the modern sector are also those who are educated. Thus, the relationship between education and unmet need greatly determines the relationship between employment status and unmet need.

May be difficult to convince to try again ?

- A considerably high proportion of the women with unmet need had used some FP method in the past. That a proportion of the past users have discontinued use is a pointer to the program managers of the **need to improve quality of care** to address the problems of those discontinuing use because of side-effects.

- The unmet need women are heavily concentrated in the group of **mothers of young children** (less than 15 months old). This group is likely to contain a large number of amenorrheic women who do not want another pregnancy, at least not soon.

Unmet Need and Future Intention

- Most of the unmet need women - 65 percent-expressed their future intention to contracept. Also, about 68 percent women of the "non-user non-unmet need" category (or 22% of the total women) expressed their future intention to contracept. In so far as the acceptance of family planning is concerned, these women belong to the most "hard-nut-to-crack" category - users and unmet need women are the other two categories. That even a sizeable proportion (36%) of these women intended to contracept within next 12 months is a manifestation of drastic improvement in the knowledge and attitude of women towards family planning in the Bangladesh society.

- Since almost all intenders in the "non-user non-unmet" category belong to the younger age groups (below 30 years), there is ample scope of motivating them at least to space childbirth. About 41 percent of these women already have 2 or more children. Therefore, there is also sufficient scope of motivating them to limit childbirth.

Predictors of Unmet Need and Segmentation of Unmet Women

- Number of **living children** (parity) emerges as the **best predictor** of unmet need. The highest number of women and those with unmet need are in the middle parity group (1-4 children). Among women who have no children, unmet need is very low (14.6%). Unmet need is quite high among women who have 5+ children (30%).

- Each of the three parity groups has been split into a number of subgroups to derive the second best predictor for each group. The second best predictor is **age of women** for zero parity group, **length of open interval** for the middle parity group, and **education** for the last parity group. Education, employment, age, religion, and length of open interval emerge as the third best predictor; and employment, length of open interval, place of residence, and religion as the fourth best predictor.

- The **predictors** of unmet need vary by **divisions**. The best predictor of unmet need in Chittagong is the number of living children, with religion and education being the second best predictors. For Dhaka division, open birth interval has come out as the best predictor, and education and the number of living children as the second best predictors.

- **A total of twenty-one segments of unmet need women were identified. However, more than half of the unmet need women are concentrated in the top four segments and two-thirds in the top six segments.**

Programmatic Interventions Needed to Meet Unmet Need

- The main predictors of unmet need emerging from this study are: number of living children, age of the women, open interval, location (urban/rural), women's education, women's employment status, and religion. Women- specific information about five out of the seven predictors of unmet need (except education and employment status of women) are available in the existing record-keeping system of the FP fieldworkers (FWA register). Some relevant information are also available at the static centers. Thus, using the existing record-keeping system which keep continuous updating of information on each eligible women during each bimonthly visit to the clients by the FWAs the target unmet segments can be reached by the fieldworkers. Program personnel suggested that a column indicating the women's reproductive intentions (desire for additional children and when) can be added in the register. Along with information on their contraceptive status, this would help to identify the current level of unmet need.

- The designing of the fieldworkers' visitation pattern, based on the unmet need segments (proactive search strategy), was considered by the program managers as one of the effective ways to deal with the problem of increasing fieldworker-client contacts.

- The program personnel agree that the major unmet need segments (in terms of the size of population in the segment) should be addressed first. Most program managers opted for the top seven unmet segments and discussed about the necessary programmatic interventions for these segments. These seven segments together constitute 72.6 percent of the total unmet need, or 16.7 percent of the total MWRAs, or 3.7 million MWRAs (assuming 22.3 million as the total MWRAs). Transforming these seven unmet need segments into users of FP would mean a CPR of 61.3 percent (current CPR 44.6% plus 16.7%).

- The programmatic interventions suggested by the interviewees include FP method(s), IEC, services, infrastructure, and reimbursement. For example, for those unmet need women having 3 or more living children, irrespective of duration of open interval, the commonly suggested programmatic measures were provision of permanent methods through GOB and private sectors utilizing infrastructures (FWC, THC, MCWC and private clinics); strong IEC using the fieldworkers (GOB & NGOs), community leaders and the radio/TV; provision for compensation payment and accompaniment allowances; and promotion of private sectors.

- For most UCN segments the FP method suggested is mostly clinical, and for about 11 percent of the total women who are currently non-users the suggested methods were tubectomy/ vasectomy. This is encouraging for the long-term success and sustainability of the FP program. However, given the current status of clinical FP services, especially inadequacies in the quality of care aspects, further promotion of clinical methods may be a difficult task to accomplish.

- The program managers suggested special interventions for Chittagong Division - the division with the lowest CPR (29.3%) and highest UCN (32.4%). The number of living children and religion emerged as the two best predictors of unmet need in Chittagong Division. In order to satisfy the unmet need of these two segments in Chittagong Division, the commonly suggested measures were to: undertake special IEC efforts, utilize all medias, especially ensure much higher use of religious community leaders;

direct more NGO efforts in the division; fill-in all the vacant fieldworker positions immediately; undertake innovative operations research in the low performing areas within the division; mobilize elected leaders, especially members of the parliament; undertake special interventions for male motivation. The FP methods suggested were tubectomy/vasectomy for women having 4+ children, injectable/IUD for those having 3 living children, and pill/condom/injectable for those having 2 living children.

- The formulation and implementation of unmet need based prototype FP program has various aspects, which needs careful consideration. **Some of the relevant problem aspects are associated with the identification of unmet women by the grass-root level fieldworkers, nationwide implementation of unmet approach, fieldworkers training needs, reorientation of service and logistics MIS, and need for client-segmented IEC, and above all policy decisions to replace the target oriented program by client unmet-need oriented program.**

- In order to meet the expressed demand of the eligible women the following prioritization can be used by the national FP program: `unmet need' women who intend to use within next 12 months; `unmet need' women who intend to use longer-acting methods; `non-unmet non-user' who intend to use within next 12 months; `unmet need' women who intend to use anytime after 12 months; and `non-unmet non-user' women who intend to use anytime after 12 months.

- Nation-wide implementation of the redesigned strategy should be preceded by intensive operations research and field testing. The field-testing should be targeted to evaluate the following: flow of information, problems of identification of women, problems of dealing with the unmet women, matching of expressed intention and reality, problems in the fieldworkers record-keeping books, program performances, problems of supervision and monitoring, cost-efficiency of the approach, and performances of client-oriented vis-a-vis target oriented program.

References

Abedin, N (1997). *Rational for Re-organization of the Health and Population Sector and the Proposed Process*, Draft Health and Population Sector Strategy (HPSS), Ministry of Health and Family Welfare, Government of Bangladesh.

Alamgir, M (1978). *Bangladesh: A Case of Below Poverty Level Equilibrium Trap*, Dhaka. The Bangladesh Institute of Development Studies.

Alauddin, M., and M.A. Islam (1995). "Improvement in FP-MCH Program and its Sustainability: Some Old Thoughts Revisited, New Ones Added", presented at the seminar on *Bangladesh Family Planning Program: Achievement and Challenges*, Organized by Population Development and Evaluation Unit, Implementation Monitoring and Evaluation Department, Ministry of Planning, Government of Bangladesh. Khulna, May 2, 1995.

BAPSA (Bangladesh Association for Prevention of Septic Abortion) (1993). *MR Newsletter*, Number 2, December 1993.

Barkat, A. (1996). "Population distribution, urbanization and internal migration", in Barkat A. and S.R. Howlader (eds) *Population and Development, National Plan of Action*, Ministry of Health and Family Welfare, GOB, Dhaka.

Barkat, A., and S.R. Howlader (1995). "Research in Population and Reproductive Health: An Overview and Need for Prioritization", presented at the *Follow-up Workshop on Research Priorities in Population and Reproductive Health*, July 29-30, Rajendrapur, NIPORT/Population Council/GTZ.

Barkat, A., J. Helali, M. Rahman, M. Majid, and M.L. Bose (1995). *Knowledge, Attitude, Perception and Practices Relevant to the Utilization of Emergency Obstetric Care Services in Bangladesh: A Formative Study*, prepared for UNICEF-supported EOC project, Bangladesh, University Research Corporation (Bangladesh)

Barkhat, A., M.A. Islam, M.B. Rahman, and A. K. M. Rafiq-uz-Zaman (1995). *Family Planning Program Stratigic Plan for the Government of Bangladesh*, presented for discussion at the Expert group Research Triangle Institute, North Corolina, USA.

Barkat, A., B. Khuda, J. Helali, A. Rahman, A.J. Faisel, and M.L. Bose (1994). *Situation Analysis of Clinical Contraceptive Service Delivery System in Bangladesh*, prepared for the Ministry of Health and Family Welfare, GOB and AVSC International, University Research Corporation (Bangladesh), Dhaka.

Bangladesh Demographic and Health Survey 1996-97. *Preliminery Report*, NIPORT, Mitra and Associates, and Macro International.

BBS (1995). *Secondary Analysis of 1991 Census.*

BDHS (1993-1994). *Data Diskettes for Secondary Analysis.*

Begum, S.F., H. Kamal, and G.M. Kamal (1987). *Evaluation of MR Services in Bangladesh*, BAPSA, Dhaka.

Bogue, D.J. (1974). "Population perspectives: Some views from a sociologist", in *Population Dynamics Quarterly*, 2(2):2,20. Spring.

Bongaarts, J., and J. Bruce (1995). "The causes of Unmet Need for Contraception and the Social Content of Services", in *Studies in Family Planning*, 26(2): 57-75.

Bongaarts, J., and J. Menken (1983). "The Supply of Children: A Critical Essay". In *Determinants of Fertility in Developing Countries*, Vol.1: 1-26, N.Y: Academic Press.

Boulier, B.L. (1985). *Evaluating unmet need for contraception: Estimates for thirty-six developing countries*, Washington, D.C., World Bank (Staff Working Papers No.678, Population and Development Series No.3).

Caldwell, J. (1994). *The Course and Causes of Fertility Decline*, IUSSP Distinguished Lecture Series on Population and Development, ICPD, Cairo, 1994.

Carty, W., N. Yinger, and A. Rosov (1993). *Success in a Challenging Environment: Fertility Decline in Bangladesh*, The World Bank, Washington D.C., and Population Reference Bureau, Inc. Washington D.C.

Cleland, J., J. Phillips, S. Amin, and G.M. Kamal (1994). *The Determinants of Reproductive Change in Bangladesh*, Regional and Sectoral Studies, World Bank, Washington D.C.

Degraff, D.S, and V. DeSilva (1991). "Unmet need for contraception in Sri Lanka", in *International Family Planning Perspectives*, 17(4):123-130, December.

Foreit, K., P. Mostajo, E. Gamarra, and A. Padilla (1992). "Unmet demand for contraception vs numet demand for appropriate contraception", *Presented at the 120th Annual Meeting of the American Public Health Association*, Washington, D.C.

Freedman, R., L.C. Coombs (1974). *Cross-cultural comparisons: Data on two factors in fertility behavior*, Population Council, New York.

Freedman, R., L.C. Coombs, and M.C. Chang (1972). "Trends in family size preferences and practice of family planning: Taiwan, 1965-1970", in *Studies in Family Planning*, 3(12):281-296, December.

GOB (1994). *Bangladesh Population Census 1991, Analytical Report Vol.1*, Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Dhaka.

GOB-MOHFW (1994). *Future Challenges in the FP-MCH Programme: A Plan for Action*, prepared by National Steering Committee for Future Challenges in the FP-MCH Programme, MOHFW, Government of Bangladesh.

GOB (1995). *Statistical Pocket Book of Bangladesh 1995*, Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Dhaka.

GOB (1995). *1994 Statistical Yearbook of Bangladesh*, Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of Bangladesh, Dhaka.

GOB (1995). *Bangladesh Health and Demographic Survey: Findings in Brief 1994 and 1995*, Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Dhaka.

GOB-UNICEF (1991). *Rural Water Supply and Sanitation Programme 1992-95*, Dhaka.

Government of Bangladesh (1996). *Strategic Directions for the Bangladesh National Family Planning Program: 1995-2000*, Prepared by Barkat, A., M.A. Islam, A.K.M. Rafiquz-Zaman, M.B. Rahman, A. Al Sabir, D. Chao, J. Ross, J. Tarvid, W. Winfrey, M.St. John, and M. Pendzich, for Ministry of Health and Family Welfare. ISBN. 984-03-0000-8.

Hatmadji, S.N., and A. Pebley (1982). "The Unmet Need for Family Planning in Indonesia", *Unmet Need for Contraception in World Fertility Surveys of Developing Countries*, Honolulu: East-West Center.

IPPF (International Planned Parenthood Federation) (1994). *Understanding Adolescents: An IPPF Report on Young People's Sexual and Reproductive Health Issues*, London.

Islam, N., M.M. Islam, and H.K.M. Yusuf (1995). *Fertility and Reproductive Health Status of Married Adolescents in Rural Bangladesh*, PDEU, IMED, Ministry of Planning, GOB, Dhaka.

Kamal, G.M., and S.F. Begum (1990). *Study on Interventions Necessary for Preventing Rejection of MR Clients:* BAPSA, Dhaka.

Kamal, G.M. (1992). "Menstrual Regulation Service Provision in Bangladesh", in *Proceedings of the International Symposium on Antiprogestins*, BAPSA Publication #

Kantner, A., C. Lerman, and Y. Yusuf (1995). "What can we say about fertility trends in Bangladesh? An evaluation of the 1991 Population Census", in *Asia-Pacific Population Research Reports*, Number 5, June 1995, East-West Center, Honolulu, USA

Khuda, B., and M.B. Hossain (1995). "Fertility Decline in Bangladesh: Toward an Understanding of Major Causes", *Health Transition Review*, The Australian National University, Canberra (Forthcoming).

Khuda, B., and S.R. Howlader (1990). "Demand Aspects of Fertility and Family Planning", in Duza B.M. (ed) *South Asia Study of Population Policy and Programs: Bangladesh*, UNFPA, Dhaka.

Khuda, B., and S.R. Howlader (1988). "Unmet Contraceptive Needs and Reasons for Non-use", in Kantner. A, et al., (eds) *Bangladesh Contraceptive Prevalence Survey-1985. Secondary Analysis*, Mitra and Associates, Dhaka.

Khuda, B., and S.R. Howlader (1988). Unmet Contraceptive Need in Bangladesh, International Science and Technology Institute (ISTI), USA.

Khuda, B. (1977). "Value of Children in a Bangladesh Village", in J.C. Caldwell (ed.) *The Persistence of High Fertility: Third World Population Prospect*, The Australian National University, Canberra

Khuda, B. (1989). *Rural Development and Change: A Case Study of a Bangladesh Village*, University Press Ltd, Dhaka.

Knodel, J. (1983). "Natural Fertility: Age Patterns, Levels and Trends", In *Determinants of Fertility in Developing Countries*, Vol. 1, 26-60, New York: Academic Press.

MacManus, K., and A. Barkat (1995). "Principles of Sustainable Programs, Lessons Learned from the International Scene and their Applicability in Bangladesh", paper presented at the *Future Search Workshop on Sustainability of FP-MCH Program of NGOs in Bangladesh*, organized by Pathfinder International, Rajendrapur, Bangladesh, July 16.

Mauldin, W.P., and S.J. Segal (1988). "Prevalence of Contraceptive Use: Trends and Issues", in *Studies in Family Planning*, 19: 335-353.

Mauldin, W.P., and J. Ross (1994). "Prospects and Program for Fertility Reduction, 1990-2015", in *Studies in Family Planning*, Volume 25, Number 2, March/April 1994, N.Y.

Mcfarlane, C.P., J.S. Friedman, L. Morris, and H.I. Goldberg (1994). *Jamaica Contraceptive Prevalence Survey 1993: Sexual experience, contraceptive practice and fertility*, National Family Planning Board, Kingston, Jamaica.

Mitra, S.N. (1987). *Bangladesh Contraceptive Prevalence Survey-1985*, Mitra and Associates, Dhaka.

Mitra, S.N., M.N. Ali, S. Islam, A.R. Cross, and T. Saha (1994). *Bangladesh Demographic and Health Survey 1993-1994*, National Institute of Population Research and Training (NIPORT), Dhaka; Mitra and Associates, Dhaka; and Macro International Inc., USA.

Mitra, S.N., A. Larson, G. Foo, and S. Islam (1990). *Bangladesh Contraceptive Prevalence Survey-1989, Final Report*, Mitra and Associates, Dhaka.

Mitra, S.N., C. Larman, and S. Islam (1993). *Bangladesh Contraceptive Prevalence Survey-1991, Final Report*, Mitra and Associates, Dhaka.

Morris, L. (1996). *Unmet need estimates from FP/RHS in Latin America and the Caribbean*, Centers for Disease Control and Prevention.

Morris, L. (1974). "Estimating the need for family planning services among unwed teenagers, in *Family Planning Perspectives*, 6(2):91-97, Spring.

Mueller-Dixon, R., and A. Germain (1992). "Stalking the Elusive "Unmet Need" for Family Planning", in *Studies in Family Planning*, 23(5): 330-335.

Osmani S.R. (1987). *The Food Problems of Bangladesh*, World Institute for Development Economics Research of the United Nations University, Working Paper No. 29, Finland.

Pritchett, L.H. (1994). "Desired fertility and the impact of population policies", in *Population and Development Review*, 20(1):1-55, March.

Rahman, H.Z., and M. Hossain, eds., (1992). *Re-thinking Rural Poverty: A Case for Bangladesh*, Dhaka. Bangladesh Institute of Development Studies.

Robey, B., J. Ross, and I. Bhushan (1996). "Meeting unmet need: New strategies", in *Population Reports, Series J, No.43*, September, Johns Hopkins School of Public Health, Population Information Program, Baltimore.

Ross, J.A. and P.B. San (1995). "Unmet Need in Vietnam: Who Needs What and When", presented at *1995 Meeting of the Population Association of America*, San Francisco, April 6-8, 1995.

Ross, J.A. (1994). "Program Implementation of the Unmet Need Approach", presented at *1994 Meeting of the Population Association of America.*

Salways, S., K. Jamil, Q. Nahar, and S. Nurani (1993). *Perception of Pregnancy Risk and Contraceptive Use in the Post-partum Period among Women in Dhaka Slums*, Urban FP/MCH Working Paper No.15, ICDDR,B, Dhaka.

Sinding, S.W. and M.F. Fathalla (1995). "The great transition", in *Populi*, 18-21, December.

Sinding, S., J.A. Ross, and A. G. Rosenfield (1994). "Seeking Common Ground: Unmet Need and Demographic Goals", in *International Family Planning Perspectives*, (20:1): 23-27.

Stalker P. (1995). *A Fork in the Path: Human Development Choices for Bangladesh*, FAO, ILO, UNDP, UNFPA, WHO, The World Bank, Dhaka.

Stover, J., and L. Heaton (1995). *Unmet Need in Egypt, Morocco and Jordan*, Prepared for the Asia Near East Bureau USAID by the OPTIONS II Project, The Futures Group International, USA.

Streatfield, K., S.J. Haider, and S.R. Chowdhury (1994). "Implication for Policy and Strategies", in *Bangladesh Demographic and Health Survey 1993-1994*, NIPORT, Mitra and Associates, Macro International Inc.

United Nations (1995). *Population and Development. Volume 1. Programme of Action adopted at the International Conference on Population and Development*, Cairo 5-13 September 1994; Department of Economics and Social Information and Policy Analysis.

UNICEF (1991). *Impressions of Women and Children in Bangladesh*, UNICEF, Dhaka.

USAID/Dhaka (1995). *Population and Health Customer Appraisal: Synopsis.*

Vlassof, C., and B. Khuda (ed.) (1986). *Impact of Modernization on Development and Demographic Behaviors: Case Studies in Seven Third World Countries*, International Development Research Centre, Hawaii.

Westoff, C.F. (1994). "The concept of unmet need", in *International Planned Parenthood Federation, Unmet need: Planned Parenthood Challenges*, 1994/1: 5-8, January.

Westoff, C.F. (1990). "Reproductive Intentions and Fertility Rates", in *International Family Planning Perspectives*, 16(3): 84-90.

Westoff, C.F. (1978). "The Unmet Need for Birth Control in Five Asian Countries", in *International Family Planning Perspectives and Digest 4* (1): 9-18

Westoff, C.F. (1988). "Is the KAP-Gap Real?" *Population and Development Review*, 14 (2): 225-232.

Westoff, C.F. and L.H. Ochoa (1991). *Unmet Need and the Demand for Family Planning, Comparative Studies 5*, Demographic and Health Surveys, Institute for Resource Development Inc., Maryland.

Westoff, C.F. and L.H. Ochoa (1991). "The Demand for Family Planning: Highlights from a Comparative Analysis", in *Proceedings, Volume 1, Demographic and Health Surveys, World Conference*, August 5-7, 1991, Washington D.C

Westoff, C.F. and A. Bankole (1995). "The Potential Demographic Significance of Unmet Need", presented at *1995 Meeting of the Population Association of America*, San Francisco, April 6-8, 1995.

Westoff, C.F. and A.R. Pebley (1984). "The Measurement of Unmet Need for Family Planning in Developing Countries", in *Survey Analysis for the Guidance of Family Planning Programs*. Edited by J.A. Ross and R. McNamara. Belgium: Ordina Editions.

Westoff, C.F., and A. Pebley (1982). "Alternative Measurements of Unmet Need for Contraception in World Fertility Surveys of Developing Countries", in *Unmet Need for Contraception in World Fertility Survey of Developing Countries*, Honolulu: East-West Center.