UNIVERSITY OF SOUTHAMPTON

FACULTY OF LAW, ARTS & SOCIAL SCIENCES

School of Social Sciences

MALE INVOLVEMENT IN REPRODUCTIVE HEALTH IN BANGLADESH

by

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Thesis for the degree of Doctor of Philosophy

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This thesis is dedicated to my parents MD Abdul Aziz and

Zahura Begum,

and my beloved wife Moupia Rahman

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

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A growing consensus has emerged among policy planners to involve males in the reproductive health programmes. One reason for this is men's dominating role in the family decision process. This is globally acknowledged, after the International Conference on Population and Development (ICPD) held in Cairo, 1994. Even though Bangladesh has formally consented to the ICPD goals, little has been done so far to understand men's involvement in the overall process of ongoing reproductive health programmes. This thesis investigates the extent of male involvement in reproductive health in Bangladesh using recent Bangladesh Demographic and Health Survey data. This study addresses men's involvement in reproductive health in terms of their knowledge about, approval of, and couple communication regarding family planning (FP) and their involvement in contraceptive use. The main results are summarized as follows. Despite men's contraceptive knowledge being universal, many men lack knowledge of different methods. Men are far behind their wives in terms of approval of FP. About one-half of the men do not discuss FP with their wives. Men's participation in contraceptive use in terms of male method use is still inadequate. Two-level logistic regression analyses suggest important determinants of men's knowledge about, approval of, couple communication regarding and current use of FP. Inconsistencies found in reports of contraceptive use between husbands and wives, have been investigated. Additionally, this study investigates couple use of contraceptives controlling for consistent reports of FP use between husbands and wives. Analysis suggests that in Bangladesh about 70 percent of the couples take FP decisions jointly, which is appreciable. This study further investigates the factors influencing the decision-making in FP, that is, decision taken jointly, only by husband and only by wife. Analysis reveals that if the FP decision is taken only by husband the couple is more likely to use male methods, while the couple is more likely to use female methods if the decision is taken by wife alone. Divisional variations were found in the analyses. Significant community level variations were identified for couple communication regarding and current use of FP which highlights the need for policy attention. Findings suggest that male involvement in reproductive health in Bangladesh is inadequate. The thesis concludes with a discussion of the main results, and suggests policy implications based on the research findings.

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Chapter 1

Introduction

Male involvement in reproductive health is the most important component to be addressed by the ongoing reproductive health programmes in Bangladesh. As dominating partners in the family, males have control over many of the reproductive health behaviour of their wives. Their authority ranges from approval of family planning and use, helping in antenatal and post natal care for their wives, and allowing their wives to go outside of homes, to financing any health care needs. In most of the cases health care seeking behaviour of the women is subject to the approval from their husbands or from any elderly male member of the family. None of the reproductive health programmes in Bangladesh can, therefore, ensure quick improvement of the reproductive health status of women without involving men in the process. This research focuses on how men are involved in the reproductive health related activities in Bangladesh.

Bangladesh is a small country in South-Asia with an area about 147 570 square kilometres. With a population of over 129 million, according to the census of 2001, Bangladesh stands as the ninth most populous country in the world with a population density of 834 people per square kilometre. It is mostly surrounded by India and by Myanmar in the south-east part, and in the south there is Bay of Bengal (Fig 1.1). The current population growth rate of Bangladesh is 1.48 percent per year. It has a male to female sex ratio about 103.8:100 and the life expectancy at birth is 68.8 years.

Bangladesh has a successful family planning history (Amin et al., 1987; Larson and Mitra, 1992; National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001). The contraceptive prevalence rate (CPR) increased from only 7.7 in the year 1975 to 53.8 in 1999-2000 (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001). At the same time the total fertility rate (TFR) dropped down to 3.3 in 1999-2000 from a high rate of 6.3 in 1975 (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001).

Except during the first few years, Bangladesh's family planning programme has been totally women-oriented and there has been a strong door-to-door contraceptive supply system by female family planning workers with intensive counselling activities. This is regarded as the key factor in the success of family planning programme of Bangladesh. Due to anticipations in budget constraints a shift from domiciliary distribution to site-based family planning services took place gradually after 1996, which was found to be as effective as the previous system (Routh et al., 2001). However, the shift to the site-based family planning services was brought back to the domiciliary distribution again by the current government probably because of the realization that the change may show negative impact on the programme outcomes.

Because of the long-term ignorance by the family planning and reproductive health programmes, male were not expectedly involved in the family planning and reproductive health activities. The last Bangladesh Demographic and Health Survey (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001) indicated that almost 6.1 percent of female clients who discontinued their family planning methods in the last five years did so because of their husbands' objections or unfavourable attitudes toward the method. About 4.1 percent among the non-users of family planning mentioned their husbands' opposition as a reason for not using any method in future. Male sterilization accounted for only 0.5 percent and condom use was as low as 4.3 percent among the currently married women. Out of an overall contraceptive prevalence rate of 53.8 percent, the current use of methods by males was only 8.8 percent (condom, male sterilization and withdrawal) (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001; see Table 1.1). This indicates a culture of non-use of contraceptive methods among males.

There are three principal areas of reproductive health other than family planning, which have been identified as foremost for reproductive health services in Bangladesh. These are: maternal care or safe motherhood; prevention of unsafe abortion; and information and services for reproductive tract infections (RTIs), sexually transmitted diseases (STDs), Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS), all of which are directed to women only (Piet-Pelon, 1997). Participation of men in these areas is still unclear. The last three Demographic and Health Surveys (DHS) in Bangladesh showed a stagnating of the TFR around 3.3 children per woman even though the CPR demonstrated an increasing trend (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001). This stimulates the idea among the policy makers that males should be involved in the reproductive health and family formation processes.

Table 1.1 Current use of contraceptive methods by currently married women aged 10 to 49, BDHS, 1999-2000

Method	Percentage
Pill	23.0
IUD	1.2
Injectables	7.2
Condom	4.3
Female Sterilization	6.7
Male Sterilization	0.5
Periodic Abstinence	5.4
Withdrawal	4.0
Other	0.9
Norplant	0.5
Non-use	46.3

Source: National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001

After the International Conference on Population and Development (ICPD) in Cairo in 1994, which highlighted the importance of male involvement in family planning and reproductive health, a growing interest has been shown by the government of Bangladesh in including men in the ongoing process (Hardee et al., 1999). But so far only a little has been done to understand the status of male's current involvement in the overall family planning and reproductive health activities, which is the first step in the process. Men have their own reproductive health needs as well. However, the ongoing family planning and reproductive health programme of Bangladesh is more likely to show an interest in involving men in the process to increase women's reproductive health status, leaving men's reproductive health issues unaddressed. Possible budget constraints may be one of the causes behind this.

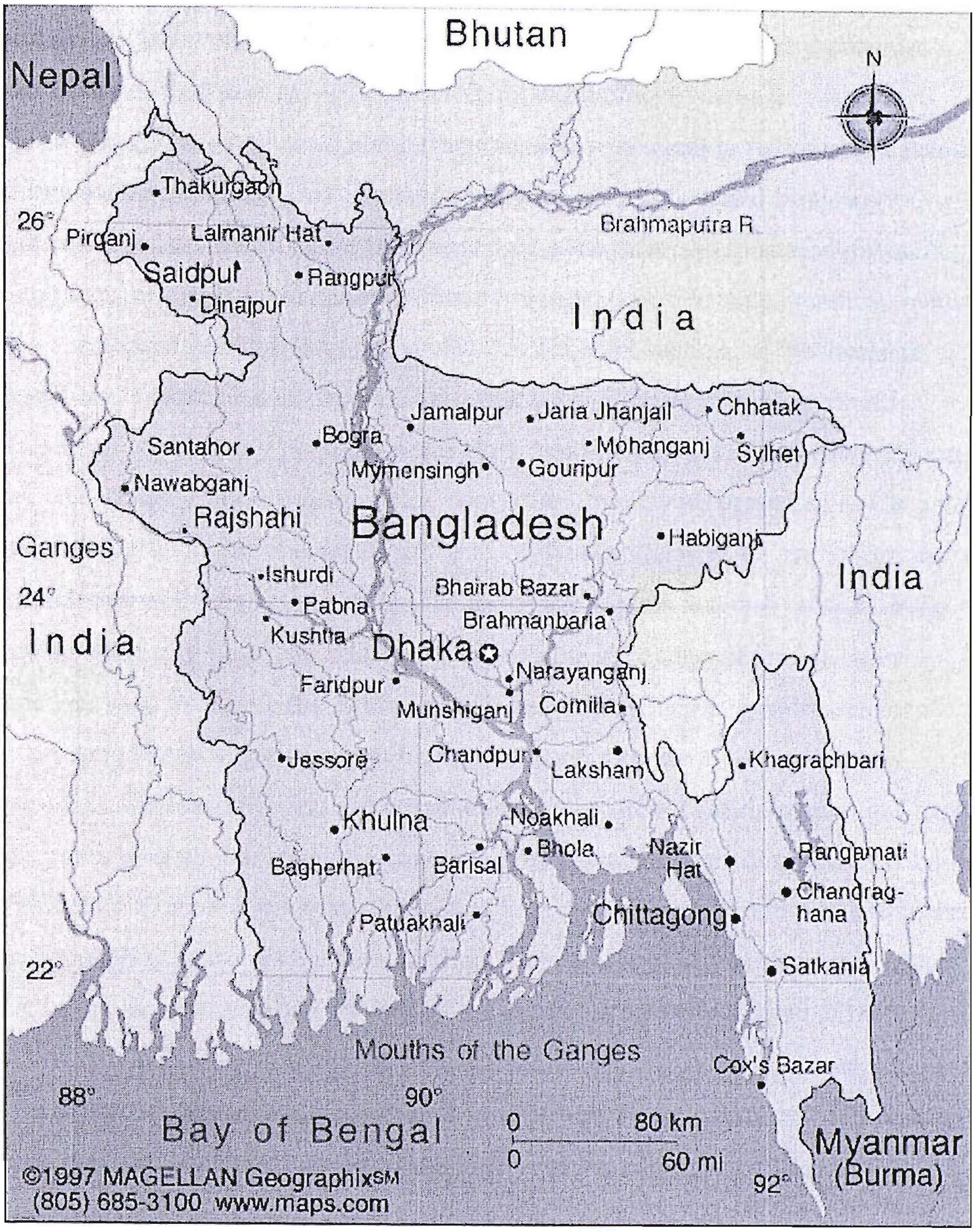
1.1 Objectives of the thesis

Male involvement in reproductive health has many components, for example, male involvement in FP, pregnancy care, domestic violence and awareness of sexually transmitted infections (STIs) and HIV/AIDS, which will be discussed in Chapter 2. However, male involvement in family planning is the principal activity by which men can contribute toward better reproductive health of their female counterparts. Also it is the main part of the ongoing family planning and reproductive health programme of Bangladesh. Men's higher degree of involvement in family planning can be ensured when men have proper knowledge of contraceptives, approve of family planning, communicate family planning matters frequently with their spouses and finally, take an active part in contraceptive practice. The objectives of this thesis have been formulated in this context.

The broad objectives of this thesis are:

a) to investigate male knowledge of contraception,
b) to investigate male approval of FP,
c) to investigate male involvement in couple communication regarding FP, and
d) to investigate male practice of contraception.

Fig 1.1 Map of Bangladesh


Bhutan
Nepal
N
Thakurgaon
26°
Pirganj
Lalmanir Hat
Saidpur
Rangpur
Dinajpur
Brahmapuira R
India
Jamalpur
Jaria Jhanjail
Chhatak
Bogra
Santahor
Mohanganj
Sylhet
Mymensingh
Gouripur
Nawabganj
Rajshahi
Bangladesh
Habiganj
Ganges
Ishurdi
India
24°
Bhairab Bazar
Pabna
Brahmanbaria
India
Kushtia
Dhaka
Narayanganj
Faridpur
Munshiganj
Comilla
Jessore
Chandpur
Laksham
Khagrachbari
Khulna
Noakhali
Bhola
Nazir Hat
Rangamati
Bagherhat
Barisal
Chandrag-hana
Patuakhali
Chittagong
22°
Satkania
Mouths of the Ganges
Cox's Bazar
88°
90°
Bay of Bengal
0
80 km
0
60 mi
Myanmar (Burma)
92°
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(805) 685-3100 www.maps.com

1.2 Outline of the thesis

This thesis consists of nine chapters. The ongoing chapter (Chapter 1) provides the introduction followed by objectives and outline of the thesis. Chapter 2 provides a general literature review on male involvement in reproductive health, which is followed by another review of literature on male involvement in reproductive health in the Bangladeshi context. This chapter concludes with a conceptual framework proposed based on the literature review, showing the relationship among different components of men's involvement in family planning. Besides this literature review, some specialised literature will be reviewed in different sections of the thesis as appropriate. Chapter 3 describes the data used for this thesis with background information on the study population and existing discrepancies in responses among married couples. A modification of the conceptual framework presented in Chapter 2 will be proposed in this chapter on the basis of data availability. Chapter 4 discusses the modeling of the data. A brief description of the models that will be used in the ongoing study will be given in this chapter with the indication of the selection procedure used to choose the final models in the study. Chapter 5 addresses men's contraceptive knowledge. Chapter 6 discusses men's approval of family planning. Chapter 7 addresses inter-spousal communication regarding family planning. Chapter 8 discusses men's involvement in contraception. Chapters presenting results (Chapter 5 to Chapter 8) are self-contained including introduction, results and discussion and finally conclusion, except the data, methodology, and respective references, which have been placed in separate sections of the thesis for the convenience of the readership. Chapter 9 discusses the overall conclusion, policy implications, limitations of the study and future work, which will be followed by the references. Throughout the thesis, male and man are used interchangeably for the convenience of readability and discussion.

Chapter 2

Male involvement in reproductive health: a literature review

Male involvement in reproductive health is an evolving concept. The number of components addressed under this area is increasing day by day. The available literature shows that research on male involvement in reproductive health covers almost all regions of the world. These research works vary in terms of methods used and components addressed. This chapter will be grouped into two sections: the first, entitled male involvement in reproductive health, will provide the review of literature regarding the subject area for different parts of the world; and the second will focus on male involvement in reproductive health in the Bangladeshi context. Both the sections will be further organised under suitable subheadings to aid the discussion.

2.1 Male involvement in reproductive health

Male involvement in reproductive health is not at all a new idea. Males are involved from the beginning of the sexual union and family formation either directly or indirectly. Before the sexual revolution initiated by the oral pill, men were more involved in the family planning and other reproductive health concerns than they are today. If couples wished to use contraception, their options were limited to methods requiring a man's direct participation—withdrawal, periodic abstinence or condoms (Ndong and Finger, 1998). The feminist movement in the last decades attributed value to the concept of women-only space and focused exclusively on women at a time when no one else was focusing on women at all. Now, as women's specific problems are getting some attention on the world stage, and well before those problems have been adequately addressed, studies reveal that focusing only on women is loosing acceptance (Berer, 1996).

Why were men ignored in the past?

Family planning programmes in the past have focused on women instead of men for several reasons: women bear the burdens of pregnancy and childbearing; most modern contraceptives are for women; and many providers have assumed that women have the interest, in protecting their own reproductive health (Drennan, 1998; The Alan Guttmacher Institute, 2003). Besides, some family planning programmes have avoided men because they assume that men are not interested or are even opposed to family planning (Ezeh et al., 1996; Gallen et al., 1986; Green et al., 1995, Mason and Taj, 1987; Mbizvo and Bassett, 1996). Indeed, men are frequently blamed for many of women's reproductive health problems (Drennan, 1998). Another reason behind the opposition to men's involvement in the past by women's health advocates and service providers was their fear that adding the services for men would damage the quality of women's services and create competition for already scarce resources. However, introducing programmes for men can enhance rather than deplete existing programmes if the designers of these programmes carefully integrate them into the existing health care system in a way that benefits both women and men (Wegner et al., 1998).

The rationale

Interest in the area of men's sexual and reproductive attitudes and behaviour arose when it became clear that without understanding male perspectives, it would be impossible to change men's reproductive health-related behaviour that is risky or harmful for both women and men (Collumbien and Hawkes, 2000; Hawkes and Collumbien, 2002; Hawkes and Hart, 2000; Mundigo, 2000; Pantelides, 2002). The reasons for more attention to men include: growing concern about the spread of HIV/AIDS and other STIs; evidence of the ill-effects of some men's risky sexual behaviour on the health of women and children; survey findings that many men approve of family planning; greater recognition that in many cultures men make decisions that affect women's reproductive health as well as their own; increasing awareness of men's and women's differing social roles and power associated with these roles that affects sexual behaviour, reproductive decision-making, and reproductive health in many different ways; and demands from female health care clients that men become more involved and included in family planning and other reproductive health care activities (Drennan, 1998; Johansson et al., 1998; Johns Hopkins University Center for Communication Programmes, 1998).

Global agenda

In the International Conference on Population and Development (ICPD) held in Cairo in 1994 there was a global call to involve men in the family planning and reproductive health activities, which is regarded as the official acknowledgement of the importance of including men with a wider meaning in the overall process of family planning and reproductive health activities for many of the participating countries. The ICPD (United Nations Population Fund, 1994) stated one of its objectives as:

> *The objective is to promote gender equality in all spheres of life, including family and community life, and to encourage and enable men to take responsibility for their sexual and reproductive behavior and their social and family roles.* (Paragraph 4.25)

Emphasizing men's involvement, the ICPD Programme of Action (United Nations Population Fund, 1994) stated that:

> *Men play a key role in bringing about gender equality since, in most societies, men exercise preponderant power in nearly every sphere of life, ranging from personal decisions regarding the size of families to the policy and programme decisions taken at all levels of government.* (from Paragraph 4.24)

The ICPD Programme of Action (United Nations Population Fund, 1994) further stated that:

> *Special efforts should be made to emphasize men's shared responsibility and to promote their active involvement in responsible parenthood; sexual and reproductive behaviors, including family planning; prenatal, maternal and child health; prevention of sexually transmitted diseases, including HIV; prevention of unwanted and high-risk pregnancies; shared control and contribution of family income, children's education, health and nutrition; and recognition and promotion of equal value of children of both sexes. Male responsibilities in family life must be included in the education of children from the earliest ages. Special emphasis should be placed on the prevention of violence against women and children.* (Paragraph 4.27)

The above challenge calls for more intense efforts to foster partnerships between men and women that help men identify with the magnitude and range of women's reproductive illnesses. The philosophy embodied in the ICPD Programme of Action combines primary health care with a human rights dimension (WHO, 2002).

Reproductive health is defined broadly in the ICPD Programme of Action (United Nations Population Fund, 1994) as follows:

Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe life, that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the rights of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant. (from Paragraph 7.2)

The Programme of Action statement also defines what is required of appropriate reproductive health care services (United Nations Population Fund, 1994):

Reproductive health care is defined as the constellation of methods, techniques and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems. It also includes sexual health, the purpose of which is the enhancement of life and personal relations, and not merely counselling and care related to reproduction and sexually transmitted diseases. (from Paragraph 7.2)

Depending on this increased awareness, the definition of family planning and reproductive health has also been expanded by incorporating some more elements that are described in the ICPD definition of reproductive health in the service package (Population Council, 1994). After the ICPD, a new era of research and interventions involving men in the whole process of reproductive health activities has begun, with more motivated, policy driven, and target oriented programme activities. These include understanding the status of men in current and ongoing family planning and reproductive health programmes, verifying to what extent men should be involved, considering the risk factors in involving men with relative advantages etc.

The concepts

Male involvement in reproductive health has many concepts: men's participation, men's responsibility, male motivation, male involvement, men as partners (Drennan, 1998; Helzner, 1996; Ndong and Finger 1998; Verme et al., 1996). But, there has been no consensus among the researchers and policy planners about which term best describes the new perspective on men, what these terms mean, and how men can best be involved in reproductive health activities (Drennan, 1998). However, the motivation behind all these terms is more or less the same, that is to involve men positively for achieving better reproductive health.

Motivation

Male involvement as a programme label is not appropriate. Men have always been involved in reproductive health activities of their partners, though their involvement has often had negative consequences for the health and well-being of their partners. Men are products of their culture and socialization. In some cultures number of children, particularly sons, is considered as the proof of manhood. Rites of passage to manhood some times include sexual initiation even with commercial sex workers or older women in the community. Some cultures may expect men to be sexually experienced before marriage or to have multiple sex partners after marriage. Men are even socialized to view women as property rather than life partners (Piet-Pelon et al., 2000).

There are as many different ways to involve men appropriately and constructively in reproductive health process depending on the cultural settings of a country. The universal concern must simply be to ensure addition, not subtraction. By adding services for men, we must not sacrifice or jeopardize women's needs in any way. In some situations, this may be regarded as adding to women's health services a new understanding of their needs in relation to their partners. In other situations, women and men may demand services for men (AVSC International, 1997). Unfortunately, the concept of male involvement is often treated negatively. Programme planners suspect men as gatekeepers and potential obstructionists. They fear that involving men in decision-making, will defeat women's effort to regulate fertility. However, evidence suggests that the most successful family planning programmes target men as well as women (Ezeh, 1993) and promote couple-communication regarding family planning between spouses (Jolly, 1976).

Family planning programmes traditionally have focused on women as the primary beneficiaries of the service provision. Men have been considered "silent partners" (Edwards, 1994), whereas research on contraceptive acceptance has concentrated on the methods' effect on women and factors affecting method choice (Cosminsky, 1982; Sargent, 1982). Actually, men are the forgotten half of family planning, the other half of a contracepting couple. We develop programmes with the expectation that men, with no help from us, somehow would learn about family planning and automatically accept it (Piet-Pelon et al., 2000). Many family planning and reproductive health programmes have paid little attention to men except for the diagnosis and treatment of sexually transmitted diseases (STDs) (Green et al., 1995; Mbizvo and Bassett, 1996).

The biological link between male and female reproductive health status is well understood. But, the impact of men's knowledge, attitude, and behaviour on women's reproductive health is less apparent. In regions where prevailing socio-economic structures, such as kinship and marriage, allocate power and authority primarily to men, women are dependent on men for access to food, health services, and other things that impact positively on their health status (Santow, 1995). Men have always enjoyed more freedom than women to separate sexual pleasure from reproductive outcomes, with relatively little attention to the consequences of their attitude and behaviour. In recent years, however, men's sexual and reproductive behaviour have received increased public scrutiny (Mundigo, 2000; United Nations Population Fund, 1995), as health professionals and advocates concerned with women's sexual and reproductive health have become increasingly aware of the importance of addressing the attitudes, behaviours and health of their male partners as well (The Alan Guttmacher Institute, 2002).

In the traditional settings of the developing countries (Duza, 2002; Fathalla, 2000; Konings and Carael, 1997; Piet-Pelon et al., 2000; United Nations Population Fund, 1994), men are believed to: i) leave the burden of modern contraceptives essentially to women, men themselves are the low acceptors of such methods all over the developing world; ii) tolerate (in large parts of Africa), such harmful methods as female genital cutting, and help perpetuate practices of "widow inheritance" by a deceased man's (eldest) brother and "ritual cleansing" of recent widows, whereby the widow has to have penetrative sex with her deceased husband's brother(s) in order to be cleansed from the negative effects of death practices that are raising major alarm in the wake of the HIV/AIDS pandemic; iii) enjoy wider freedom and choice of pre-marital and extra-marital sexual networking, compared to women; iv) allow women highly inequitable access to whatever limited facilities may exist, in terms of allocation of family resources or community health infrastructures for antenatal, and other safe motherhood and women's sexual and reproductive health services.

One of the frequent reasons given by women for not using or not continuing to use contraception is their partner's opposition. Men having education about reproductive health issues are more likely to support their partner's decisions and to encourage public policies that result in women receiving the reproductive health care they need (Kak, 1993; Ndong and Finger, 1998). Many providers and programme managers have concluded that neglecting men and their reproductive health in the past was a losing strategy with adverse consequences for both men and women (Green et al., 1995; Schulte and Sonenstein, 1995).

Gender roles

There is a growing understanding in the international public health community regarding the gender role as a fundamental influence; along with decision-making power, access to education and earning power, it affects the health choices available to everyone. This understanding has been instrumental in making reproductive health professionals aware of the need to develop creative strategies to reach men - a need that has become an important issue in the face of the growing worldwide spread of STDs, including HIV infection (Wegner, et al., 1998). Indeed, the consideration of the potential for involving men in family planning is a recent concern that has developed largely as a result of efforts to prevent the transmission of HIV/AIDS (Edwards, 1994;

The Alan Guttmacher Institute, 2003). However, this new perspective on men comes from an evolution in thinking about reproductive health rather than from a revolution in attitudes (Gallen et al., 1986).

Some policy makers view the male involvement from a gender perspective, as gender has a powerful influence on reproductive decision-making and behaviour (Mccauley et al., 1994). In many country settings men are the primary decision-makers about sexual activity, fertility and contraceptive use, family size, birth spacing, or extramarital sexual partners (Fort, 1989; Magnani et al., 1995; Storey et al., 1997). Men are often called "gatekeepers" because of the powerful roles they play in society - as husbands, fathers, uncles, religious leaders, doctors, policy-makers, and local and national leaders (Green et al., 1995; Greene and Biddlecom, 1997). Men can control access to health information and services, finances, transportation, and other resources using their different roles (Green et al., 1995; Mbizvo and Bassett, 1996; Robey et al., 1998). Men's traditional responsibility for providing their families' economic support is a motivating factor for fertility regulation among male respondents of all age groups (Karra et al., 1997). Hence, ignoring men in family planning and reproductive health programmes undermines efforts both to change their attitudes on population matters and to motivate them, and through them, their wives on family planning and reproductive health matters (Adewuyi and Ogunjuyigbe, 2003).

The reproductive health attitudes and behaviour of men play a critical role in maintaining the health of women and children (Best, 1998). Men have the greater likelihood of being involved in extra- or pre-marital sexual activities, have higher rates of partner change and hence a greater risk of exposure to STIs/HIV/AIDS (Mundigo, 1995). Results from other studies show that it is primarily the sexual behaviour of married men which puts their wives at risk of STIs/HIV/AIDS (Hawkes, 1998; Hawkes et al., 2002; Hunter et al., 1994; Moses et al., 1994; Thomas et al., 1996). Men having unsafe sex outside of marriage may become infected with STIs/HIV/AIDS and subsequently share their infection with their wives. The physiology of a woman's reproductive tract indicates that her risk of being infected with STIs/HIV/AIDS by an infected man is much greater than that of a man's being infected by a woman (Best, 1998; Jones and Wasserheit, 1991). The chance of male to female transmission of HIV is approximately four times higher than female to male transmission (Aral, 1993). In some countries, including the United States and several sub-Saharan African and Asian nations, HIV/AIDS is now spreading faster among women than men (Drennan, 1998; Salem, 2004). In the STD prevention area, men are crucial because the main method of prevention is the male condom, which requires active cooperation from the male partners (Best, 1998).

Policy relevance

There are several reasons why involving men in reproductive health is important. Studies reveal that when men are provided with information about family planning and reproductive health issues, they are likely to be increasingly supportive of their partner's family planning decisions (United Nations Population Fund, 1995). Reports from clients and service providers show that many women want men to become more involved in the family planning and reproductive health process. Around the world, women and men have told health care providers and interviewers that they want both partners to be involved in the health care decisions (Landry and Ward, 1997; Population Council, 2001a). On the other hand, men's participation is crucial to enable millions of women to avoid unintended pregnancies around the world. A United Nations Population Fund (UNFPA) estimate suggests that of the 175 million pregnancies each year, about 75 million are unintended (United Nations Population Fund, 1997). Many married women who want to avoid pregnancy are not using contraception because of their husbands' objection (Bongaarts and Bruce, 1994; Robey et al., 1996; Westoff and Bankole, 1998).

Studies from different parts of the world have shown that reproductive health programmes are likely to be more effective for women when men are involved in some way (Gordon, 1995; Helzner, 1996; Khan and Patel, 1997; Mbizvo and Bassett, 1996; Mistik et al., 2003; Population Council, 2000). When men are actively involved in these programmes and informed about the health outcomes of their wives, fertility tends to drop and contraceptive acceptance increases. Moreover, a recent review of studies of couples' behaviour indicates that reproductive health interventions targeted at couples demonstrate better outcome than those aimed at a single sex (Becker, 1996). This is due to greater communication between couples. In many settings inter-spousal communication often takes place on issues related to family planning, but the final decision is, in most cases, taken by the husband alone (Petro-Nustas and Al-Qutob, 2002). So programmes should consider involving men in reproductive health interventions in such a way that will help foster a better understanding between the spouses (Karra et al., 1997). Communication among partners regarding family planning and reproductive health matters is important to ensure that women receive the reproductive health care they need, while for sexually transmitted infection (STI) programmes to be effective, education, testing and treatment must be provided to both partners (United Nations Population Fund, 1995; Wegner et al., 1998). Studies suggest that when both partners take family planning and reproductive health decisions jointly, these decisions are more likely to be implemented. Men become more supportive to their wives' reproductive health needs and provide the resources needed to obtain these services (Valente and Saba, 1996).

Many health care providers see opportunities for men - as individuals, family members, religious and community leaders, and policy makers – to promote better reproductive health for all (AVSC International, 1997; Green et al., 1995; Mbizvo and Bassett, 1996). Some also argue that more good can be done for women if men participate fully in family planning and reproductive health programmes. Again, some oppose the idea, arguing that men are already too involved in terms of holding too much power over reproductive decisions that affect women's fertility and health. They point out that more attention to men, if not well planned and wisely developed, could reinforce this imbalance rather than improve the situation (Drennan, 1998). Some also fear that more attention to men could jeopardize the existing reproductive health services for women (AVSC International, 1997). They worry that new programmes for men will put pressure on the available reproductive health funds for women (Drennan, 1998).

Men and family planning

Men play important roles in supporting a couple's family planning and reproductive health needs. Men often influence effective use of a contraceptive method. Men's support can contribute to better use of female methods and even men can use modern male methods (Herndon, 1998). However, not every contraceptive decision is directly influenced by men, especially in case of female method use. Many women do control the use of female-dependent contraceptives themselves, some times even using the method covertly (Helzner, 1996). Again there are some situations where men provide conditional support towards contraception. For example, many Philippine men are supportive of their wives' using family planning, but see this as a women's concern, that is, the collection and preservation of the methods are considered as wives' responsibility (Lee, 1999). There is evidence that men often entirely control the contraceptive practice. A study of urban Sudanese men reveals that the decision not to practice family planning is found to be male-dominant, and husbands are responsible for collecting contraceptives when family planning is practiced (Khalifa, 1988). The continued use or non-use of a family planning method and switching to another contraceptive method is largely influenced by the man's decision (Khalifa, 1988; Mbizvo and Adamchak, 1991). When a man approves of family planning, it is most likely that there will be sustained use of contraception (Nzioka, 2002). The inclusion of husbands in family planning programmes will result in relevant increases in the use of modern contraception, especially condom (RHO, 2004; Terefe and Larson, 1993). However, still important questions about men and contraception remain unanswered: To what extent men should be involved in FP decision-making? How do men's concerns regarding FP differ from that of women? Can women based FP clinics provide service for men? The answers to these questions can affect family planning acceptance (Edwards, 1994).

Men and HIV/AIDS

AIDS has become the fourth largest killer worldwide. An estimated 20 million people have died around the world since the AIDS epidemic began and an estimated 39 million people were living with HIV by the end of 2004 (United Nations, 2005). Men are frequently blamed to be the main route of spreading HIV/AIDS due to their risky sexual behaviour. Men's participation in preventing HIV/AIDS can be a promising strategy. Men can help slow down the spread of HIV/AIDS and other STIs not only by changing behaviour but also by increasing the use of condom (Drennan, 1998; Green et al., 1995; United Nations Population Fund, 1994).

Men and safe motherhood

Men can plan their families, foster safe motherhood by arranging for skilled care during pregnancy and delivery and pay for the services. Men can help women have safe pregnancies and healthy babies by ensuring nutritious food, especially food strong in iron and fortified with vitamin A is available to their wives (UNICEF, 1998). They also can arrange ahead of time of delivery for transportation and can buy supplies, if necessary (Drennan, 1998). Delay in seeking care during delivery often contributes to maternal deaths when complications of pregnancy occur (Thaddeus and Maine, 1994). Men are often the ones who decide when a women's condition is serious enough to seek medical care and when and how to transfer the women to hospitals. Men can avoid delays by being more informed about the symptoms of imminent delivery and of delivery complications (Drennan, 1998). To prevent maternal deaths, men can learn about potential postpartum complications and be mentally and financially ready to seek help if they occur (Drennan, 1998; Green et al., 1995; United Nations Population Fund, 1994). Men's decision and action during the pregnancy, delivery and after the baby is born often make the difference between illness and health, life and death (Thaddeus and Maine, 1994).

Men's role in preventing unintended pregnancy

Men can prevent unintended pregnancies by supporting contraceptive use and reduce their wives' unmet need for family planning. Men can accompany their wives or partners to meet with a family planning counsellor or health provider. They can learn about the available contraceptive methods with their possible side effects and choose the one that best meets their needs. Men can help their partners use modern methods correctly, take necessary action in case of any side effects or can choose male method options (Drennan, 1998).

Men and responsible fatherhood

Responsible fatherhood is also a prime duty of men. The role that man play as fathers and the ways in which they affect their children's health have been gaining considerable attention in recent years (Edwards, 1994; Grady et al., 1996). Men can become more involved in helping their children's healthy development - for example, ensuring that their children receive all necessary immunizations and by spending quality time with the children to help building a good mental health (Drennan, 1998; Green et al., 1995; United Nations Population Fund, 1994).

Men and domestic violence

Evidence suggests that many men abuse women physically and emotionally, even when they are pregnant (Gazmararian et al., 1996). A study by World Bank on 35 countries revealed that between one-quarter and one-half of women had been physically abused by a current or former partner (Heise et al., 1994). Studies suggest that sexual violence, including rape, is increasing worldwide (United Nations Population Fund, 1997). Men have the sole responsibility to end all sorts of violence against women (Drennan, 1998; Green et al., 1995; United Nations Population Fund, 1994).

What do men know about reproductive health?

Surveys that focused on men show that many know and approve of family planning (Ezeh et al., 1996; Robey and Drennan, 1998). While many men use contraception or support their partners' use of it, studies suggest that most men lack sufficient family planning information, education and services (Drennan, 1998). Recent research from Kenya indicates that men exposed to family planning and other reproductive health issues at younger age are more likely to have a positive attitude toward, and be supportive of, their partner's family planning use (Wilkinson, 1997). One study in Uttar Pradesh, India concluded that men know little about maternal morbidity or sexual morbidity conditions (Singh, et al., 1998). Another study by Bloom et al. (2000) in North India revealed that very few men had basic knowledge of fertility, maternal health and STDs. Most of the Demographic and Health Surveys (DHS) and other nationally representative surveys of men have been conducted in Africa, except a few in other regions (Latin America, Caribbean and Asia). Thus the findings are not globally representative of men. These surveys collected information mostly about family planning, but other data cover other reproductive health issues, such as HIV/AIDS (Drennan, 1998; Salem, 2004).

Programme initiatives

Programmes and initiatives for including men in the family planning and other reproductive health services have existed for more than 20 years in a number of countries. But, few of them are well established, and fewer still have been fully integrated into their existing health care system (Gallen et al., 1986). Programme managers and policy planners in many countries have almost automatically assumed that men are not interested in or supportive of family planning and contraceptive use, even though recent research reveals that many men are (Ezeh et al., 1996).

Increasing men's participation in reproductive health process requires more than programme activities associated with men, such as preventing STDs, promoting condom use, or opening male clinics. It also requires encouraging a range of positive reproductive health and social behaviour by men to help ensure well-being of women and children (Helzner, 1996; United Nations Population Fund, 1994).

Males and their own reproductive health

Men themselves have their own reproductive health problems and needs. Unfortunately, policy makers and programme planners lack a clear understanding of what men's reproductive health means (Ndong et al., 1999). In order to define male reproductive health services and to provide a framework for assessing men's reproductive health needs and initiating or enhancing services for men, AVSC International organised a two-day meeting in April 1997 of 10 clinicians, counsellors and social scientists with varied experience in providing health and social services for men. The goals of the meeting were to identify the core reproductive health services that would help constitute basic reproductive health care for men and to devise a model that would serve as framework for programme development and service delivery. Services that were suggested by the participants could be grouped as: screening services, such as contraceptive use assessment and basic clinical care; information, education and counselling services; and clinical diagnosis and treatment services for specialized needs identified through screening (for detailed information see Ndong et al., 1999).

Obstacles to involving men

Men's involvement in reproductive health is not straightforward and easily achievable. One major obstacle is men's reluctance to use the available services. Men know little about their own or women's sexuality and reproductive health, communicate about sexuality very little with their partners, and often believe many sexual myths. Many men are suspicious of family planning programmes because they see them as a conspiracy to undermine their power. Such attitude of men is mainly due to the longer ignorance to them (Ndong and Finger, 1998).

Feasibility of male involvement

In a symposium organised by AVSC International, five case studies in male involvement were presented. The experiences cited in these case studies, and the collective experience of the organizations in their work in male involvement in reproductive health, offer good insights as we seek to increase efforts to involve men in reproductive health issues, family life in general, and their own health needs. One of the most important conclusions from these experiences is that it is possible to engage, involve, and attract men to participate in a variety of settings, including the clinic, the workplace, and the community, individually and in groups, to discuss gender roles, reproductive health, and sexuality and fatherhood, among other themes. One of the consensuses among these organizations is that male involvement cannot be prioritised over women's reproductive rights but that male involvement can mean improving women's status and improving men's well-being as well (AVSC International, 1998).

Experiences and recommendations

Green and Danforth (1996) reviewed male involvement programmes in more than 20 developing countries and recommended the following strategies to promote positive male involvement: i) changing the social norms and desirability which govern male behaviour in sexual relations and parenthood, ii) incorporating male involvement in the overall planning of reproductive health programmes; and iii) making service delivery programmes more male-friendly. Specifically, they recommended the development of policies for making condoms and vasectomy more accessible; encouraging private-sector initiatives such as condom sales and work place programmes; giving more attention to specific male audiences—especially youth; and promoting greater inter-spousal communication regarding family planning and other reproductive health issues.

Data concern

Until recently, data about men's family planning and reproductive health knowledge, attitudes and practices were scarce and some times they lack in-depth information (Ezeh et al., 1996; Gallen et al., 1986). Most family planning surveys interviewed only currently married women of reproductive age, and did not include their husbands or other men, married or unmarried. The small amount of information available about men was gathered mostly by proxy from their wives (Robey et al., 1992). There has been a little research on male involvement in reproductive health. A review of the literature on family planning and reproductive health over the past two decades shows consistently about three female references to every male reference, with a very slow annual increase in studies on men alone (Greene and Biddlecom, 1997; Stycos, 1996). Research at the aggregate level focusing on the role and participation of males in family planning and reproductive health has been rare. In order to plan or initiate more effective interventions in this area, it is necessary that policy makers and programme designer have a deep understanding of these aspects (Limanonda, 1998). There is a need for greater understanding of male behaviour and attitudes towards sexual relations and reproductive responsibilities (Edmonson, 1995).

To increase male involvement and participation in reproductive health matters and to launch successful family planning and reproductive health programmes, there is a need to gain in-depth knowledge and understanding of men's sexual and reproductive health perspectives, behaviour and practices, and the only way to obtain data and information on men would be through both quantitative and qualitative research. Data and information obtained through well-coordinated research can lead to the formulation, design and implementation of viable, cost-effective, acceptable and affordable reproductive health programme for men as well as couples (Nzioka, 2002). For example, research can lead to a better understanding of the sexual and reproductive behaviours of men because such behaviours have their own social, cultural and biomedical origins (Jejeebhoy, 1999).

2.2 The Bangladesh context

Role of male in the family and the community

Slightly more than half of the population of Bangladesh are men, but their dominancy and influence in families and communities is often expected to be much more than that. Traditional values dictate that women are subject to the decisions of the men in every sphere of their lives. However, this is changing as opportunities for women open through education and employment. The multiple decision-making roles of men in reproductive health, particularly family planning, have a critical impact on women's reproductive health. Moreover, in Bangladesh men are decision-makers in communities, organizations and government that plan and manage reproductive health services. Men are also service providers, working with both women and other men in clinical and health education settings. Finally, men are potential clients of many of the reproductive heath services (Piet-Pelon et al., 2000).

Males in family planning

Until the mid-1970s, the male approach was the main thrust in the family planning programme of Bangladesh in motivational efforts made by the male workers and agents. As a result, male method-use received prominence over female methods. But with the deployment of a large number of female Family Welfare Assistants (FWAs) at the community level in early 1980s, the education and motivation efforts were redirected towards approaching the female partners of the couples. The female field workers found the female clients easily and mostly available at home and also felt comfortable discussing family planning and to explain use of its methods with females freely. This has resulted in widespread practice of female methods now. The importance of approaching men about their participation as contraceptive users and their support in partnership with female contraceptive users has thus been overlooked (Islam, 1997). But it is the reality that in an Islamic country like Bangladesh, where women's mobility outside the area of their homes is limited or some times restricted, husbands are responsible for supplies of pills (Noman, 1983). Another study by Davies et al. (1987) revealed that most of the users of oral contraceptives in Bangladesh depend heavily upon their husbands for a continuing supply of their pills and for instructions. Schuler et al. (1995), on the basis of an ethnographic study conducted in rural Bangladesh, suggest that the "women to women approach" strategy in the Bangladesh family planning programme, despite its success in increasing contraceptive prevalence over the past years, often fails to provide adequate information, services and ways to involve men in family planning (Ahmed et al., 1997; Schuler et al., 1995).

Since 80 percent of all family planning field workers in Bangladesh are female, family planning advice is largely distributed to the female partners. As a result, men receive little information regarding family planning from the programme's efforts. There are many reasons for the lack of the communication between female field workers and male partners, for example, shyness involved in discussing family planning from both the sides. Even the male Family Planning Inspectors (FPIs), who are the main route to contacting and motivating men through group meetings, do not play an active role in this endeavour, since they lack specific instructions to do so. Up until now less importance has been placed upon involving men in family planning programmes (Population Council, 1998). This has resulted in the following situations:

- Since specific attempts have not been made to motivate men regarding family planning, they are still misinformed about the advantages of a small family.
- Men have not yet been educated about the correct use of modern family planning methods, especially male methods; their advantages and disadvantages.
- Because of lack of proper family planning knowledge, many husbands discourage or prevent their wives from using family planning methods.
- Since motivation of husbands has not been given importance, the use of modern male methods is negligible in comparison with that of female methods.

Consequences of ignoring males

An innovative project was implemented by Population Council, Bangladesh where only women were addressed leaving husbands unattended, to see how husbands behaved regarding the contraceptive practice. Husbands were found to have less interest in family planning and took less initiative than their wives both in the use of contraceptives by themselves and in the encouragement of their wives to use contraceptive methods. Furthermore, in some cases husbands were non-supportive to their wives when wives were suffering from side effects. Some husbands even opposed their wives' use of a particular method that led to discontinuation of that method. Many female clients who had been using temporary female modern methods faced opposition because their husbands did not support their use of contraceptives. The field workers suggested that to improve the situation husbands and wives should be simultaneously contacted and motivated (Population Council, 1998).

Why are males not fully involved?

Men's non-use of male methods cannot be regarded as men's non-involvement in family planning activities. Men can still be involved by supporting their wives' use of female methods, collecting the contraceptives for their wives and providing necessary information regarding the methods. Certain factors interact to prevent men from taking the responsibility to use male methods, even when they approve and support spacing and limiting the family size. One of these is less contact with males by the female family planning workers. As a result, male are not fully aware of complete information on family planning, or well educated on the use and side effects of different contraceptive methods and what to do if complications arise on method use. Similar to other neighbouring countries (for example, Nepal; see Dahal, 2005) in Bangladesh there are also rumours and misinformation about male methods (Islam, 1997). Sometimes female partners themselves are reported to discourage their partners from using male methods because of misunderstanding about male methods (for example, they think that vasectomy will reduce the physical ability of their husbands which will result in more economic hardship to the family), apathy towards male partners (for example, men feel embarrassed to collect condoms, think that disposing of condoms after use is disgusting, and some men also think that sexual pleasure is reduced by condom use) and fear of social problems to be created for males (for example, social taboo regarding men's infertility caused by a vasectomy) (Islam, 1997; Population Council, 1998). Some of the male clients have misconception that vasectomy causes men to lose their strength, makes them unable to work hard, hampers sexual enjoyment, and may also cause death. Others fear that they could become impotent after having a vasectomy (Jahan et al., 1996). Besides these fears, there are long standing conflicts between medical and non-medical personnel in the Bangladesh family planning programme that severely hamper the delivery of clinical methods and reduce the quality of clinical care. If these problems could be overcome, the potential for vasectomy is enormous in a country like Bangladesh where many couples achieve their desired family size early in their reproductive life (Piet-Pelon et al., 2000).

Absence of social legitimisation for family planning at an expected level (for example, openness regarding sexuality, family size preference, and their attitude towards FP) within the male population in the community is another barrier in the way of successful male involvement interventions. Men are still hesitant about discussing family planning and sexuality with other peer groups and also using male methods of contraception. This has, to some extent, limited the scope for the wide-spread diffusion of effective family planning messages and ultimately led to the limited use of male methods, especially condom and male sterilization (Islam, 1997). On the other hand, men have their own reasons to dislike modern male methods. There are two factors that influence men's involvement in family planning in Bangladesh. First, male methods are mostly unattractive. Vasectomy is for a selected group of men who have completed the desired family size and are ready for a permanent method. Condom use is often disparaged for aesthetic reasons. It is a frustrating method—condoms are embarrassing to collect, difficult to store, clumsy to use, and a nuisance to dispose of. Periodic abstinence and withdrawal are even more difficult methods to use consistently and efficiently. These require excellent inter-spousal communication, self control, discipline and understanding that method failure is high. Second, there is the problem of access to both services and in-depth information of family planning methods (Piet-Pelon, 1997). The Bangladesh family planning programme does not provide information on traditional methods. In fact it does not encourage clients the use of traditional methods (Piet-Pelon et al., 2000). A study by Gray et al. (1997) found that only 25 percent of men who were current users of periodic abstinence had correct information about its use.

Men and HIV/AIDS

The adult (15-49 years of age) HIV prevalence rate in Bangladesh is below 0.2 percent and the estimated number of adults (15-49 years of age) living with HIV is 15000 (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2006). Even though the HIV prevalence is negligible it is increasing over time. Condom use is almost absent in the sex industry in Bangladesh. One study conducted in central Bangladesh revealed that more than 90 percent of sex workers do not use condoms. Other studies conducted elsewhere in the country showed that almost all surveyed sex workers have reported to having sex without condoms at least occasionally (Joint United Nations Programme on HIV/AIDS (UNAIDS)/WHO, 2003). Intravenous drug users are another vulnerable group to the spread of AIDS. Sharing needles during intravenous drug use have caused HIV infection levels in injectors to double from 1.7 percent to 4 percent between 2000-2001 and 2002-2003. A study in one part of the capital, Dhaka, revealed that 9 percent of injectors tested HIV-positive in 2003-2004 (Ministry of Health and Family Welfare, 2004). The same study suggested that a large proportion of intravenous drug users reported buying sex and among them, fewer than one in ten consistently used a condom during commercial sex in the previous year. Men's awareness of HIV/AIDS can prevent the spread of the disease.

Literature suggests that the awareness of AIDS in Bangladesh is not satisfactory. Among the adolescents aged 15-19 years, 88 percent of males and 96 percent of the females do not know any way to protect against HIV/AIDS and these are the worst scenarios among 17 countries (Kiragu, 2001). Other studies revealed that the knowledge and awareness of AIDS among male in Bangladesh were low (Islam, 2006; Khan et al., 2004).

Men and safe motherhood

Men's involvement in safe motherhood is limited due to the social system and cultural beliefs in Bangladesh. Traditionally, men have been excluded from all sorts of activities related to their wives' antenatal and postpartum care and newborns' care. The only time the father's help is required is when an emergency requires the mother or child to leave the confines of the home, or when an external practitioner is needed and money should be spent. Because of the small role that men have traditionally played, they remain ignorant of much of the details of childbearing, especially, pregnancy complications, and those who are curious or concerned are often discouraged by the senior members of the family. This reluctance to involve men exists beyond the home even to institutional health care settings where maternity services restrict husbands' access to doctor and the wards. Again, husbands and fathers are only called upon when their consent is needed for caesarean section or when blood needs to be donated (Population Council, 2001b).

Women in Bangladesh consider that pregnancy and childbirth is their own world and there are evidences that women like to keep it that way. The main reason that women give for not attending antenatal care, for example, is not because their husbands disapprove it. Rather it is because they do not believe that anything could go wrong (Akhter et al., 1996; Goodburn et al., 1994). Health education in Bangladesh needs to be directed at both men and women – not to engender fear that something is wrong but to encourage practices to achieve the safest and happiest outcome. Education also has to be provided on planning ahead for the delivery and recognizing signs of possible complications. Men are found to have insufficient information to make good decisions now and, consequently, when a quick action is required in an obstetric emergency they are unable to do so (Piet-Pelon, 1997). A study by Islam et al. (2006) revealed that about 83 percent of the men know at least one serious complication related to pregnancy, 82 percent of them approve of pregnant women having a check even if not sick and 62 percent of the men think that pregnant women should have more food than before. Men's awareness of pregnancy care measured on the basis of these three components revealed that only 48 percent of men conform to all the three components.

Due to a longstanding culture that discourages men from being involved in childbirth and pregnancy-related activities men hardly care in such events. Men's ignorance regarding pregnancy and childbirth is evident in data from a nationwide study in Bangladesh on knowledge of and attitudes towards emergency obstetrics (Barkat et al., 1995). Husbands were reluctant to seek emergency care for their wives' obstetric complications from outside. However, it does not appear from this study that the husbands are the sole decision-makers or that their objections are the primary reasons for not seeking care in such situation. Several factors influence their decisions. In-laws and prevailing religious beliefs probably have major effects on the decision-making process but certainly the family's perception of the quality of the service is also important. Finally, there is the concern of high expenditure. Generally, men practice power over women's reproductive health when decision requires financial contribution or movement outside the household or traditional boundaries (Piet-Pelon et al., 2000).

Males and preventing unintended pregnancy

Men are found to be involved in the decision-making process when a pregnancy is unwanted or mistimed which some times lead to pregnancy termination (Ahmed et al., 1997; Hossain et al., 1997). Evidence suggests that in about 40 percent of cases, couples make the decision to terminate. Men are active in such situation in seeking care and in paying the costs. One recent study by Islam et al. (2004) found that induced abortion is more likely among couples when husbands approve of family planning. However, studies indicate that men do engage in high-risk and unprotected sexual behaviour, often starting at an early age some of which end up with unintended pregnancy (Chowdhury et al., 1997). Few have any idea of the effect of such behaviour on their future plans for marriage and family formation.

Men and domestic violence

There have been a few researches on gender-specific domestic violence. One study by Schuler et al. (1996) reported that 47 percent of the wives in the survey were beaten by their husbands. Rahman and Kabir (2005) in their study on adolescent girls found that about 34 percent of the respondents were abused physically or verbally during the last six months. Another piece of research revealed that about 85 percent of women were verbally abused (Steele et al., 1998). Khan et al. (1998) reported that 22 percent the women in their survey were physically abused, while other 28 percent were verbally abused. A study on pregnant women suggested that about 31 percent of the pregnant women experienced physical and mental torture during their current pregnancy (Chowdhury et al., 2000). Baden et al. (1994) in their study listed several reasons for wife battering: failure to meet husbands' demand (for example, not preparing food in time), ignorance to child care, insufficient dowry. They also reported that men some times beat their wives out of frustration, poverty and powerlessness.

Obstacles to involving males

In recent years there has been a growing consensus among policy planners and programme managers that increased male involvement is needed. The structure of existing family planning, however, has a strong female orientation. Both the deployment of a large number of female field workers at the community level and the use of female paramedics at Health and Family Welfare Clinics (H & FWCs) and Satellite Clinics (SCs), provide the specific needs of women and children. Thus, the programme is designed in such a way that it is easier for women than for men to obtain required information and necessary services. Historically, the value in soliciting participation from and providing services to men has been largely overlooked (Neaz and Banu, 1997; Population Council, 1998). There has been a positive indication that government is interested in implementing the ICPD goals. Hence new programmes have been considered to incorporate men in the ongoing family planning and reproductive health activities, while making little change to the existing structure, which is women oriented, in the light of budget constraints.

Rationale of male involvement

Policy makers and service providers are now convinced and motivated from the experience that there are many good reasons for working more directly with men. In Bangladeshi society, men are considered to be the dominant members in any family decision-making process, including the decisions to use family planning methods and delay or stop childbearing. Therefore, greater involvement of males in family planning and reproductive health is now a prime need. Male involvement in family planning and reproductive health refers particularly to several distinct programmatic goals. These are: to increase the use of male methods, and the continued support—by males—of female method use, to increase the involvement of men in reproductive health related activities, for example, pregnancy care, prevention of unsafe abortion and increasing awareness of STIs/HIV/AIDS (Ali et al., 1997; Piet-Pelon, 1997; Population Council, 1998).

What do men know about reproductive health?

Preliminary studies reveal encouraging results that Bangladeshi husbands show greater understanding and interest in reproductive health than that is anticipated. Men know their wives' perceptions about family planning and in 97 percent of cases there is mutual agreement (Piet-Pelon et al., 2000). When researchers ask men the general questions about family planning, they give "right" answers. At least 90 percent of the men can name modern contraceptive methods and also sources of supply of these methods. Some men take responsibility for obtaining contraceptive methods, particularly oral pills and condoms, from commercial sources. Men show a positive attitude towards family planning. Regardless of residence, education, religion or age, the vast majority of men approve of family planning. Men are also in favour of the small family norm. Two thirds of men who already have two children say they do not want more children. Studies suggest that in Bangladesh couples make joint decisions for family planning use in about 41 percent of all cases. In an additional 30 percent, the women say they had the greatest influence over family planning decision. Twenty-two percent say their husbands were more influential. These figures indicate that men generally do not dominate the family planning decision, though the pattern does vary with age. Younger women state their husband has more influence than older women do (Piet-Pelon, 1997), which may be due to cohort effect or an age effect or an effect of age difference between husband and wife.

Social and cultural constraints

Some policy planners and service providers think involving men is actually a dilemma for Bangladesh's family planning and reproductive health programmes, which consider a women-centred approach essential for programme success. Bangladesh has an established system to make services accessible to women through a cadre of female workers at community level and clinical services managed mainly by female paramedics. Recent studies suggest that there is a growing trend toward joint decision-making in reproductive health related activities or women making contraceptive and reproductive decisions on their own. They believe that this focus cannot be lost or eroded in an effort to reach or involve men. A principal concern is that men could become dictatorial in decision-making given the opportunity, resulting harmful effect on programme success (Piet-Pelon et al, 2000).

Feasibility of male involvement

There is an ongoing debate that whether the proposed programme of involving men is doable in parallel with the women's programme without compromising services for women, which are already facing financial constraints. As a possible way Piet-Pelon et al. (2000) suggested the better use of existing resources and trained staff. Many clinical facilities, particularly those of governments, are currently open for limited hours and provide only women's services. By extending the regular service hours, allocating some hours for men or couples, and by providing general health care, existing services could become more accessible with limited investment. On the other hand, evidence suggests that men at present seek reproductive health care mostly from unreliable and untrained providers, often paying for care (Verma and Rangaiyan, 1997). If men's such treatment-seeking behaviour can be channelled to appropriate service providers and men continue to be willing to pay, services become both feasible and affordable. Unfortunately, Bangladesh has neither developed a nationwide information and reproductive health programme for men nor has it seriously tried to meet the information needs of men to improve the reproductive health of their partners (Piet-Pelon et al., 2000). However, a study by Al-Sabir et al. (2004) concluded that reproductive health services for men could easily be integrated into H & FWC without affecting the clinics' focus on serving women and children.

One great advantage on the way of involving men in the family planning and reproductive health activities is that existing FWAs and FPIs in Bangladesh are well motivated. In reply to the question, "Why is more male involvement necessary for FP?", they gave a number of reasons: "men are the head of the family; male involvement will help to increase contraceptive prevalence rate; male methods are less time consuming, less hazardous, and have fewer side effects than female methods;

male methods cause no difficulty during physical labour; and male methods allow men to share contraceptive responsibility" (Population Council, 1998, page 27-28).

Experiences and recommendations

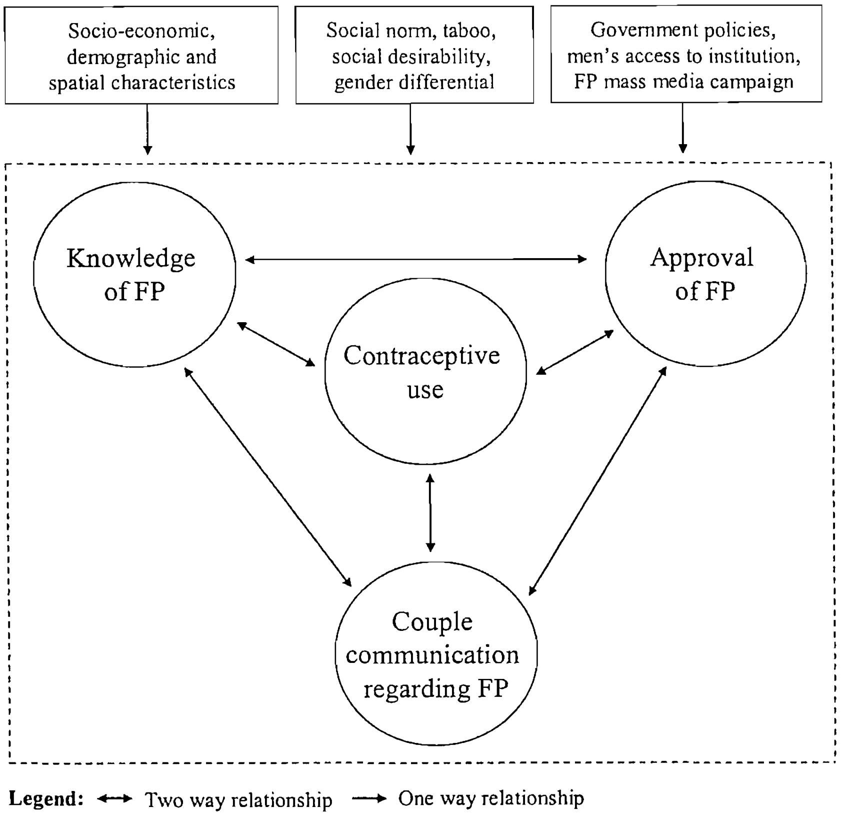
The Bangladesh family planning and reproductive health programme is mainly focused on two aspects of involving men. First is their responsibility in family planning and second is their influence on the reproductive health status of their wives. There are two cautions, which Bangladesh must observe because of the nature of its family planning service delivery programme, and the cultural settings which underlie it. First, particular care must be taken so that men's reproductive health roles are not seen too narrowly. Having men as active and efficient family planning users or supportive partners is one—but only one—of their roles. Since the national goal is to achieve a positive impact on the reproductive health status of women through male involvement, it is essential that men take an active responsibility in all aspects of reproductive health—both their own and their partners. Second, and particularly important to the Bangladesh family planning and reproductive health programme, it is crucial to balance what is expected from men with the achievements that women have already made. When men are encouraged to take 'active roles', they cannot be allowed to influence on women's rights to make their own decision and be "in charge" of their own bodies (Piet-Pelon, 1997).

2.3 Conceptual framework showing the relationship among different components of men's involvement in family planning

There have been many literature addressing men's role in family planning (Ali et al., 1997; Becker, 1996; Becker and Costenbader, 2001; Berer, 1996; Collumbien and Hawkes, 2000; Drennan, 1998; Ezeh, 1993; Ezeh et al., 1996; Greene and Biddlecom, 1997; Hawkes, 1998; Helzner, 1996; Herdon, 1998; Khan and Patel, 1997; Lee, 1999; Mesfin, 2002; Nzioka, 2002; Piet-Pelon, 1997; Piet-Pelon et al., 2000; Population Council, 2000; Population Council, 1998; RHO, 2004). Many of the researches proposes and tested casual relationships between the components of family planning e.g., approval of family planning, couple communication regarding family planning and contraceptive use. Most of the studies considered contraceptive use as functions of approval of family planning (Cook and Maine, 1987; Islam, 2000; Islam and Kabir, 2000; Islam and Kabir, 1998; Islam et al., 2001; Jato et al., 1999; Joesoef et al., 1988; Kamal, 2000; Khan and Rahman, 1997; Lasee and Becker, 1997; Mesfin, 2002; Odimegwu, 1999; Salway, 1994) and couple communication regarding family planning (Bawah, 2002; Chaudhury, 1978; DeSilva, 1994; Dodoo, 1998; Feyisetan, 2000; Gage, 1995; Jato et al., 1999; Lasee and Becker, 1997; Odimegwu, 1999; Omondi-Odhiambo, 1997; Oyediran et al., 2002; Oyediran and Isiugo-Abanihe, 2002; Salway, 1994). Furthermore, some researchers argued that couple communication regarding family planning may be considered as functions of contraceptive use (Bawah, 2002; Dodoo, 1998; Robey and Drennan, 1998) and approval of family planning (Jato et al., 1999). There is some literature that discuss approval of family planning as function of couple communication regarding family planning (Dodoo et al. 2001). Approval of FP may also be expressed as function of current use of FP. Approval of FP may be of different states, that is, non-approval, conditional approval and full approval, which can change due to experience of contraceptive use initiated by either of the spouses or by both. For example, approval of traditional method may convert into approval of modern method after experiencing method failure or inconvenience of the method in use. Similarly, approval of reversible methods may turn into approval of permanent method in some situation. On the other hand, there may be some cases, where wife initiated a method without her husband's approval of FP, which gradually motivates the husband to approve of FP. Among all the components of FP, contraceptive knowledge is the one which primarily initiates all the other processes of FP, that is, approval of, couple communication regarding and current us of FP. Little has been done to investigate such relationship. This may be due to that the target of FP programmes is mainly to evaluate the effects of programme efforts on current use rather that other components of FP. Another reason may be that the contraceptive knowledge is universal in some countries, which reduces the importance of considering this as an influential factor for other components of FP. Contraceptive knowledge is a continuous process which is updated continuously by the level of approval of FP, couple communication regarding FP and any experience of side effects for a method in use as well as method switching. Hence contraceptive knowledge can also be regarded as functions of other components of FP in certain cases.

In Bangladesh as FP programme is women oriented it is likely that husband's contraceptive knowledge of, approval of, couple communication regarding FP and current use of contraceptives will influence each other along with the influence of other socio-economic, demographic and spatial characteristics. The entire process of men's involvement in FP process is likely to be influenced by the prevailing social norm, taboo, social desirability, and gender differences. Moreover, government policies regarding FP, men's access to institution dealing with FP matters, and target and content of FP mass media campaign are other factors that may influence men's involvement in FP process. Based on the discussion above and evidence gathered by the literature review, a conceptual framework showing the relationship among different components of men's involvement in family planning has been proposed (Fig 2.1). As an illustration of the conceptual framework it can be seen that knowledge of FP could influence the use of contraceptives. The reverse is also true that contraceptive use could enhance knowledge of a range of methods and its associated side effects. These effects are mediated by the community/contextual and structural factors, vis-à-vis social, cultural and institutional factors.

Fig 2.1 Conceptual framework showing the relationship among different components of men's involvement in family planning


Socio-economic, demographic and spatial characteristics
Social norm, taboo, social desirability, gender differential
Government policies, men's access to institution, FP mass media campaign
Knowledge of FP
Approval of FP
Contraceptive use
Couple communication regarding FP
Legend: ←→ Two way relationship → One way relationship

Chapter 3

Data and preliminary analysis

This study uses the Bangladesh Demographic and Health Survey (BDHS) 1999-2000 data (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001) which classified Bangladesh into six administrative divisions (Fig 3.1*), 64 districts and 490 thanas. In rural areas *thanas* are divided into *unions* and then *mauzas*, a land administrative unit. Urban areas are divided into *wards* and then *mahallas*. The survey employed a nationally representative, two-stage sample from the master sample maintained by the Bangladesh Bureau of Statistics for the implementation of surveys before the Census, 2001. The master sample consists of 500 primary sampling units (PSUs). Maintaining the selection of PSUs with probability proportional to size as in the master sample, the number of PSUs was reduced to 341 in the BDHS survey, 99 in urban and 242 in rural areas. Sampling points are illustrated in Fig 3.2* and Fig 3.3*. In urban strata the PSUs are *mahallas* and in rural strata they are *mauzas*. Since, the objective of the BDHS was to provide separate estimates for each division as well as for urban and rural areas separately, it was necessary to increase the sampling rate for Barisal and Sylhet divisions and for urban areas relative to other divisions, so that the DHS sample is not self weighting.

A systematic sample of 10 268 households was then selected from this list. Every third household was selected for the men's survey. Finally, 10 544 ever married women of age 10 to 49 and 2556 currently married men of age 15 to 59 were successfully interviewed. As the male data set does not cover some important variables, a couple data set of size 2249 was generated from the two data sets (women and men), which will allow consideration of some variables from the women's part of the couple data set. The couple data set can be regarded as a nationally representative random sample as it was generated from two nationally representative random samples (women and men) and the distributions of different characteristics of wives and husbands are more or less similar to that of women and men (see Table 3.1). The couple data set will be used for detailed analysis in the thesis instead of the male data set. For the clarity of the discussion, husbands may be some times mentioned as males or men and wives will be mentioned as women in the results and discussion sections of the thesis.

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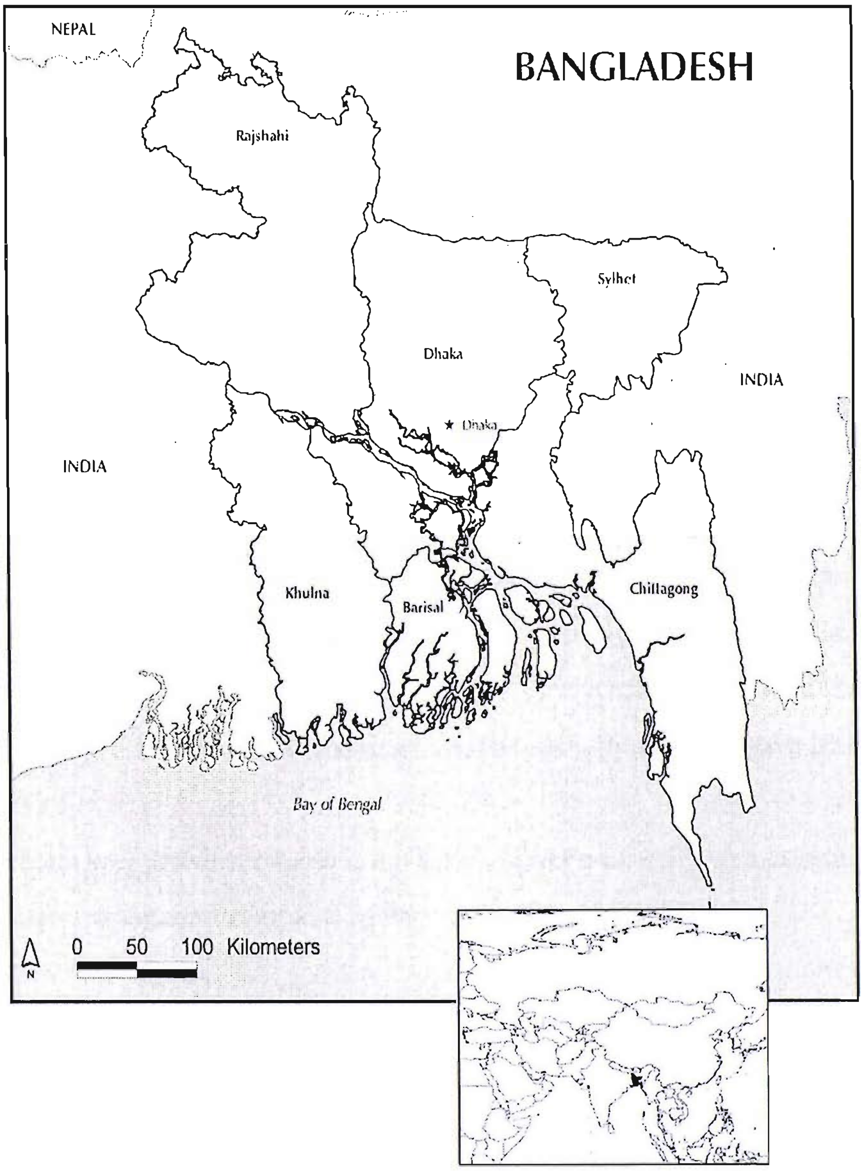
* Compiled from National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001.

Fig 3.1 Map of Bangladesh showing administrative divisions


NEPAL
BANGLADESH
Rajshahi
Sylhet
Dhaka
INDIA
Dhaka
INDIA
Khulna
Barisal
Chittagong
Bay of Bengal
0 50 100 Kilometers
N

Source: National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001

3.1 Background information of the sample

Table 3.1 presents the background characteristics of currently married women and men, and wives and husbands in the couple data set. Percentages have been shown in both un-weighted and weighted cases, as the samples are not self-weighting due to over sampling in the Sylhet and Barisal divisions and urban areas. Only the un-weighted percentages will be discussed in detail and differences due to weighting will be highlighted, since we will use the un-weighted data for the analysis in future chapters.

Currently married women

The modal age group among the currently married women is 25-29 consisting of 19.7 percent of the respondents. It is followed by the two adjacent age groups 20-24 (18.8 percent) and 30-34 (16.2 percent). The mean age of currently married women is 29.3 years. About 42 percent of the currently married women are uneducated. This is followed by primary (28.9 percent), secondary (23.8 percent) and higher than secondary (5.6 percent). Around thirty (29.7) percent of the respondents are from urban areas and the rest are from rural areas. A little over 24 percent of the respondents are from Dhaka division, which is closely followed by Rajshahi (20.2 percent), while Barisal (9.4 percent) ranks last. Around 87 percent of the currently married women belong to the religion Islam. Twelve percent of the currently married women do not have any children at the time of the survey. Around 20 percent have only one child, 22.8 percent have two children and the rest, 45 percent, have three or more children.

Data weighting seems to have little impact on the figures except for some changes in the proportion urban and in the over sampled divisions.

Currently married men

The modal age group among the currently married men is 35-39 which consists of 19.6 percent of men. This group is closely followed by the two adjacent age groups. The mean age of the men is 38.5 years. About one third of the men do not have any education. Another 30 percent of the men have primary education. About 70 percent of the men live in rural areas. Little over 26 percent of the currently married men live in Dhaka division which is closely followed by Rajshahi division (20.1 percent). About

86 percent of the men belong to Islam religion. Among the currently married men, 10.1 percent have no children at the time of the survey. Another 18.6 percent of the currently married men have only one child, 22.5 percent have two children, and the rest (48.8 percent) have more than two children. Data weighting seems to have little impact on the figures except for some changes in the proportion urban and in the over sampled divisions.

Wives

The age distribution of the female counterparts (wives) in the couple data set represents the same distribution as described for that of currently married women. The age group 25-29 is the largest with about one fifth (20.3 percent) of respondents belonging to this group. This is followed by the age group 20-24 (17.8 percent). The average age of wives is 29.40 years. About 42 percent of the wives in the couple data set are uneducated, while only 5.8 percent have education higher than secondary level. More than thirty (30.7) percent of these respondents are from urban areas. One fourth (25.9 percent) of the female counterparts of the couple data set are from Dhaka division, which is followed by Rajshahi (20.5 percent). Barisal (8.8 percent) is the least represented division. About 86 percent of these wives belong to the religion Islam. According to the number of living children women with exactly two children (23.8 percent) are the largest group. About ten percent have no children yet. Here weight is found to have minimum influence except on the proportion urban and the geographical distribution by division as before.

Husbands

Among male counterparts (husbands) in the couple data set, one-fifth (20.4 percent) belong to the age group 35-39. The two adjacent groups 30-34 (16.3 percent) and 40-44 (16.1 percent) comprise of more than 30 percent of the respondents. The average age of husbands is 38.6 years. About one third (32.9 percent) of the husbands have no education. Around 30 percent have primary education, 23.5 percent have secondary education and the rest have education higher than secondary level.

Table 3.1 Percentage distribution of background characteristics of currently married women, currently married men, wives and husbands, BDHS, 1999-2000

Background characteristics	Individual data set				Couple data set			
	Women		Men		Wife		Husband	
	Un-weighted	Weighted	Un-weighted	Weighted	Un-weighted	Weighted	Un-weighted	Weighted
Age								
10-14	1.7	1.9	NA	NA	1.6	1.8	NA	NA
15-19	14.5	15.1	0.8	0.9	13.8	14.5	0.7	0.8
20-24	18.8	19.0	5.4	5.9	17.8	18.2	4.9	5.4
25-29	19.7	19.3	13.5	13.5	20.3	19.5	13.1	13.1
30-34	16.2	15.7	16.1	16.3	17.7	17.2	16.3	16.5
35-39	12.1	12.1	19.6	19.3	12.3	12.4	20.4	20.2
40-44	9.8	9.8	15.8	15.4	9.9	10.0	16.1	15.6
45-49	7.2	7.2	13.0	13.0	6.7	6.4	13.5	13.4
50-54	NA	NA	8.7	8.6	NA	NA	8.7	8.6
55-59	NA	NA	7.1	7.1	NA	NA	6.3	6.3
Mean age	29.30	29.17	38.55	38.41	29.40	29.24	38.59	38.43
Median age	28.39	28.21	38.00	38.00	28.63	28.47	38.20	38.06
S.D.	9.169	9.241	9.681	9.754	8.956	9.036	9.429	9.514
Education								
No education	41.6	44.3	32.8	34.9	42.3	45.3	32.9	35.2
Primary	28.9	29.0	30.0	30.6	28.5	28.7	29.6	30.1
Secondary	23.8	22.3	23.6	23.1	23.4	21.5	23.5	23.0
Higher	5.6	4.4	13.6	11.5	5.8	4.5	14.0	11.7
Area of residence								
Urban	29.7	19.5	30.2	19.9	30.7	20.2	30.7	20.2
Rural	70.3	80.5	69.8	80.1	69.3	79.8	69.3	79.8
Division								
Barisal	9.4	6.6	9.0	6.2	8.8	6.1	8.8	6.1
Chittagong	18.4	18.5	17.5	16.7	17.3	16.3	17.3	16.3
Dhaka	24.1	31.0	26.2	32.7	25.9	32.3	25.9	32.3
Khulna	17.5	12.3	17.7	12.6	18.0	12.8	18.0	12.8
Rajshahi	20.2	26.0	20.1	26.7	20.5	27.2	20.5	27.2
Sylhet	10.3	5.7	9.4	5.2	9.6	5.3	9.6	5.3
Religion								
Islam	86.8	87.9	85.6	86.1	86.2	86.9	85.6	86.2
Hinduism	12.0	10.9	12.8	12.1	12.4	11.7	12.9	12.1
Buddhism	0.9	1.0	1.3	1.4	1.2	1.2	1.2	1.2
Christianity*	0.3	0.2	0.3	0.4	0.2	0.2	0.3	0.5
No. of living children								
0	12.0	11.9	10.1	9.9	9.5	9.6	8.9	8.9
1	20.2	20.0	18.6	18.5	19.5	19.1	18.5	18.3
2	22.8	22.4	22.5	22.1	23.8	23.6	23.3	23.0
3	17.8	18.1	17.6	17.7	18.8	19.0	18.2	18.4
4	11.8	11.8	12.8	13.0	12.4	12.7	12.9	13.1
5	7.4	7.5	8.9	8.9	8.7	8.5	9.0	9.0
6+	8.0	8.3	9.5	9.9	7.3	7.5	9.2	9.3
No. of respondent	9696	9720#	2556	2556	2249	2242#	2249	2242#

* 2 missing cases and 1 reporting other religion for currently married women and 3 missing cases and 1 reporting other religion for men as well as for husbands are included

# figures have been adjusted for rounding; NA= Not applicable

Distributions of area of residence (rural/urban residence) and division among the husbands are the same as their counterparts. About 86 percent of the husbands belong to the religion Islam. There is a slight difference between this figure and that for wives (86.2 percent). This may be because there are some inter-religion marriages among the couples. The distribution of living children among husbands does not match with that of wives. This may be due to children from previous marriages. However, the data do not allow us to examine this assumption. About 23 percent of the husbands mentioned that they have exactly two children. The next two groups that followed this group are husbands with one child (18.5 percent) and husbands with three children (18.2 percent). Weighting shows similar changes in the distributions of the different characteristics to those found for wives.

Table 3.2 reveals some other socio-economic and demographic variables for husbands. About 18 percent of the husbands have been married for 5 to 9 years. It is closely followed by the marital duration of 0 to 4 years (17.4 percent), 10 to 14 years (17.2 percent). About 8.6 percent of the respondents have 30 or more years of marital life. The mean marital duration is about 15 years. A little over 6 percent of the husbands have formed couples with female counterparts younger to them by less than three years. A few cases (1.6 percent of the respondents) have been observed (these are included in this group) where the husbands are found to be younger than their wives by up to six years. Around 32 percent of the husbands are older than their wives by 3 to 7 years. However, among 61.1 percent of couples, the age difference is found to be more than seven years. The average age difference is slightly over nine years. Fifty two percent of the husbands reported having access to a radio. The figures for television and newspapers are 55.7 percent and 29.4 percent respectively. Access to a medium of mass communication means that the respondent use to listen to, watch or read the medium at least once a week. Almost all (98 percent) of the respondents are employed. About 31 percent of the husbands are engaged in professional, technical or managerial type of jobs. Agriculture self-employed (25.8 percent), unskilled manual (20.3 percent), skilled manual (12.6 percent) and agricultural employee (7.1 percent) follow this.

Table 3.2 Percentage distribution of some other socio-economic and demographic variables for currently married husbands

Variables	Percentage
Marital duration (years)	
0-4	17.4
5-9	17.7
10-14	17.2
15-19	16.1
20-24	10.7
25-29	12.3
30+	8.6
Mean marital duration (years)	14.9 S.D.=9.8
Age difference between spouses (years)	
Less than 3*	6.4
3-7	32.5
8 and above	61.1
Mean age difference	9.18 S.D.=5.1
Access to radio	
Yes	52.0
No	48.0
Access to television	
Yes	55.7
No	44.3
Access to newspaper	
Yes	29.4
No	70.6
Employment and occupation	
Unemployed	2.0
Employed	98.0
Professional/technical/managerial	30.8
Agriculture self-employed	25.8
Agriculture employed	7.1
Skilled manual	12.6
Unskilled manual	20.3
Don't know	0.6
Missing	0.8
Number of husbands	2249

* This category includes a few cases (1.6 percent of the respondents) where husbands are junior to their wives by up to six years. Another 2.5 percent are of equal ages with their wives.

Fig 3.2 Urban sampling points, BDHS 1999-2000

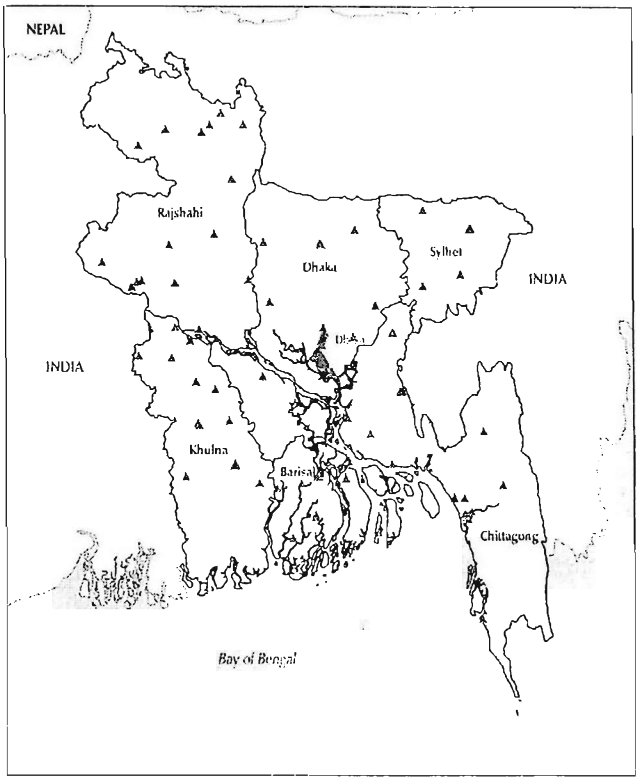
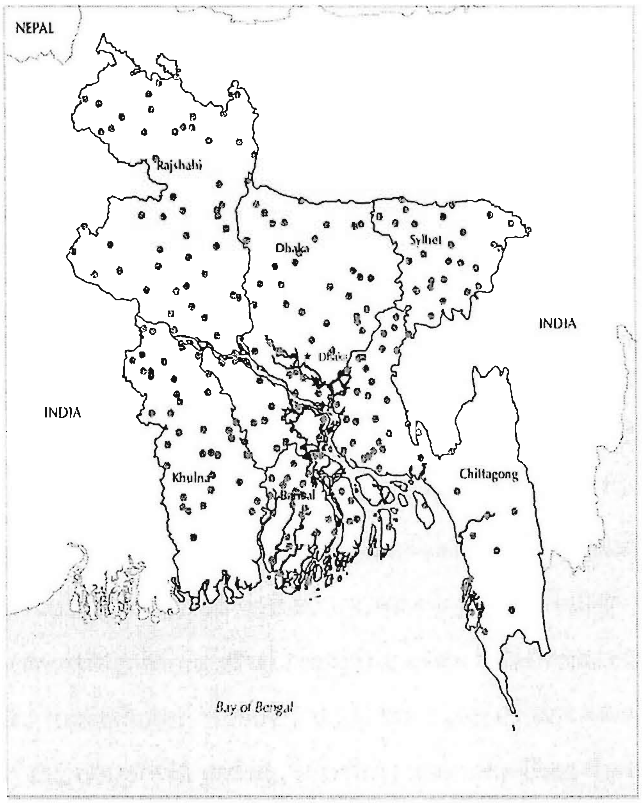

NEPAL
Rajshahi
Dhaka
Sylhet
INDIA
Dhaka
INDIA
Khulna
Barisal
Chittagong
Bay of Bengal

Fig 3.3 Rural sampling points, BDHS 1999- 2000


NEPAL
Rajshahi
Dhaka
Sylhet
INDIA
Dhaka
INDIA
Khulna
Barisal
Chittagong
Bay of Bengal

3.2 Discrepancies in reporting among married couples

Agreement in the couples' responses on the same issue or point is an indication of good understanding between them and the likelihood of a higher degree of couple communication. It is useful, therefore, to examine the consistency of the responses from the couples. In this section an attempt will be made to understand such discrepancies.

Discrepancies in reporting age, education, marital duration and number of living children

Table 3.3 reveals that wives are poor in reporting their husbands' age but quite accurate in reporting their husbands' education. Only 26 percent of the wives could mention their husbands' age correctly, while 76 percent of them could mention their husbands' education correctly.

Table 3.3 Difference of spousal responses

Variables	Percentage
Husband's age	
Same response from the spouses	26.2
Husband's education	
Same response from the spouses	76.0
Duration of marriage	
Same response from the spouses	31.7
Number of living children	
Same response from the spouses	92.0
Current use of contraception by methods	
Same response from the spouses	76.5

The assessment of accuracy of the husbands' reporting of their wives' age and education is not possible as the required variables are lacking in the data set. About 32 percent of the couples mentioned their duration of marriage correctly. Discrepancy in reporting number of living children was found among 8 percent of the couples. This may be due to the reporting of children from previous marriages (or from other cohabiting wives for husbands). Incidence of reporting of the number of children that are from outside of the couple is greater among husbands than their wives. This conforms to the social practice that children from previous marriages (or from other cohabiting wives in case of husbands) tend to remain in most of the cases with the husbands rather than the wives.

Discrepancies in reporting current use of family planning methods

The ability to assess husbands' reports alongside those of their wives potentially provides a complete picture of couples' contraceptive use behaviour. Possible inconsistencies in partners' reports are cause for concern. They merit further investigation because they challenge the accuracy of the contraceptive prevalence rate, which is traditionally measured from the women's direct response in the surveys (Becker and Costenbader, 2001).

In different studies discrepancies between husbands' and wives' responses were evident (Goyal, 1990; Karra et al., 1997; Khan and Singh, 1987). Discrepancies between spouses' answers about contraception and reproductive decisions have been explained as the respondents' attempt to provide a socially acceptable answer (Becker and Costenbader, 2001; Karra et al., 1997).

Generally, married men report higher levels of contraceptive use than married women do (Ahmed et al., 1987; Ashraf et al., 2000; Ezeh et al., 1996). According to the analysis of DHS data by Ezeh and colleagues, the discrepancy is largest in two Kenyan DHSs, where the gap between male and female responses is over 20 percentage points in each survey. In Ghana there is 14 percentage point difference. In just two countries Mali and Morocco women report slightly higher rates of contraceptive use than men do (Ezeh et al., 1996).

One possible explanation behind men's over reporting of contraceptive use, especially condom use may be that men are reporting the condom use outside of marriage. Another possibility is that some women may not acknowledge use of contraception, mainly female methods, to survey investigators, since they are using it without their husband's knowledge (Robey and Drennan, 1998). A study by Ahmed et al. (1987) concluded that Bangladeshi women were underreporting condom use. A similar situation is evident in Uttar Pradesh, India (Koenig et al., 1984).

There is a notable difference in the BDHS 1999-2000 (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001) findings on the current use of contraceptives by currently married men (63.5 percent) and currently married women (53.8 percent). Misreporting, misunderstanding of a method, lack of spousal communication and reporting method use out side marriage (especially for husbands) may be the possible reasons behind such discrepancies.

Among the couples, 76.5 percent provided a consistent response, in that both partners said that they were either currently using the same method or not using any method during the survey period (Table 3.3). About 65 percent of husbands, among the couples, reported that they were using a family planning method, compared with 59.5 percent of wives (Table 3.4). The extent of agreement regarding different methods will be found in the main diagonal elements of Table 3.4. Periodic abstinence, the pill and condoms are the methods where discrepancies in reporting the current use are mostly found. Most of the discrepancies are observed when husbands report using the methods while wives report non-use of methods. The reasons behind husband's report of pill use while wife reported non-use may be that husband paid for the pill or collected the pill, or knew that his wife have started using pill, but for any reason she did not use them or discontinued the method without informing her husband. Wives are found to report condom use less than their husbands. Higher reporting of the use of periodic abstinence among men than women has been observed. This may be due to the confusion between periodic and long term abstinence. Another reason may be that husbands are intentionally abstaining from sex as a practice of FP method without informing their wives, most of which is reported as non-use by the wives. Agreement on female sterilization between spouses is very close. While wives report to have performed female sterilization some of the husbands are found to report current use of other methods (not condom which is possible for the use to protect transmission of STIs or in the sexual relation out side of the marriage). It is not clear if these husbands are informed that their wives have undergone female sterilizations, as in some rare cases some husbands may not be informed.

Table 3.4 Comparison of reported contraceptive use by spouses: percent distribution of couples according to husband's and wife's reported current contraceptive use status, Bangladesh, 1999-2000

	Husband: current contraceptive method											
Wife: current contraceptive method	Not using	Pill	IUD	Injec tions	Condom	Female sterili-zation	Male sterili-zation	Periodic absti-nence	With-drawal	Norplant	Other method	Total
Not using	**30.1**	3.5	0.0	0.7	1.0	0.2	0.0	4.1	0.6	0.0	0.2	40.5
Pill	0.8	**23.3**	0.0	0.3	0.4	0.0	0.0	0.7	0.0	0.0	0.1	25.7
IUD	0.3	0.2	**1.3**	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	2.1
Injections	0.4	0.6	0.0	**6.2**	0.2	0.0	0.0	0.1	0.0	0.0	0.0	7.6
Condom	0.3	0.3	0.0	0.0	**4.0**	0.0	0.0	0.4	0.0	0.0	0.0	5.1
Female sterilization	0.1	0.1	0.0	0.0	0.0	**6.4**	0.1	0.0	0.0	0.0	0.0	6.8
Male sterilization	0.0	0.0	0.0	0.0	0.0	0.0	**0.4**	0.0	0.0	0.0	0.0	0.4
Periodic abstinence	1.8	0.5	0.1	0.2	0.4	0.0	0.0	**2.7**	0.3	0.0	0.0	6.0
Withdrawal	0.9	0.5	0.0	0.0	0.3	0.0	0.0	1.2	**1.4**	0.0	0.0	4.4
Norplant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.3**	0.0	0.4
Other method	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	**0.4**	1.1
Total	34.9	29.3	1.5	7.5	6.5	6.7	0.6	9.6	2.4	0.3	0.8	100.0

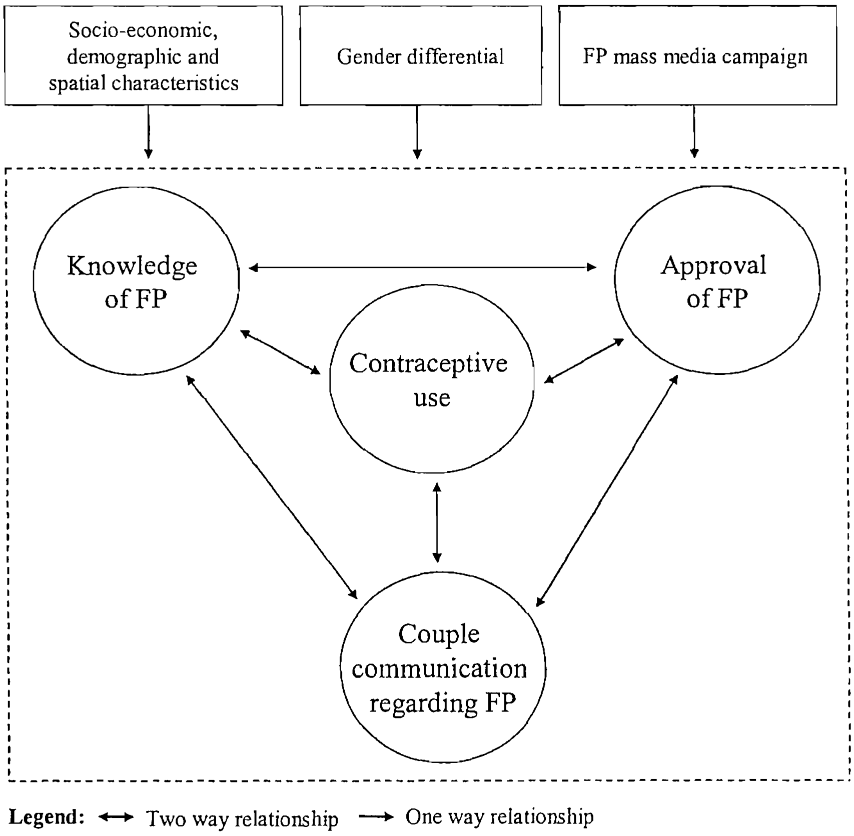
3.3 Data limitations

The questionnaire of the male dataset seems inspiring but the data indicates that many of the questions were not asked during survey. In the dataset some of the variables are listed but no information is recorded against them, for example, husband's approval of FP and couple communication regarding FP. Still many of the important variables for example, husband's income, husband's participation in decision making regarding FP, were not recorded in the survey. Use of the couple data set has helped for some missing variables in the men dataset, where wives' responses were used as proxies to husbands' responses. For some of the variables coding in the dataset was wrong. This has been corrected by consulting with the questionnaire and the published report of BDHS. There were missing cases in some of the variables that were handled carefully. Many of the variables have codes as "don't know" for which sufficient explanation was not given. Definition of some of the variables changes from survey to survey that did not allow for the study of trends in some cases, for example, decision making of FP in women sample. Many of the variables were conditional on time or on responses to other questions which reduces the sample size substantially and limits the scope to address some of the objectives mentioned in Chapter 1. The DHS does not provide any information regarding social norm, taboo, social desirability, and government policies or institutional activities relating to male FP and reproductive health activities. The overall limitation described here has lead to the modification of the conceptual frame work showing the relationship among different components of men's involvement in family planning presented in Chapter 2 (Fig 2.1).

3.3.1 Modified conceptual framework showing the relationship among different components of men's involvement in family planning

In the modified conceptual framework (Fig 3.4) social norm, taboo and social desirability were not considered as this information was not collected in the BDHS. The BDHS also does not provide any information on government policies regarding men's involvement in FP and men's access to institution dealing with FP matters. Hence, these have been excluded from the framework to be verified. Even though information regarding the target and content of FP mass media campaign was not collected in the BDHS, access to the mass media can be used as proxies in the analysis; hence, the component is kept in the conceptual framework.

Fig 3.4 Modified conceptual framework showing the relationship among different components of men's involvement in family planning


Socio-economic, demographic and spatial characteristics
Gender differential
FP mass media campaign
Knowledge of FP
Approval of FP
Contraceptive use
Couple communication regarding FP
Legend: ↔ Two way relationship → One way relationship

Chapter 4

Modeling of the data

Bangladesh Demographic and Health Survey (BDHS) data are hierarchical data in which the individuals are nested into communities (primary sampling unit) and communities are nested into divisions. All of the response variables to be considered for the regression analysis in the forthcoming chapters are categorical. Hence, binary logistic regression and multinomial logistic regression will be appropriate depending on the number of categories of the response variable. Because of the hierarchical nature of the BDHS data, there may be some community effects in the data as individuals clustered within a community may posses some common characteristics. For example, if there is a family planning clinic in the community, the individuals in that community may exhibit similar contraceptive behaviour. BDHS data provide a unique opportunity to examine such community effects using multilevel models. In this chapter a brief discussion of the models that will be used in the forthcoming analysis will be presented.

4.1 Single level binary logistic regression model

When the response variable in the regression analysis has only two categories - an event occurring and not occurring, the assumptions necessary for hypothesis testing in linear regression analysis are necessarily violated. For example, it is not reasonable to assume that the distribution of errors is normal. Another difficulty with multiple regression analysis is that the predicted values cannot be interpreted as probabilities. They are not constrained to fall in the interval between 0 and 1.

To overcome these problems a linear logistic regression is used. The logistic regression model is a very interesting method that does not require any distributional assumptions concerning explanatory variables (Cox, 1970; Hosmer and Lemeshow, 1989). The logistic regression model can be used not only to identify risk factors but also predict the probability of success. The general logistic model expresses a qualitative dependent variable as function of several independent variables, both qualitative and quantitative (Fox, 1984). A brief description of the model is given below. Suppose that there are *n* individuals, some of them respond "success" and the others are "failures". For example, if the response variable is current use of contraceptives, then the two categories may be respondent is currently using contraceptives (success) and not using any contraceptives (failure).

Let Y_i denotes the response variable (say, current use of contraceptives) for the *i*th individual and $Y_i = 1$ if the *i*th individual is a success (currently using contraceptives) and $Y_i = 0$ if the *i*th individual is a failure (not using any contraceptives). Suppose for each of the *n* individuals, *K* independent variables $X_{i1}, X_{i2}, \ldots, X_{iK}$ are measured. These variables are either categorical ones coded as dummy variables, such as religion, or rural/urban residence; or continuous, such as age. In the linear logistic model as suggested by Cox (1970), the dependence of the probability of success of independent variables is assumed to be

$$P_i = Pr\ (Y_i = 1) = \frac{\exp(\sum_{l=0}^{K} \beta_l X_{il})}{1 + \exp(\sum_{l=0}^{K} \beta_l X_{il})}\ , \qquad (4.1)$$

and $$1 - P_i = Pr\ (Y_i = 0) = \frac{1}{1 + \exp(\sum_{l=0}^{K} \beta_l X_{il})}\ , \qquad (4.2)$$

where $X_{i0} \equiv 1$ and the β_l s are the unknown coefficients. We define $X_{i0} \equiv 1$ in order to be able to write the right-hand sides of (4.1) and (4.2) more compactly as a summation of a single term, $\beta_l X_{il}$ that includes the intercept as $\beta_0 = \beta_0 X_{i0}$.

Equations (4.1) and (4.2) look complicated, however, the logarithm of the ratio of P_i and $(1 - P_i)$, which we called the logit of P_i, turns out to be a simple linear function of X_{il}, that is

$$\text{logit}(P_i) = \log_e \frac{P_i}{1 - P_i} = \sum_{l=0}^{K} \beta_l X_{il} = \beta_0 + \sum_{l=1}^{K} \beta_l X_{il} \qquad (4.3)$$

which express the log-odds of occurrence of an event as a linear function of the independent variables.

The logit is thus the logarithm of the odds of success, that is, the logarithm of the ratio of the probability of success to the probability of failure. It has several desirable properties. P_i is bounded between 0 and 1. If P_i is less than 0.5, logit(P_i) is negative; while if P_i is greater than 0.5, logit(P_i) is positive. From equation (4.3), we see that the logistic coefficient can be interpreted as the change in the log-odds associated with a one unit change in the independent variable. Since it is easier to think of odds, rather than log-odds, the logistic regression can be written in terms of odds as

$$\frac{P_i}{1-P_i} = \exp(\sum_{l=0}^{K} \beta_l X_{il}) \cdot \qquad (4.4)$$

The exponential of β_l is the factor by which the odds changes when the lth independent variable increases by one unit. If β_l is positive, this factor will be greater than 1 which mean that the odds are increased; if β_l is negative, the factor will be less than 1 which means that the odds are decreased. When β_l is 0, the factor equal to 1, which leaves the odds unchanged.

In logistic regression the parameters of the models are estimated by maximum likelihood. That is, the coefficient vector that makes our observed data most "likely" are selected. The contribution of individual variables in logistic regression depends on the other independent variables and the interpretation is difficult when they are highly associated.

In logistic regression, just as linear regression, the codes for the independent variables must be meaningful. We cannot take a nominal variable like religion and assign it arbitrary scores. In this situation we must recode the values of the independent variables by creating a new set of variables that correspond, in some way, to the original categories.

4.2 Two-level random intercept binary logistic regression model

Equation (4.3) will be extended to allow for a community level effect on the probability of the response variable, current use of contraceptives. Let the binary response be Y_{ij} which equals 1 if individual i in community j was using contraceptives, and 0 otherwise. Then the probability of using contraceptives is $P_{ij}=\Pr(Y_{ij}=1)$. If K independent variables $X_{ij1}, X_{ij2}, \ldots, X_{ijK}$ are measured at the individual level, then the equation (4.3) is extended to a two-level random intercept model as follows:

$$\text{logit}(P_{ij}) = \beta_{0j} + \sum_{l=1}^{K} \beta_l X_{ijl} \tag{4.5}$$

with

$$\beta_{0j} = \beta_0 + u_{0j} \ ,$$

where β_0 is a fixed component and u_{0j} is a community-specific component, the random effect which is assumed to follow a Normal distribution with mean zero and variance σ^2_{u0}. When σ^2_{u0} is found to be significant in the model, we conclude that there is a community effect in the model, which means that two individuals from different communities with same set of characteristics will show different values on the response variable.

4.3 Single level multinomial logistic regression model

The multinomial or polytomous logistic regression model is a generalization of the binary logistic regression model considered just above. In this context "binary" means that the response variable has two categories, and "multinomial" means that the response variable has three or more categories. As in binary logistic regression, the predictors in multinomial logistic regression may be quantitative, categorical, or a mixture of the two.

The explication of the multinomial logistic model is facilitated by a simple example. Suppose that response variable Y_i is contraceptive method choice with categories: 1= currently using modern method, 2= currently using traditional methods and 3= using no method. Let us denote the probabilities as $P_i^{(1)}=\Pr(Y_i=1)$, $P_i^{(2)}=\Pr(Y_i=2)$ and $P_i^{(3)}=\Pr(Y_i=3)$.

The categories of the response variables are mutually exclusive and exhaustive: a sample member must fall in one and only one of the categories. Suppose that the reference category is "no method". Suppose also that the predictor variables are education (low, medium, high) and religion (Islam or others):

M : 1 if medium education, 0 otherwise
H : 1 if high education, 0 otherwise
I : 1 if Islam, 0 otherwise

The multinomial logistic model then consists of two equations plus a constraint:

$$\log\frac{P_i^{(1)}}{P_i^{(3)}} = a_1 + b_1 M + c_1 H + d_1 I \qquad (4.6)$$

$$\log\frac{P_i^{(2)}}{P_i^{(3)}} = a_2 + b_2 M + c_2 H + d_2 I \qquad (4.7)$$

and

$$P_i^{(1)} + P_i^{(2)} + P_i^{(3)} = 1 . \qquad (4.8)$$

In general, the number of model equations (including the constraint) equals the number of categories of the response variable.

Strictly speaking, the quantities $\frac{P_i^{(1)}}{P_i^{(3)}}$ and $\frac{P_i^{(2)}}{P_i^{(3)}}$ in (4.6) and (4.7) are not odds, because numerator and denominator do not necessarily sum to one. We may think of $\frac{P_i^{(1)}}{P_i^{(3)}}$ and $\frac{P_i^{(2)}}{P_i^{(3)}}$ as "improper" odds. For convenience, however, and in accordance with common usage, we shall refer to them simply as odds. Each of these odds has for its denominator the probability of the reference category of the response variable.

The models in (4.6) and (4.7) can be fitted by the method of maximum likelihood. We assume that the mathematical form of the models is correct, and we choose the values of $a_1, b_1, c_1, d_1, a_2, b_2, c_2$ *and* d_2 to maximize the likelihood function.

Interpretation of coefficients

In multinomial logistic regression, the interpretation of coefficients is not as straightforward as in binary logistic regression. Suppose, for example, that d_1 is positive in (4.6) then one unit increase in I (from 0 to 1) causes $\log\frac{P_i^{(1)}}{P_i^{(3)}}$ to increase by d_1 units. When $\log\frac{P_i^{(1)}}{P_i^{(3)}}$ increases, the odds $\frac{P_i^{(1)}}{P_i^{(3)}}$ also increases, because $\log\frac{P_i^{(1)}}{P_i^{(3)}}$ is a monotonic increasing function of $\frac{P_i^{(1)}}{P_i^{(3)}}$.

However, we cannot reason that $P_i^{(1)}$ itself increases. $P_i^{(1)}$ could actually decrease. This could happen if $P_i^{(3)}$ also decreases and if the proportionate decrease in $P_i^{(3)}$ exceeds the proportionate decrease in $P_i^{(1)}$. In sum $\frac{P_i^{(1)}}{P_i^{(3)}}$ can increase while both $P_i^{(1)}$ and $P_i^{(3)}$ decrease.

Therefore, the positive value of d_1 does not necessarily mean that one unit increase in *I* acts to increase $P_i^{(1)}$. The opposite may also be true. This could not happen in binary logistic regression, because the numerator and the denominator of $\frac{P_i}{1 - P_i}$ can not move in the same direction. If P_i increases $1-P_i$ must decrease by the same amount. Therefore, if $\frac{P_i}{1 - P_i}$ increases, P_i must also increase.

The above discussion illustrates that, in multinomial logistic regression, the effects of predictor variables on $\log\frac{P_i^{(1)}}{P_i^{(3)}}$ and $\frac{P_i^{(1)}}{P_i^{(3)}}$ can be misleading, because the effect on $P_i^{(1)}$ can be in the opposite direction.

The same point applies to the effects of the predictor variables on $\log\frac{P_i^{(2)}}{P_i^{(3)}}$, $\frac{P_i^{(2)}}{P_i^{(3)}}$ and $P_i^{(2)}$. Therefore, in presenting results of multinomial logistic analysis, we emphasize less the odds and log odds and focus instead on the effects of the predictor variables directly on $P_i^{(1)}$, $P_i^{(2)}$ and $P_i^{(3)}$.

Let us now consider the more general case where the response variable Y_i has T mutually exclusive and exhaustive categories, denoted by $t = 1, 2, ..., T$. The Tth category is taken as the reference category for the response variable. Because the ordering of the categories is arbitrary, any category can be the Tth category, so that the choice of the reference category is also arbitrary.

In the general case there are also K predictor variables, denoted by $X_{i1}, X_{i2}, ...X_{iK}$. The independent variables may denote not only variables like M, H and I, but also variables like M^2, the quadratic term and MI, an interaction. The multinomial logistic model is then specified in log odds form as

$$\log\frac{P_i^{(t)}}{P_i^{(T)}} = \sum_{l=0}^{K} \beta_l^{(t)} X_{il} = \beta_0^{(t)} + \sum_{l=1}^{K} \beta_l^{(t)} X_{il} \quad ; t = 1, 2, ..., T\text{-}1 \tag{4.9}$$

and

$$\sum_{t=1}^{T} P_i^{(t)} = 1, \tag{4.10}$$

where X_{i0} is defined as $X_{i0}\equiv 1$. Again, we define $X_{i0}\equiv 1$ in order to be able to write the right side of (4.9) more compactly as a summation of a single term, $\beta_l^{(t)} X_{il}$ that includes the intercept as $\beta_0^{(t)} = \beta_0^{(t)} X_{i0}$. Equation (4.9) actually represents T-1 equations, one for each of the T-1 categories of the dependent variable. Therefore, equations (4.9) and (4.10) together represent T equations, with $(T\text{-}1)(K+1)$ coefficients to be estimated. By taking each side of (4.9) as a power of e and multiplying through by $P_i^{(T)}$, we can rewrite (4.9) as

$$P_i^{(t)} = P_i^{(T)} \exp\left(\sum_{l=0}^{K} \beta_l^{(t)} X_{il}\right) \quad ; t = 1, 2, 3, ..., T\text{-}1. \tag{4.11}$$

Summing equation 4.11 over t; $t = 1, 2, ..., T$-1, we get

$$\sum_{t=1}^{T-1} P_i^{(t)} = P_i^{(T)} \sum_{t=1}^{T-1} \exp\left(\sum_{l=0}^{K} \beta_l^{(t)} X_{il}\right)$$

Then $1 = P_i^{(T)} \sum_{t=1}^{T-1} \exp(\sum_{l=0}^{K} \beta_l^{(t)} X_{il}) + P_i^{(T)}$ [using 4.10]. (4.12)

Hence, $$P_i^{(T)} = \frac{1}{1+\sum_{t=1}^{T-1} \exp(\sum_{l=0}^{K} \beta_l^{(t)} X_{il})} \qquad (4.13)$$

where X_{i0}=1. By letting $\beta_0^{(T)} = \beta_1^{(T)} = ... = \beta_K^{(T)} = 0$ we can write (4.11) and (4.13) as

$$P_i^{(t)} = \frac{\exp(\sum_{l=0}^{K} \beta_l^{(t)} X_{il})}{1+\sum_{t=1}^{T-1} \exp(\sum_{l=0}^{K} \beta_l^{(t)} X_{il})} \quad ; t = 1, 2, ..., T \qquad (4.14)$$

where X_{i0}=1. The definition $\beta_0^{(T)} = \beta_1^{(T)} = ... = \beta_K^{(T)} = 0$ allows the equations for $P_i^{(t)}$ (t= 1, 2, ..., T) to be written in the compact equation as shown in (4.14). Since $\exp(\sum_{l=0}^{K} \beta_l^{(T)} X_{il}) = e^0 = 1$ and (4.14) reduces to (4.13) when $t = T$.

4.4 Two-level random intercept multinomial logistic regression model

Let Y_{ij} be the categorical response for individual i in community j and the probability of being in category t be denoted by $P_{ij}^{(t)}$. If K independent variables $X_{ij1}, X_{ij2},..., X_{ijK}$ are measured at the individual level then equation (4.9) can be extended to a two-level random intercept model as:

$$\log \frac{P_{ij}^{(t)}}{P_{ij}^{(T)}} = \beta_{0j}^{(t)} + \sum_{l=1}^{K} \beta_l^{(t)} X_{ijl} \quad ; t=1,2,...,T-1 \qquad (4.15)$$

$\beta_{0j}^{(t)} = \beta_0^{(t)} + u_{0j}^{(t)}$,

where $u_{0j}^{(t)}$ is a community level random effect assumed to be Normally distributed with mean zero and variance $\sigma_{u0}^{2\,(t)}$. The random effects are contrast-specific, as indicated by the t subscript, because different unobserved community-level factors may affect each contrast. The random effects may be correlated across contrasts: $\mathrm{Cov}(u_{0j}^{(t)}, u_{0j}^{(t')}) = \sigma_{u0}^{(t,t')} \quad ; t \neq t'$.

4.5 Estimation of multilevel models

To estimate the parameters in the multilevel models MLwiN (Rasbash et al., 2004) has been used. For multilevel models with discrete responses, maximum likelihood estimation is computationally intensive; therefore quasi-likelihood methods are implemented in MLwiN. These procedures employ a linearisation method based on a Taylor series expansion which finally transforms a discrete response model to a continuous response model. The model is then estimated using iterative generalized least square (IGLS) or reweighted IGLS (RIGLS) (for further details see Goldstein, 1995 and Goldstein, 2003). The transformation to linear models uses different approximations. Marginal quasi-likelihood (MQL) and predictive (or penalized) quasi-likelihood (PQL) are the types of approximation that are available in MLwiN. Both of the two methods can include either first order term or second order terms of the Taylor series expansion. The first order MQL procedure offers the crudest approximation and may lead to a downward bias in the estimates, which occurs particularly when the sample sizes within level 2 units are small or the response proportion is extreme. Second order PQL offers an improved approximation, but this method is less stable and convergence problems may arise. In the forthcoming analysis we will start with first order MQL procedure to obtain the starting values for the second order PQL procedure (see Goldstein, 2003 for details of quasi-likelihood procedures). Details regarding estimation of multilevel models in MLwiN can be found in the manuals (for example, Rasbash et al., 2004).

4.6 Selection of the final models

From the literature review an idea of the covariates that are thought to have a significant influence on the response variables will be made. Depending on the availability of these variables in the dataset bivariate analyses will be conducted to identify the significant association of these variables with the response variables by means of chi-square tests. Only variables significant in the bivariate analysis will be considered for the regression analysis, except the variables, **area of residence** (rural-urban residence) and **division** which will be retained in all the models to control for the over sampling in two divisions (Sylhet and Barisal) as well as in urban areas.

Obviously some of the variables that were found to be significant in bivariate analysis may not be found to have significant effect on the response variable in multiple regression analysis as the effects of these non-significant variables may be confounded with other significant variables. Single level models will be fitted using SPSS (version-12.0) considering only the variables significant in the regression analysis stage along with the variables, **area of residence** and **division** and a few other non-significant variables considered to be important for a particular model. The possibility of multicollinearity will also be considered in the regression analyses. In case of two highly associated independent variables two separate models will be fitted each containing only one of the variables. The selected independent variables in the final single level model will be then considered in the two-level random intercept model in MLwiN (version 2.0). If the community level effect in two-level random intercept model is found to be insignificant the single-level model will be retained. However, keep in mind that some of the level two units (the primary sampling units) that are regarded as corresponding to communities have very small numbers of observations which may lead to non-significance of the community level variations in the two-level models in some cases. All possible interactions among the predictor variables will be considered. This will be discussed in the relevant sections.

4.7 Residual analysis

The model assumptions of all the selected regression models to be presented in this thesis will be checked by using residual analysis. For single-level binary logistic regression models normalized residuals will be plotted against individual cases, expecting 1 percent of the residuals falling approximately out side of ± 2.58. Two typical residual plots, one acceptable and one unacceptable, are presented in Fig B1 in Appendix B. In case of any unacceptable residual plot (model violating the assumption) the normalized residuals will be plotted against the independent variables that were not included in the model to try to explain the extreme outliers and the model will then be rerun by including any appropriate variable that will lead to a better residual plot. For two-level random intercept binary logistic regression models a normal Q-Q plot of PSU (second level) residual will be generated. A straight line of the residuals supports the model assumption that second level residuals are distributed normally with constant variance. Two typical normal Q-Q plots of PSU residual, one acceptable and one unacceptable, are given in Fig B2 in Appendix B. To check the model assumptions for multinomial logistic regression models available statistical packages do not offer any help. However, an indirect check has been done by fitting separate binary logistic regression models from the categories of multinomial variable. The results of residual analysis will be reported in appropriate chapters if only there is any violation of the model assumptions.

4.8 Alternative methods of modeling the data

As the different components of men's involvement in FP identified in the conceptual framework (Fig 3.4; Chapter 3) can have influences on each other, an alternative approach to address the relationships, which we have not considered in this thesis, would be to fit the multiprocess models. In multiprocess modeling coefficients of different regression equations are estimated simultaneously (see Lillard, 1993). However, multiprocess models with categorical response variables especially in multilevel structures have their advantages and disadvantages which will be discussed in detail in Section 9.4 of Chapter 9.

Chapter 5

Men's contraceptive knowledge*

5.1 Introduction

Appropriate contraceptive knowledge among men is essential to enhance male participation in reproductive health. The importance of involving men in reproductive health and family planning (FP) is widely discussed in the literature, especially after the proceedings of the International Conference on Population and Development (ICPD) (Adewuyi and Ogunjuyibe, 2003; Herndon, 1998; Oyediran et al., 2002; Petro-Nustas, 1999, also see Chapter 2).

Until recently, most of the large-scale family planning surveys - the Knowledge, Attitudes and Practice surveys; the World Fertility Surveys; the Contraceptive Prevalence Surveys; and the first rounds of the demographic and health surveys (DHSs) collected reproductive health/FP data only from women (Drennan, 1998). The limited options of modern male methods may be the reason why these surveys have paid little attention to understanding men's knowledge, attitudes and practice of contraception (Ringheim, 1993). A comparative study of the DHS data pointed out that, in 15 out of the 21 countries, more than 90 percent of men recall knowing at least one contraceptive method (Drennan, 1998). However, the DHS data on knowledge do not necessarily mean that the respondent knows how to use the method, understands its effectiveness or side effects, or approves of it (Ezeh et al., 1996; Robey and Drennan, 1998). Other studies from Africa and the Middle East pointed out that men reported inconsistent and even wrong information regarding methods that reflected on their poor use of contraception (Ghazal-Aswad et al., 2002; McGinn et al., 1989; Petro-Nustas, 1999). A few other studies conducted elsewhere measured male knowledge using similar approaches (for example, Ashraf et al., 2000; Ghazal-Aswad et al., 2002; Khalifa, 1988; Mbizvo and Adamchak, 1991; Odimegwu, 1999; Oni and McCarthy,

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* Main findings of this chapter have been reported in Islam, M.A., Padmadas, S.S. and Smith, P.W.F. (2006) Contraceptive awareness among men in Bangladesh. *Journal of Family Planning and Reproductive Health Care*, 32(2):100-103.

1991; Oyediran et al., 2002) except the study by Adewuyi and Ogunjuyigbe (2003) that used the same question to measure knowledge but reconfirmed it by asking if the respondent could describe how to use the method. Despite these differences in measuring knowledge, none of these studies cited above systematically addressed and modeled the degree of contraceptive knowledge – i.e. the total number of various methods known among men.

Knowledge of at least one method is effectively universal in Bangladesh. The existence of such knowledge is found to have little effect on method use (see Fig 5.1), particularly for male contraceptives; many couples restrict their use mostly to pills in Bangladesh. With a universal level of contraceptive knowledge it is expected that level of the ever use of contraceptives should further approach the level of the contraceptive knowledge. The 1999-2000 DHS in Bangladesh reported that 23 percent of currently married women used pills, 7 percent used injectables, nearly 1 percent used the Intra-Uterine Device (IUD) and condom use accounted for only 4 percent and male sterilization was below 1 percent (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001; Table 1.1 in Chapter 1). Although the DHS conducted in Bangladesh made efforts to collect data on men's knowledge of FP and reproductive health, such data have not been analyzed systematically. For instance, although these surveys demonstrated universal contraceptive knowledge among men and women there is hardly any increase in the uptake*, especially of male methods. The reasons for the poor acceptance of male methods, so far, remain largely unknown.

An attempt is made in this chapter to examine the degree of men's contraceptive knowledge and the associated determinants in Bangladesh using the data from the recently conducted DHS (1999-2000). Furthermore, we investigated whether method use is associated with a high degree of contraceptive knowledge. Individuals tend to learn about more methods and consequently switch to different methods based on their past and current experiences (for example, side-effects, dissatisfaction with a particular method). Knowledge is instantaneous and cumulative in nature. In the BDHS, information on knowledge was collected at the time of survey whereas current use pertains to behaviour at any time preceding the survey.

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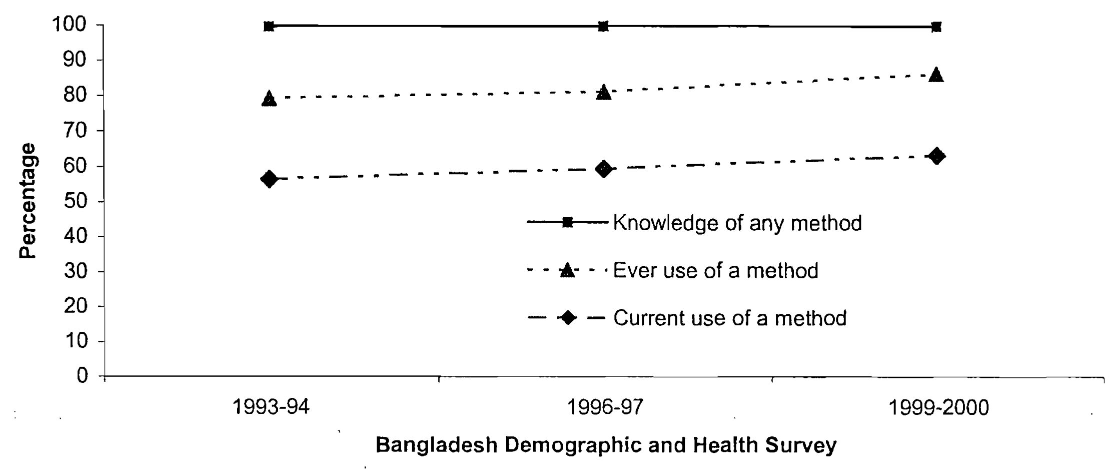
* Different surveys demonstrate unmet need for contraceptives for women but nothing is known about possible unmet need for men. However, contraceptives are accessible by men in Bangladesh and in particular cases men can use traditional male methods. Hence, unmet need for at least one method for men can be discounted, because they can practice withdrawal or periodic abstinence whenever needed.

Fig 5.1 Trend in knowledge and use of FP



5.2 Results and discussion

Knowledge of family planning methods was assessed through a series of questions in the BDHS. Respondents were first asked to mention the ways or methods by which a couple could delay or avoid pregnancy. When a respondent could not mention a particular method spontaneously, the interviewer described the method and asked whether the respondent had heard of it (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001). The spontaneous and prompted responses were used to determine the knowledge about a method. The number of modern methods listed in the BDHS was nine: pills, IUD, injectables, condoms, Norplant, menstrual regulation[#], foam/diaphragm/jelly, male and female sterilization.

[#] Menstrual regulation by vacuum aspiration is a method for establishing non-pregnancy following a missed menstrual period, usually before the pregnancy is clinically confirmed. For this reason, the procedure is not legally defined as abortion. The procedure is allowed up to 10 weeks since the last menstrual period but in practice, it is sometimes provided up to 12 weeks (Akhter 1988; BAPSA 1996). Since 1979, the practice of menstrual regulation has been permitted in Bangladesh and it is considered as a family planning method. Induced abortion is still illegal and is allowed only for health reasons.

The spontaneous reports of the top five modern methods known (Table 5.1, Fig 5.2) were ranked as: pill (93.9 percent), condoms (79.5 percent), injectables (45 percent), female sterilization (44.8 percent) and male sterilization (27.4 percent). Roughly 3 percent provided a spontaneous response of having heard of Norplant. Norplant was also the least commonly known among all modern methods (24 percent).

Table 5.1 Contraceptive knowledge among husbands aged 15-59 years, Bangladesh, 1999-2000 (percent)

Method	Spontaneous	Prompted	Total
Pill	93.9	5.9	99.8
IUD	20.0	50.1	70.1
Injectable	45.0	46.9	91.9
Condom	79.5	17.9	97.4
Female sterilization	44.8	49.4	94.2
Male sterilization	27.4	59.1	86.5
Norplant	3.4	20.9	24.3
Foam/diaphragm/jelly	20.0	50.1	70.1
Menstrual regulation	4.1	51.0	55.1
Periodic abstinence	12.0	62.3	74.3
Withdrawal	3.4	44.6	48.0
Lactational amenorrhea	0.7	20.7	21.4
Other (folkloric)	6.8	0.0	6.8
Any male method*	83.5	15.8	99.3
Any modern male method*	82.4	16.5	98.9
Any traditional method	18.8	63.9	82.7
Any method	98.4	1.6	100.0
Any modern method	98.3	1.7	100.0
Number of men† respondents	2,249	2,249	2,249

*Any male method includes condom, male sterilization, periodic abstinence and withdrawal, and male modern methods include condoms and male sterilization; † husbands in the couple dataset

The spontaneously reported knowledge of any male modern method was 82.4 percent (Table 5.1, Fig 5.3). The ranking of reported ever-use, particularly for reversal methods, also followed the same order (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001). None of these responses indicate any functional knowledge of methods since the BDHS did not collect such specific information. Again, this knowledge cannot even explain the age-specific pattern of use of contraceptives by husbands (Fig 5.4 and Fig 5.5). Fig 5.4 and Fig 5.5 show that there is no noticeable age-specific variation in contraceptive knowledge among men that can be associated with the age-specific variation in contraceptive use among men. This leads us to consider a modified definition of contraceptive knowledge based on the information collected by BDHS (BDHS is the main source of information of male contraceptive knowledge), which can be thought of as degree of contraceptive knowledge. The degree of contraceptive knowledge was measured by the number of different modern methods that men had ever heard of. The more the number of methods known the higher is the degree of knowledge.

Fig 5.2 Knowledge of contraceptive methods

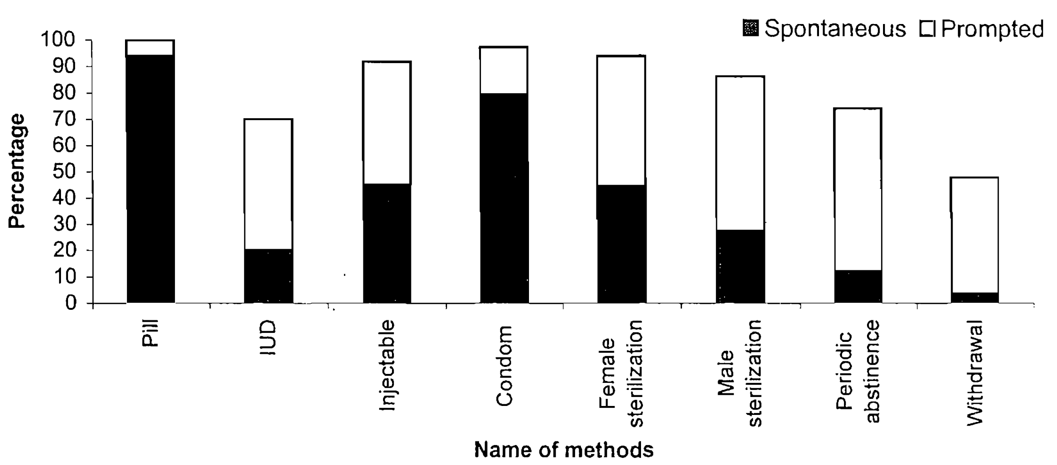


Fig 5.3 Knowledge of FP methods

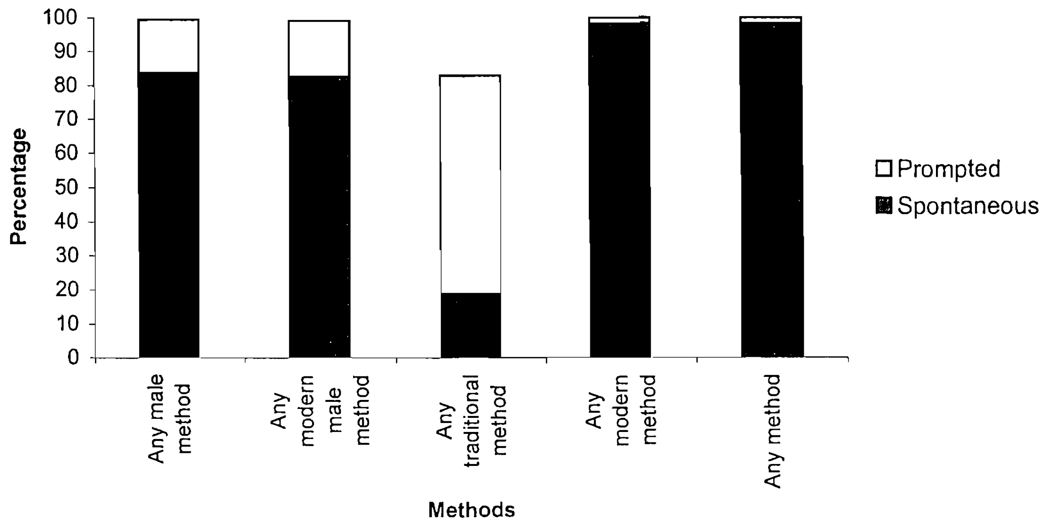


Fig 5.4 Distribution of contraceptive knowledge and use by age

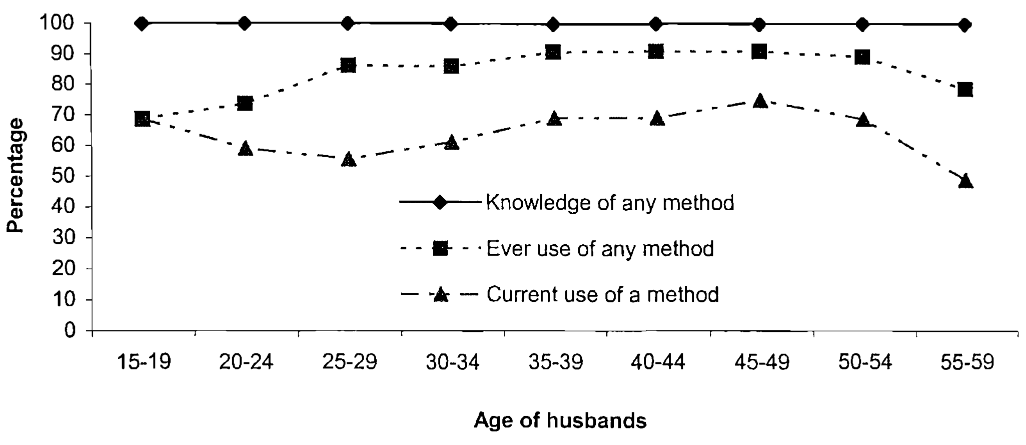


Fig 5.5 Distribution of knowledge and current use of methods by age

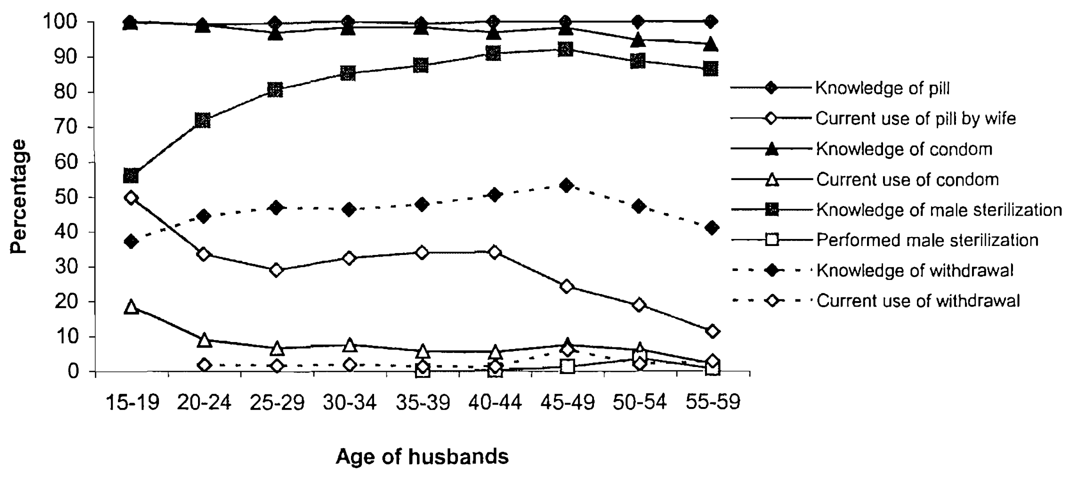


Table 5.2 presents the degree of reported (spontaneous and prompted) contraceptive knowledge among husbands. About 47 percent of husbands reported having heard of either eight or nine modern methods. The mean number of modern methods known among husbands was 6.9. About 19 percent reported knowledge of four or five modern methods. Our data investigations showed that among 19 percent of those who had heard of four or five modern methods, 88 percent knew at least four of the top five methods and about 99 percent reported knowledge of at least three of the top five methods (data not presented).

Table 5.2 Percentage of husbands aged 15-59 years by number of methods known, Bangladesh, 1999-2000 (N=2,249)

Number of methods	Type of methods	
	Modern	All
≤3	4.7	2.6
4-5	18.5	11.1
6-7	29.9	18.5
8-9	46.9	30.6
10-13	0.0	37.2
Mean number of methods known	6.9	8.4

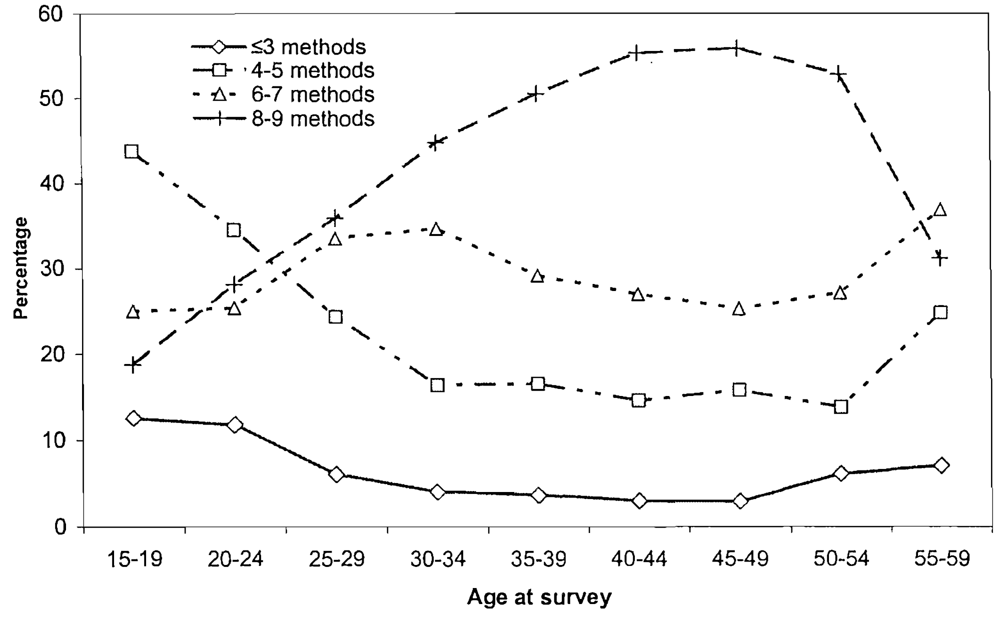
Note: There were 9 modern methods and 13 methods of all types.

The mean number of modern methods known among older husbands (40 and above) was slightly higher when compared with their younger counterparts (Table 5.3). This clearly indicates that older cohorts of husbands had a high degree of contraceptive knowledge, for example nearly 80 percent of husbands aged 40 years and above knew six or more methods when compared with those aged below 25 years (52 percent). A graphical representation of the relationship between husband's age and the degree of modern contraceptive knowledge is shown in Figure 5.6. The degree of knowledge also varied considerably by the duration spent in marital union. The longer the time spent in the union the higher is the degree of contraceptive knowledge. This might be attributed to the fact that men gain contraceptive knowledge over the reproductive lifetime through their contraceptive experiences, such as, method switching due to side effects. Another reason may be that men in marriages of long duration are older and hence are likely to learn about more contraceptive methods.

Table 5.3 Number of modern methods known by husband's age and marital duration, Bangladesh, 1999-2000

	Percentages knowing various numbers of methods					
Characteristics	≤ 3	4-5	6-7	8-9	Total	Mean
Age (Years)						
Less than 25	11.9	35.7	25.4	27.0	126	6.0
25-39	4.5	18.6	32.1	44.8	1120	6.9
40 and above	4.2	16.3	27.9	51.6	1003	7.1
Marital duration (Years)						
Less than 5	7.2	26.1	29.2	37.6	391	6.5
5-10	5.1	18.4	31.9	44.6	473	6.8
11 and above	4.0	16.4	29.4	50.3	1385	7.0

Fig 5.6 Degree of method knowledge by age of husbands at survey, 1999-2000



Regression analyses

The determinants of the degree of men's contraceptive knowledge were explored using multinomial logistic regression techniques. The dependent variable in the regression analysis was the degree of knowledge of modern methods. We selected four categories to represent the degree of knowledge: knowledge of 3 or fewer methods, 4-5 methods (the reference category), 6-7 methods and 8-9 methods. The reported top ranked methods (knowledge and ever-use for reversible methods) are pills, condoms, female sterilization, injectables and male sterilization. The category that included men who only knew most of these popular methods was chosen as the reference category. In fact more than four fifths of men in this category knew at least four of these popular methods. Hence, this category can be thought of as containing men with basic knowledge of modern methods. We did not consider the degree of knowledge as a count variable because we do not believe that acquiring the knowledge of each additional method should be given equal weight. The four categories were chosen based on the ranking of both reported knowledge (spontaneous) and ever-use of different methods. The analysis considered both spontaneous and prompted responses for two reasons. First, we do not know how interviewers handled these questions in the survey, particularly spontaneous responses of contraceptive knowledge. Second, a few of the modern methods do not have specific local (Bengali) names that people can easily remember (for example Norplant) and therefore prompting is necessary. The BDHS report considered both spontaneous and prompted responses together to measure knowledge (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001). The reasons behind high spontaneous response rates for the pill and condom may be that these two are the methods of contraception most advertised in the local media. Information on other methods is disseminated mostly by the family planning workers with whom men/husbands usually have less contact. We did not consider traditional methods as these methods have high failure rates and the Bangladesh family planning programme does not cover traditional methods (Piet-Pelon et al., 2000). Another reason is that reported knowledge of these methods is based on mostly on prompting (Table 5.1, Fig 5.2 and Fig 5.3).

Two separate models were fitted for multicollinearity reasons. Model 1 controlled for age of the husband and model 2 controlled for marital duration. Two specific control (spatial) variables – division and urban-rural residence - were retained in all these models to capture the effect of over sampling particularly in two divisions, Barisal and Sylhet, as well as in urban areas. Other important demographic and socioeconomic variables considered were age, marital duration, number of living children, spousal age difference, education, religion and access to mass media (TV/radio/newspaper) and employment. In addition, we examined attitudinal (husband's approval of methods) and behavioural (current use of methods) variables. A description of the background variables considered is shown in Tables 3.1 and 3.2 in Chapter 3. When we included a community level random effect using a two-level random intercept model, it was insignificant – the variations within primary sampling units were almost negligible. Therefore, we relied on fixed effects single-level multinomial regression models.

Results of model 1 are presented in Table 5.4 and discussed in terms of the estimated probabilities corresponding to the estimated coefficients (Table 5.5). The estimated probabilities are calculated based on the reference man's characteristics. The reference man for model 1 is aged between 25-39 years, from Dhaka division, resident in rural areas, has primary education, belongs to the religion Islam, does not have the access to a TV, does not have the access to a radio, does not approve of FP, not currently using FP and has 1-2 children.

The estimated probabilities reveal that the reference man has an estimated 3.6 percent probability of knowing 3 or less number of modern methods, 35.1 percent probability of knowing 4-5 methods, 41.7 percent probability of knowing 6-7 methods and only 19.6 percent probability of knowing 8-9 methods. Significant effects of age have been evident in the analysis. The probability of respondent knowing of 3 or less methods is increased by 5 percent points if the respondent is aged less than 25 years. A remarkable 20 percent point increase in the probability of knowing 4-5 methods is observed if the respondent is aged less than 25 years. The probability decreases for the knowledge of 6-7 methods as well as for 8-9 methods. For the respondent aged 40 and above, the probability of knowing 3 or less methods increases and probability of knowing 4-5 methods and 6-7 methods decrease slightly and exhibits 5 percent point increase in the probability of knowing 8-9 methods compared to the reference man.

A significant increase in the probability of knowing 3 or less method is found if the respondent is from Khulna division (26 percent) or Sylhet division (21.7 percent). The probability of knowing 4-5 methods increases if the respondent is from Sylhet or Chittagong divisions and decreases for other divisions. If the respondent is from Rajshahi or Barisal divisions his probability of knowing 6-7 methods increases by 3.2 and 0.5 percent points respectively and the probability reduces by 12 percent points if he is from Sylhet division. An increased probability by up to 6 percent points is evident for the respondent of knowing 8-9 methods if he is from Rajshahi division and the probability reduces by about 9.4 percent points if the respondent is from Sylhet division. Area of residence does not show significant impact on the method knowledge.

Education has a significant impact on the degree of knowledge of modern methods of the respondents. The probability of knowing 5 or less methods increases, whereas the probability of knowing 6 or more methods decreases if the respondent has no education. As the education of the respondent increases, the probability of knowing more methods increases. If the respondent had education up to higher (higher than secondary) level, his probability of knowing 8-9 methods would have been increased by about 40 percent points. The probability of knowing 4-5 methods increases if the respondent is from a religion other than Islam, but the probability decreases for knowledge of 6 or more methods. If the respondent has access to TV his probability of knowing 6 or more methods increases. The probability of knowing 7 or less methods decreases and the probability of knowing 8-9 methods increases if the respondent has access to radio. Approval of FP by the respondent increases his probability of knowing more methods. His probability of knowing 8-9 methods is elevated by 7 percent points if the respondent approves of FP. A similar result is evident for current users. Both the probabilities of knowing 6-7 methods and 8-9 methods is found to increase by around 4 percent points if the respondent is currently using FP. The number of living children has a positive relationship with method knowledge. With less number of children the respondent shows a decreased probability of knowing higher number of methods (6-9 methods). But the probability increases if the respondent has a larger number of children. An increase by more than 5 percent points is observed for the probability of the respondent to know 6-7 methods if he has 5 or more children. However, if the respondents would have 3-4 children his probability of knowing 8-9 methods would have been the highest (25.4 percent).

The results confirmed our hypothesis that contraceptive use* instigates knowledge of more methods among men. The relationship between current use and degree of contraceptive knowledge based on the regression results showed that current method users were significantly more likely to report knowledge of 6 or more methods.

In model 2 the reference man is considered to change his characteristics slightly. Instead of the reference man belonging to the age group 25-39 years he has marital duration of 5-10 years with all other characteristics as same as in model 1. If the respondent has marital duration less than 5 years he is more likely to know less number of methods, that is, less than 6 methods. Again if his marital duration increases to 11 and more years his probability of knowing 8-9 methods increases by more than six percent points. Changes in all other characteristics demonstrate similar changes in the probabilities as in model 1 (results not shown).

In order to investigate the effect of type of occupation (at survey) which was only measured for 96.6% of the sample (see Table 3.2), the model was refitted to the data for this part of the sample (N= 2172). The results for this variable are reported in Table 5.6 and discussed in terms of the estimated probabilities corresponding to the estimated coefficients (Table 5.7). The other variables included in the model showed similar results as that was obtained in Table 5.4. The additional characteristic the reference man has in this model than the reference man in model 1 (Table 5.5) is that he is employed in unskilled manual job. If the respondent were employed in the professional/technical/managerial sector his probability of knowing 8-9 methods would increase by about 8 percent points. There was hardly any difference between those who were engaged in skilled manual and those in professional/technical/managerial sector.

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* Contraceptive use was considered as one of the independent variables in the regression models.

Table 5.4 Multinomial logistic regression parameter estimates for the effect of demographic and socio-economic characteristics on the degree of husbands' modern method knowledge, 1999-2000

	Estimates (degree of modern method knowledge)					
	≤ 3		6-7		8-9	
Independent variables	β	SE	β	SE	β	SE
Age (*reference: 40 and above*)						
Less than 25	.124	.451	-.903***	.302	-1.294***	.305
25-39	-.251	.291	.038	.162	-.270*	.158
Division (*reference: Sylhet*)						
Barisal	-.589	.473	.529*	.281	.566*	.289
Chittagong	-1.133***	.418	.303	.243	.716***	.247
Dhaka	-1.702***	.438	.442*	.227	.748***	.234
Khulna	.473	.338	.366	.248	.549**	.252
Rajshahi	-.763*	.415	.931***	.248	1.439***	.254
Area of residence (*reference: Rural*)						
Urban	.101	.274	.026	.154	.054	.150
Education (*reference: Higher*)						
No education	1.204	.790	-.649**	.316	-2.285***	.290
Primary	1.014	.791	-.375	.316	-1.971***	.290
Secondary	.844	.815	-.320	.330	-.922***	.297
Religion (*reference: Others*)						
Islam	.341	.346	.326*	.188	.304*	.180
Access to TV (*reference: No*)						
Yes	.314	.250	.316**	.144	.486***	.142
Access to radio (*reference: No*)						
Yes	-.465*	.242	.032	.135	.321**	.133
Respondent approves FP† (*reference: No*)						
Yes	-.395	.265	.183	.168	.477***	.175
Currently using method (*reference: No*)						
Yes	.005	.247	.289**	.140	.380***	.138
Number of living children (*reference: 5 and more*)						
0	.360	.471	-.431	.290	-.564**	.297
1-2	.221	.372	-.198	.213	.002	.213
3-4	-.256	.364	-.133	.196	.346*	.194
Intercept	-1.901**	.880	-.060	.414	.608	.397

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01; SE denotes Standard Error.
† based on wife's perception of husband's approval of FP

Table 5.5 Degree of modern method knowledge: adjusted predicted probabilities from multinomial logistic regression model (N=2,249)

Characteristics	≤ 3	4 to 5	6 to 7	8 to 9
Age				
Less than 25	8.2	55.1	25.6	11.1
25-39^c	**3.6**	**35.1**	**41.7**	**19.6**
40 and above	4.4	33.2	38.0	24.4
Division				
Barisal	10.1	32.5	42.2	15.2
Chittagong	6.6	36.2	37.5	19.7
Dhaka^c	**3.6**	**35.1**	**41.7**	**19.6**
Khulna	26.0	28.9	31.8	13.3
Rajshahi	6.1	23.2	44.9	25.8
Sylhet	21.7	38.6	29.5	10.2
Area of residence				
Urban	3.9	34.2	41.7	20.2
Rural^c	**3.6**	**35.1**	**41.7**	**19.6**
Education				
No education	5.1	41.0	37.1	16.8
Primary^c	**3.6**	**35.1**	**41.7**	**19.6**
Secondary	2.1	25.4	31.9	40.6
Higher	0.5	14.7	25.5	59.3
Religion				
Islam^c	**3.6**	**35.1**	**41.7**	**19.6**
Others	3.1	42.7	36.6	17.6
Access to TV				
Yes	3.8	27.2	44.3	24.7
No^c	**3.6**	**35.1**	**41.7**	**19.6**
Access to radio				
Yes	2.1	32.6	40.1	25.2
No^c	**3.6**	**35.1**	**41.7**	**19.6**
Respondent approves FP				
Yes	2.0	29.4	42.0	26.6
No^c	**3.6**	**35.1**	**41.7**	**19.6**
Currently using method				
Yes	2.9	28.5	45.2	23.4
No^c	**3.6**	**35.1**	**41.7**	**19.6**
Number of living children				
0	5.0	42.1	39.6	13.3
1 to 2^c	**3.6**	**35.1**	**41.7**	**19.6**
3 to 4	2.0	32.0	40.6	25.4
5+	2.7	32.3	46.9	18.1

c- characteristics of the reference man

Table 5.6 Multinomial logistic regression estimates predicting the effect of husbands' type of occupation on the degree of husbands' modern method knowledge controlling for other characteristics[#]

Independent variables	Estimates (degree of modern method knowledge)					
	≤ 3		6-7		8-9	
	β	SE	β	SE	β	SE
Occupation (*reference: Prof./tech./manage.*)						
Unskilled manual	-.558	.358	-.184	.199	$-.571^{***}$	.196
Agriculture self-employed	-.031	.331	-.074	.197	$-.409^{**}$	.191
Agriculture employed	-.743	.455	$-.746^{***}$	.256	$-.890^{***}$	.260
Skilled manual	.200	.428	.116	.248	.000	.236
Intercept	-1.859^{**}	.890	-.078	.432	$.791^{*}$	.412

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01.

[#]Other control variables in this model were the same as shown in Table 5.4

SE denotes Standard Error

Table 5.7 Degree of modern method knowledge: adjusted predicted probabilities from multinomial logistic regression model [#] (for occupation)

Characteristics	≤ 3	4 to 5	6 to 7	8 to 9
Occupation				
Unskilled manual[c]	**2.6**	**37.0**	**42.0**	**18.4**
Agriculture self-employed	3.9	33.6	42.7	19.8
Agriculture employed	2.8	48.3	31.4	17.5
Skilled manual	4.1	28.0	43.1	24.8
Prof./tech./manage.	3.5	29.7	40.6	26.2

# Other control variables in this model were the same as shown in Table 5.4

c- characteristics of the reference man

5.3 Conclusion

In the Bangladesh context, a high degree of men's knowledge of family planning is a precursor to future contraceptive use behaviour, particularly male-based methods. Men's lack of knowledge of wide range of contraceptive options may perhaps explain the very low use of condoms and male sterilization in the society. The plan of action outlined in the ICPD proceedings since 1994 stressed the improvement of informed method choices among couples and increased male participation in family planning. However, our analysis showed that there are still many men who lack more than a basic knowledge of the range of method options. The analysis presented in this section moves beyond the traditional approach of modeling contraceptive knowledge (especially based on DHS data) which has tended to observe universal contraceptive knowledge among the population in the reproductive ages. In order to gain better insights and forecast men's contraceptive use behaviour, it is important to address the degree of their knowledge – that is the extent to which men knew about different options (reversible/irreversible methods). Although we cannot ignore the role of traditional method knowledge and use, it is more important to focus on effective modern methods such as condoms that are able to combat sexually transmitted infections, especially HIV/AIDS. Knowledge could be explained in terms of number of modern methods known as suggested in this chapter. Men who had a low degree of modern contraceptive knowledge seem not to be properly informed about the wide range of contraceptive options.

This analysis demonstrated that dissemination of contraceptive knowledge is inadequate in terms of the informed method choices and options, as well as not reaching all men in the society. For example, men in Sylhet division appeared to be far behind in terms of their degree of contraceptive knowledge. Our analyses suggest that mass-media could be utilized for the dissemination of the wide range of contraceptive options. Such efforts could focus on exclusive family planning programmes targeting both married and unmarried men in Bangladesh. Policies should address and consider the associated factors, as revealed in this analysis, that influence men's contraceptive knowledge in order to ensure active male participation in reproductive health in Bangladesh. Finally, it is even more important to focus not only the degree of contraceptive knowledge but also the functional and utility mechanisms associated with each specific method, such as how to use the methods and what are the potential side effects. It is expected that the results of this study might help policy planners and programme managers to identify the gaps that exist in the provision of a wide range of modern contraceptive information and to develop strategies to improve the use of male methods.

Chapter 6

Men's approval of family planning*

6.1 Introduction

Approval of family planning (FP) is a precondition for successful practice of contraception. In societies where men have a dominant role over their wives' reproductive decisions, men's FP approval becomes an important area of research to be addressed by social scientists and FP programme managers. Most of the DHSs (Demographic and Health Surveys) conducted elsewhere and in Bangladesh reported that men generally approve of family planning (Drennan, 1998; Lasee and Becker, 1997; Robey and Drennan, 1998). Similar conclusions were derived from a few other family planning surveys (Adewuyi and Ogunjuyigbe, 2003; Islam et al., 2001; Islam and Kabir, 2000; Mbizvo and Adamchak, 1991; Oni and McCarthy, 1991). The DHS conducted in eight of 12 countries with available data for men concluded that 70 percent or more of men approve of contraceptive use, and the figures reached 90 percent or more in six of these countries. The level of approval, however, varies from country to country and by men's residential, socioeconomic, and educational status (Drennan, 1998; Ezeh et al., 1996; Mbizvo and Adamchak, 1991; Oni and McCarthy, 1991; Robey and Drennan, 1998; Roudi and Ashford, 1996). Most of the surveys demonstrate that approval is high among young men, those residing in urban areas and among those who have high levels of schooling. Although men's approval is high, it is usually lower than women's in many countries, except a few countries or regions such as Malawi, Pakistan (Drennan, 1998) and south western Nigeria (Adewuyi and Ogunjuyigbe, 2003).

In most societies, men's FP approval has been found to have a positive influence on the utilisation of family planning services (Cook and Maine, 1987). In Bangladesh, husbands' approval of FP is identified as a significant determinant especially of wives' contraceptive use (Islam et al., 2001; Islam and Kabir, 2000; Islam, 2000; Islam and Kabir, 1998; Khan and Rahman, 1997). Studies in other countries also drew similar conclusions (Joesoef et al., 1988; Mesfin, 2002; Salway, 1994). The three successive Bangladesh Demographic and Health Surveys (BDHS 1993-94, BDHS 1996-97 and BDHS 1999-2000) (Mitra et al., 1994; Mitra et al., 1997; National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001) demonstrate an almost constant rate of FP approval by husbands and wives, although husbands lag behind their wives in terms of approving of family planning. The contraceptive prevalence rate (CPR) is found to be increasing over time although family planning approval has not much changed among men and women (Fig 6.1). If the level of husbands' FP approval could be increased at least up to that of their wives, then the CPR could be expected to increase further. Even though studies have addressed men's attitude toward family planning mostly in terms of their approval of FP, little has been done to understand the reasons why some men do not approve of FP, especially in the Bangladesh context. This study investigates the factors that influence men's approval of family planning in Bangladesh using the data from the 1999-2000 BDHS (National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001).

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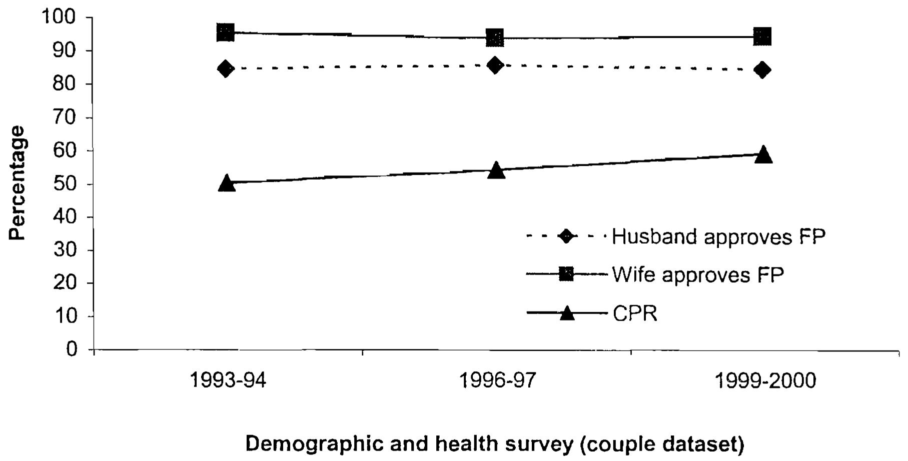
* Main findings of this chapter have been reported in Islam, M.A., Padmadas, S.S. and Smith, P.W.F. (2006) Men's approval of family planning in Bangladesh. *Journal of Biosocial Science*, 38: 247-259.

In the BDHS 1999-2000, the male data set did not provide information on men's approval of family planning, even though these were collected in the previous DHS surveys. We did not consider BDHS 1996-97 to address husbands' approval of family planning because we were interested in recent changes in contraceptive attitudes and behaviour. Moreover, after 1996, under the Health and Population Sector Strategy, the FP and reproductive health service delivery system in Bangladesh has changed from a door to door system to a one-stop 'satellite clinic' system where clients will receive essential service packages from one community point (for details see Routh et al., 2001) which again has been brought to the previous system during the current government. We believe that these policy changes will have some impact on individual responses in the BDHS 1999-2000. For this reason we used the BDHS 1999-2000.

Fig 6.1 Relationship between family planning approval and contraceptive prevalence rate (CPR), Bangladesh, 1993-2000



Note: All the plotted variables are based on wives' responses

Women's response regarding their husbands' attitude toward FP has been used from the women's part of the couple data set. The DHS questionnaire asked the wife, "Does your husband approve of FP?" The predefined response options were "disapproves", "approves" and "don't know". Bangladeshi women are reasonably accurate in their perception of the approval of family planning by their husbands. According to the BDHS 1996-97, wives' perception of husbands' approval of family planning was found to be accurate for 89.1 percent respondents (Mitra et al., 1997), and the corresponding figure for the BDHS 1993-94 was 85 percent (Kamal, 2000; Mitra et al., 1994). Becker and Costenbader (2001), in their comparative analyses of 23 DHS countries including Bangladesh, suggested that wives' responses have greater validity than their spouses. Furthermore, contraceptive use in Bangladesh is largely skewed to female methods and hence women are in a better position to provide accurate information regarding contraceptive and reproductive choices. Considering these issues, women's perception of their husbands' approval of family planning can be regarded as a good proxy for measuring their partners' contraceptive attitudes. For succinctness in presentation, from here onwards we will refer to wives' perception of their husbands' FP approval as men's or husbands' FP approval.

6.2 Results and discussion

Men's approval of family planning

Table 6.1 shows the responses regarding husbands' FP approval by different demographic and socio-economic characteristics of husbands. The 'don't know' category is also included in the table in order to identify the corresponding respondent characteristics. About 85 percent of the wives believe that their husbands approve of FP, another 11 percent believe their husbands disapprove and a little more than 4 percent did not know their husbands' attitude regarding FP. Approval of FP by husbands was high across different age categories, except the 55-59 age group. Approval of FP is found most in the age group 25-29 with about 88 percent of the husbands approving of FP. The adjacent age groups closely follow this age group. Education seems to have positive influence on approval of FP. More than 95 percent of the respondents who have education higher than secondary approve of FP compared with 80 percent of their uneducated counterparts. This also indicates that formal education is not a must for a certain level of FP approval. Approval of FP was higher in urban areas, and highest in Rajshahi division (89.1 percent) and lowest in Sylhet division (68.4 percent). FP approval is highest among husbands who reported having exactly two living children (88.9 percent).

Employment does not seem to have any systematic impact on husbands' FP approval. Husbands engaged in agricultural occupations approve of FP less than their counterparts. The data investigations revealed that FP approval is more likely among husbands (89 percent) whose wives also approve of FP and among 96 percent of those who discuss FP (not shown in the table). Husbands who have access to newspaper, TV and radio once a week have higher FP approval rate than their counterparts. Husbands who reported currently using contraceptives seem also likely to approve of FP.

Table 6.1 Wives' responses concerning husbands' FP approval by selected demographic and socio-economic characteristics of husbands, Bangladesh, 1999-2000 (percent)

Background characteristics	Total	Disapprove	Approve	Don't know
Husbands' age (*p*=.0001)				
15-19	16	0.0	81.3	18.7
20-24	110	3.6	87.3	9.1
25-29	295	9.2	87.8	3.0
30-34	366	9.6	87.2	3.2
35-39	457	13.1	84.2	2.7
40-44	363	9.6	85.4	5.0
45-49	304	9.9	85.9	4.2
50-54	195	13.3	84.1	2.6
55-59	141	19.1	70.9	10.0
Husbands' education (*p*=.0001)				
No education	740	13.6	79.6	6.8
Primary	666	14.1	82.0	3.9
Secondary	528	7.8	89.8	2.4
Higher	313	2.6	95.2	2.2
Husbands' area of residence (*p*=.008)				
Urban	689	8.6	88.4	3.0
Rural	1558	11.9	83.3	4.8
Husbands' division (*p*=.0001)				
Barisal	198	10.6	87.9	1.5
Chittagong	389	15.4	80.0	4.6
Dhaka	582	7.9	88.0	4.1
Khulna	403	7.9	87.6	4.5
Rajshahi	460	7.0	89.1	3.9
Sylhet	215	24.6	68.4	7.0
Husbands' religion* (*p*=.0001)				
Islam	1923	11.4	84.6	4.0
Hinduism	290	7.6	85.9	6.5
Husbands' no. of living children (*p*=.0001)				
0	201	6.5	81.6	11.9
1	415	7.0	88.0	5.0
2	523	9.0	88.9	2.1
3	410	11.0	87.0	2.0
4	290	11.7	84.8	3.5
5	202	14.8	80.2	5.0
6+	206	22.3	71.8	5.9

...Contd...

Table 6.1 (Continued)

Background characteristics	Total	Disapprove	Approve	Don't know
Husbands' occupation (*p*=.001)				
Unemployed	77	7.8	87.0	5.2
Professional/technical/managerial	691	7.8	89.6	2.6
Agriculture self-employed	581	14.3	79.5	6.2
Agriculture employed	159	13.2	81.1	5.7
Skilled manual	283	9.2	86.6	4.2
Unskilled manual	456	11.8	84.4	3.7
Currently using FP as reported by husbands (*p*=.0001)				
Yes	1463	5.9	91.7	2.4
No	784	20.1	72.1	7.8
Husbands' access to radio (*p*=.039)				
Yes	1168	9.8	86.6	3.5
No	1075	12.0	82.9	5.1
Husbands' access to TV (*p*=.0001)				
Yes	1252	7.5	89.1	3.4
No	994	15.1	79.6	5.3
Husbands' access to newspaper (*p*=.0001)				
Yes	662	6.9	91.1	2.0
No	1583	12.5	82.3	5.2
Total (%)		10.9	84.9	4.2

* 1.5 % of the respondents are from other religion and are not shown in the table.
Note 1: Since there are a few (2-4) missing values none of the counts sum to 2249 across the categories of each variable.
Note 2: Rows sum to 100 %.
Note 3: *p*-values are based on chi-square tests.

Table 6.2 shows the relationship between some couple characteristics and approval of family planning by husbands. Marital duration showed a negative relationship with husbands' approval of FP. Age difference between spouses also follows the similar pattern that the greater the age difference between spouses the less the husband approves of FP (*p*-value shows that the relationship is not strong). This may be an indication of possible lack of communication between spouses with high age differences. Most of the variables in Tables 6.1 and 6.2 showed statistically significant associations with husbands' approval of family planning except age difference between spouses (*p*-values are given within parenthesis against each variable).

Table 6.2 Wives' responses on husbands FP approval by selected characteristics of couples, Bangladesh, 1999-2000 (percent)

Background characteristics	Total	Disapprove	Approve	Don't know
Marital duration (years) (*p*=.0001)				
<5	391	5.4	87.7	6.9
5-10	473	9.9	87.5	2.5
11 and above	1383	12.7	83.2	4.1
Age difference between spouses* (Years) (*p*=.683)				
<3	144	10.4	86.1	3.5
3-7	730	9.6	85.9	4.5
8 and above	1373	11.6	84.2	4.2
Total (%)		10.9	84.9	4.2

* This variable is created by subtracting direct responses from husbands and wives regarding their ages.
Note 1: Since there are a few (2-4) missing values none of the counts sum to 2249 across the categories of each variable
Note 2: Rows sum to 100 %
Note 3: *p*-values are based on chi-square tests.

Analysis of the 'don't know' responses

For a comprehensive analysis of husbands' approval of FP, it is important to decide whether to classify wives' indecisive responses "don't know" (96 cases) responses in the approval or disapproval category. This is important especially for the regression analysis as "don't know" as a category may produce inefficient result due to low frequencies. Another option is to discard them from the analysis. The demographic and socio-economic characteristics of wives who reported "don't know" were investigated in order to understand possible reasons behind such responses (Table 6.3). The analysis indicated statistically significant differences among three categories (disapprove, approve and don't know) in terms of their association with the variables presented in Table 6.3. Only the "don't know" column will be discussed in this section.

Table 6.3 Wives' responses concerning husbands' FP approval by selected demographic and socio-economic characteristics of wives, Bangladesh, 1999-2000 (percent)

Background characteristics	Disapproves	Approves	Don't know
Age† (*p*=.0001)			
10-14	0.4	1.5	7.3
15-19	10.7	14.1	16.7
20-24	15.6	18.4	13.5
25-29	16.4	21.1	13.5
30-34	26.6	16.6	14.6
35-39	10.7	12.6	9.4
40-44	8.6	9.9	13.5
45-49	11.1	5.9	11.5
Area of residence† (*p*=.008)			
Urban	24.2	31.9	21.9
Rural	75.8	68.1	78.1
Education† (*p*=.0001)			
No education	62.7	39.0	57.3
Primary	27.9	28.7	27.1
Secondary	9.0	25.7	12.5
Higher	0.4	6.6	3.1
Religion† (*p*=.066)			
Islam	91.4	85.8	81.3
Others	8.6	14.2	18.7
No. of living children† (*p*=.0001)			
0	7.4	8.9	26.0
1	13.1	20.2	20.8
2	19.7	25.0	10.4
3	19.3	19.1	11.5
4+	40.5	26.8	31.3
Respondent approves FP† (*p*=.0001)			
Disapproves	34.0	0.8	12.5
Approves	63.9	99.2	83.3
Don't know	2.0	0.0	4.2
Discuss FP with partner† (*p*=.0001)			
Never	82.8	44.1	93.8
Once or twice	17.2	55.9	6.2
Ever use of FP† (*p*=.0001)			
Never	46.3	13.0	55.2
Used traditional and other method	11.9	6.2	7.3
Used modern method	41.8	80.8	37.5

...Contd...

Table 6.3 (Continued)

Background characteristics	Disapproves	Approves	Don't know
Year since first marriage[†] (*p*=.0001)			
0	0.4	3.3	12.5
1	1.6	3.3	8.3
2	2.5	3.1	2.1
3	2.0	4.8	1.0
4	3.7	4.1	4.2
5+	89.8	81.4	71.9
Age difference between spouses (Years)[††] (*p*=.683)			
<3	6.1	6.5	5.2
3-7	28.7	32.9	34.4
8 and above	65.2	60.6	60.4

Note: For each variable the column sums to 100%; *p*-values are based on chi-square tests.
[†] Wives' direct responses
[††] Based on direct responses from husbands and wives

Respondents who reported "don't know" were distributed throughout all age categories. Most such respondents (78.1 percent) were from rural areas, uneducated (57.3 percent) and belong to Islam religion (81.3 percent). About 47 percent of wives who reported "don't know" have either one or no children. Most of the respondents (83.3 percent) approve of FP. Never discussing FP with husbands was a characteristic of most of the respondents (93.8 percent). About 55 percent of the wives never used any FP methods. More than 20 percent of the wives had been married for less than two years. For 60.4 percent of the wives who reported "don't know", the difference in age with their husbands was 8 years or more.

The last three Demographic and Health Surveys (DHS) conducted in Bangladesh demonstrate almost universal knowledge of FP and a high rate of approval of FP among currently married women. Hence, an attempt to or desire to use FP at least once in their life is likely. Consequently, in a male dominant society it is not very difficult for a wife to judge her husband's attitude toward FP indirectly even if discussion of FP matters between spouses is absent possibly due to the husband's lack of interest. So it can be concluded that most of the 96 respondents who reported the response "don't know" are probably underreporting their husbands' negative attitudes, which may be attributed to their religious beliefs, individual values, shyness or due to high age differences. Another reason could be that when the respondent herself has never used a method, she may not be able to comprehend her husbands' attitude towards FP. Taking these reasons into account, it is decided to consider these indecisive "don't know" responses in the "disapproval" category in the regression analysis. However, the results will be validated by comparing such regression results with the results obtained by deleting the "don't know" cases.

Couple's approval of family planning

FP approval by both the spouses ensures effective and continuous practice of methods when necessary. Furthermore, the Islamic law suggests that consultation with the husband is necessary for any reproductive related decisions (Cook and Maine, 1987). The situation in Bangladesh is different from other countries regarding contraceptive decision-making. The chances of women using contraception without their husbands' being involved are negligible. The BDHS 1999-2000 showed that about 28 percent of the currently married women using contraception report that their husbands disapprove of FP. This corroborates the findings reported by Kamal (2000) that the likelihood of women using contraceptives is high when they think their husbands approve of FP. Table 6.4 presents the bivariate relationships of couple approval by some selected variables. The typography of outcomes: "both approve", "one of the partners approves" or "neither approves" indicates the possible degree of effective family planning use by the couple. Approval of family planning by both the spouses indicates that women will get full support from their husbands for use, especially when confronted with side effects. Partial approval may not ensure effective family planning practice.

About 84 percent of the couples reported joint approval of FP (Table 6.4). This percentage for either of the couple is 11.3 percent (0.7 percent in the case of husbands and 10.6 percent in the case of wives) and both disapproving FP constitutes 4.6 percent. Approval of FP by both the spouses is positively associated with the education of the couple. If both the spouses are educated joint approval is high (89.1 percent), but their percentage decreases with the absence of any education for the husband and wife (Fig 6.2). Joint approval of FP is more likely among couples with marital duration up to ten years. For respondents with age differences between three and seven years, joint approval tends to be high. Joint spousal approval of FP is the highest for those with one or two children (88 percent).

Table 6.4 Couple's approval of FP by demographic and socio-economic characteristics, Bangladesh, 1999-2000 (percent) (N=2249)

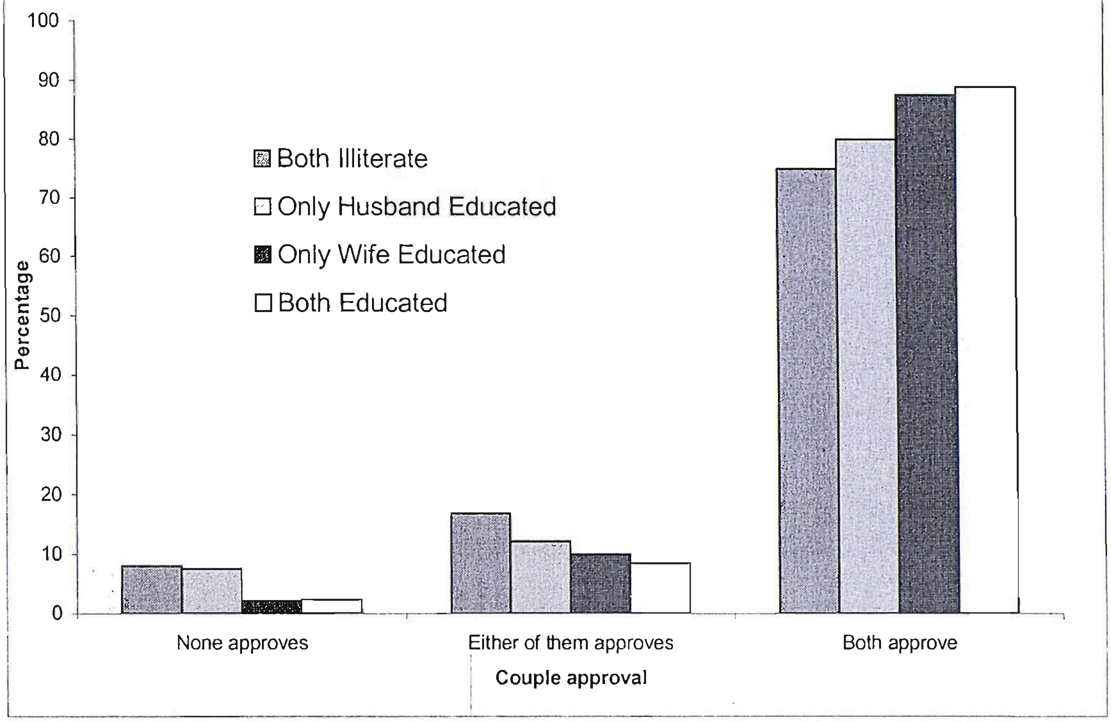
Background characteristics	Total	Neither approves	One of the partners approves*	Both approve
Couple's education** (p=.0001)				
Both uneducated	510	8.0	16.9	75.1
Only husband educated	441	7.5	12.2	80.3
Only wife educated	230	2.2	10.0	87.8
Both educated	1068	2.3	8.5	89.1
Marital duration (years)# (p=.024)				
<5	391	2.8	10.0	87.2
5-10	473	3.6	9.3	87.1
11 and above	1385	5.5	12.3	82.2
Age difference between spouses** (years) (p=.510)				
<3	144	2.8	13.2	84.0
3-7	731	4.0	10.9	85.1
8 and above	1374	5.2	11.3	83.6
No. of living children# (p=.0001)				
0	201	4.0	14.9	81.1
1-2	939	3.4	8.6	88.0
3-4	700	3.7	10.7	85.6
5 and above	409	9.3	16.6	74.1
Total (%)		4.6	11.3	84.1

* Husband approves but wife doesn't (0.7 %) and wife approves but husband doesn't (10.6%)
** Based on the direct responses from husbands and wives.
# These variables are the direct responses from husbands
Note: Rows sum to 100%; *p*-values are based on chi-square tests.

Regression analyses

A two-level random intercept logistic regression model was fitted to evaluate the possible community effects (random effects) along with fixed effects of different independent variables on the husbands' approval of FP. The dependent variable is coded as 1 for husbands who approve FP and 0 if not. Since the fitted model showed insignificant community level impact (estimate of random coefficient was zero with zero variance) with the same values of the estimates of the single level model we retained the result of single level logistic regression (Model 1 in Table 6.5). However, we cannot claim that this non-significance of community level effects refers to the homogeneity of the individuals regarding the approval of family planning between communities. Such a result may arise because of the small numbers of respondents within each community (primary sampling unit).

Fig 6.2 Distribution of couple education by couple approval of FP



Husbands aged 25-39 were found to have lower odds of approving of FP than respondents aged 40 and above, when the other variables listed in Table 5.10 were controlled for. Respondents from Dhaka, Khulna and Rajshahi divisions have higher odds of approving FP than those from Sylhet division. This indicates that husbands in these divisions have more positive contraceptive attitudes than those in Sylhet.

Husbands having higher than secondary education have higher odds of approving FP than those having less education. Current users of contraceptives have higher odds of approving of FP. Note that husbands' approval is not a precursor to use. Husbands having 1 or 2 children have higher odds of approving of FP than those having 5 or more living children. Husbands who discuss FP matters with their wives have higher odds of approving of FP. Furthermore, this is reflected in the result that showed significant positive associations between wives' FP approval and that of husbands (Model 1 in Table 6.5).

Table 6.5 Logistic regression estimates of the effect of different socio-economic and demographic characteristics on approval of FP by husbands

Independent variables	Model 1		Model 2	
	β	SE	β	SE
Age of husband *(reference: 40 and above)*				
Less than 25	-.329	.370	.685	.670
25-39	-.309*	.180	-.666***	.210
Division *(reference: Sylhet)*				
Barisal	.502	.315	.379	.345
Chittagong	.167	.247	.077	.277
Dhaka	.668***	.241	.837***	.281
Khulna	.530**	.264	.689**	.310
Rajshahi	.745***	.259	.848***	.304
Area of residence *(reference: Rural)*				
Urban	-.037	.170	-.232	.199
Education *(reference: Higher)*				
No education	-1.309***	.347	-1.565***	.461
Primary	-1.240***	.346	-1.723***	.456
Secondary	-.910**	.356	-1.331***	.468
Access to TV *(reference: No)*				
Yes	.260*	.156	.381**	.185
Wife approves FP† *(reference: No)*				
Yes	3.447***	.302	3.846***	.323
Discuss FP with partner† *(reference: No)*				
Yes	1.576***	.178	1.293***	.199
Currently using FP *(reference: No$^{\#}$)*				
Yes	1.005***	.151	1.092***	.178
Number of living children *(reference: 5 and more)*				
0	.475	.307	1.298***	.416
1-2	.470**	.229	.594**	.267
3-4	.300	.206	.261	.238
Intercept	-2.121***	.463	-1.700***	.542

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01.
† Based on women's responses
# Lactational amenorrhea is considered as non-use of FP. It is practiced by 0.1% of the respondents
SE = Standard Error

Differences among the non-reference divisions have also been examined by changing reference categories. The analysis revealed that Dhaka, Khulna and Rajshahi were not significantly different but Chittagong was significantly different from Dhaka and Rajshahi (results not shown in the table). There is a wide geographical variation among divisions and the analysis was controlled for division for sampling reasons, as there was over sampling in Barisal and Sylhet.

Collapsing some possible divisions was not considered, as some were not geographically adjacent to each other and they have varying characteristics, e.g., geographical, cultural, economic etc. Also, we did not collapse the categories of a few variables since we were interested in the gradient of the estimates. To compare the possible change on the results after combining "don't know" responses with "disapproval" the same model was fitted removing the "don't know" responses but found very similar results except an additional significant coefficient for the husbands with no children compared to those having 5 or more children indicating that the former husbands were more likely to approve of family planning (Model 2 in Table 6.5). Such change may be due to higher change in no children group for "disapprove" category after the removal of "don't know" cases from the analysis (see Table 6.1).

A multinomial logistic regression was fitted to couple approval, coded into three categories: 0 if neither partner approves of FP, 1 if either of the couple approves, and 2 if both approve of FP (the reference category). In the final model we considered the couple's education instead of separate educational variables, for multicollinearity reasons. Community level impact was also investigated by means of a two level random intercept model. Similar to the results obtained in the binary logistic regression model, the two-level random effect model was insignificant in the multinomial regression. Therefore, we decided to retain the fixed effects model (Table 6.6). The interpretation of the non-significance of the community level effect remains the same as it was for the binary logistic regression. The result has been discussed in terms of the estimated probabilities corresponding to the estimated coefficients (Table 6.7). The estimated probabilities are calculated based on the reference couple's characteristics. A reference couple is one where husband is aged 25-39 years, from Dhaka division, resides in rural areas, only husband is educated, husband does not have access to TV, does not discuss FP with partner, not currently using FP and has 1-2 living children. The estimated probabilities reveal that a reference couple has an estimated 12.7 percent probability of none approving of FP, 24.6 percent probability of one partner approving of FP and 62.7 percent probability of both the partners approving of FP.

The probability of both the partners approving of FP increases if the husband has age 40 and above and decreases if the husband has age less than 25 years, compared to the reference couple. The probability of one of the partners approving of FP decreases if the husband of the couple is aged 40 and above and increases if the husband has age less than 25 years. The probability of both the partners approving of FP in the couple decreases if they are from divisions other than Dhaka. If the couple are from Sylhet division the probability of both the partners approving of FP is the lowest (37.3 percent). Urban couples have higher probability of both the partners approving of FP than rural (reference) couples. If none of the partners within a couple are educated the probability of both the partners approving of FP is less than that of the reference couple, whereas, the probability is more if only wife of the couple (77.2 percent) or both the partners of the couple (70.3 percent) are educated. The reason behind the higher probability for "only wife educated" than "both the partners are educated" may be due to the choice of the characteristics of the reference couple or may be due to the woman only nature of the FP programme of Bangladesh.

If the husband of the couple has access to TV the probability of both the partners approving of FP increases by 8.5 percent points. The probability of both the partners approving of FP increases by about 28 percent points if the couple discuss FP among themselves. Current use of FP increases the probability of both the partners approving of FP by about 21.5 percent points. The probability of both the partners approving of FP decreases as the number of children increases.

6.3 Conclusion

This chapter contributed to a better understanding of the response patterns of husbands and wives regarding FP approval. This study revealed some important determinants of men's FP approval, which may be of interest to policy makers as well as academic researchers. Relying on women's responses to understand men's FP approval may not always be appropriate although such reports do indicate wives' perceptions regarding husbands FP attitudes. However, it is valid in the Bangladesh context as evidenced from the previous literature (Becker and Costenbader, 2001; Kamal, 2000).

Table 6.6 Multinomial logistic regression estimates of the effect of different socio-economic and demographic characteristics on couple approval of FP

Independent variables	None approves		One partner approves	
	β	SE	*β*	SE
Age of husband *(reference: 40 and above)*				
Less than 25	.039	.691	.700*	.364
25-39	.087	.265	.403**	.178
Division *(reference: Sylhet)*				
Barisal	-.601	.481	-.444	.316
Chittagong	-.478	.333	-.344	.245
Dhaka	-1.430***	.363	-.761***	.237
Khulna	-.491	.352	-.697***	.267
Rajshahi	-1.189***	.380	-.797***	.256
Area of residence *(reference: Rural)*				
Urban	-.305	.281	-.090	.171
Couple education† *(reference: Both educated)*				
Both uneducated	.921***	.298	.488***	.187
Only husband educated	.841***	.304	.154	.203
Only wife educated	-.598	.520	-.304	.267
Husband's access to TV *(reference: No)*				
Yes	-.505**	.242	-.327**	.155
Discuss FP with partner†† *(reference: No)*				
Yes	-2.714***	.430	-1.466***	.173
Currently using FP *(reference: No$^{\#}$)*				
Yes	-1.261***	.236	-1.097***	.152
Number of living children *(reference: 5 and more)*				
0	-.884*	.490	-.673**	.312
1-2	-.578*	.316	-.695***	.229
3-4	-.743**	.296	-.431***	.205
Intercept	-.518***	.384	-.038***	.271

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01.

† based on direct responses from husbands and wives

†† wives' direct responses

# Lactational amenorrhea is considered as non-use of FP. It is practiced by 0.1% of the respondents

SE = standard Error

Table 6.7 Couple approval of FP: adjusted predicted probabilities from multinomial logistic regression model

Characteristics	None approves	One partner approves	Both approves
Husband's age			
Less than 25	11.2	30.7	58.1
25-39^c	**12.7**	**24.6**	**62.7**
40 and above	12.8	18.1	69.1
Division			
Barisal	23.1	26.9	50.0
Chittagong	24.7	28.1	47.2
Dhaka^c	**12.7**	**24.6**	**62.7**
Khulna	26.7	21.6	51.7
Rajshahi	15.7	23.1	61.2
Sylhet	31.5	31.2	37.3
Area of residence			
Urban	9.9	23.8	66.3
Rural^c	**12.7**	**24.6**	**62.7**
Couple education			
Both uneducated	12.4	31.0	56.6
Only husband educated^c	**12.7**	**24.6**	**62.7**
Only wife educated	3.7	19.1	77.2
Both educated	6.1	23.6	70.3
Husband's access to TV			
Yes	8.7	20.1	71.2
No^c	**12.7**	**24.6**	**62.7**
Discuss FP with partner			
Yes	1.2	8.2	90.6
No^c	**12.7**	**24.6**	**62.7**
Currently using FP			
Yes	4.8	11.0	84.2
No^c	**12.7**	**24.6**	**62.7**
Number of living children			
0	9.6	25.8	64.6
1-2^c	**12.7**	**24.6**	**62.7**
3-4	10.2	30.3	59.5
5+	16.8	36.6	46.6

c- characteristics of reference couple

In the foregoing analysis, wives' "don't know" responses were classified as husbands' disapproval of FP. This classification was justified through a separate analysis that examined the characteristics of respondents who responded "don't know" about husbands' FP approval in the survey. Most of these respondents were uneducated, never discussed family planning with their partners, never used any methods and had spousal age difference of more than eight years. Results from the regression analyses revealed that the levels of education had a positive impact on individual and couple's FP approval, which is supportive of previous studies. This study investigated the effect of inter-spousal FP discussion on approval of FP and found positive influence, which was a first attempt of this kind. Sylhet division was still lagging behind in terms of husbands approving of FP. Mass media, especially TV, seemed to motivate husbands favourably toward approving of family planning. Educated couples were far more likely to approve of FP than their uneducated counterparts, which clearly highlight the role of education in raising inter-spousal attitudes towards family planning.

For a better understanding of couples' contraceptive attitudes, individual responses are needed both from the woman and her husband. Although husbands' responses were directly recorded in the BDHS 1993-94 and 1996-97, the reasons why they were not collected in the 1999-2000 survey are unknown. The DHS should put efforts to continue collecting information on contraceptive attitudes and behaviour, especially in the context of changing reproductive values and goals. Also, there should be a clear description of the indecisive responses "don't know" in the DHS questionnaire, that is, whether any attempt was made to verify if these responses were truly don't know or due to shyness of the respondents. Since the ICPD and other international conferences, men's participation in reproductive health has been receiving increasing interest among policy makers. Whilst the ongoing reproductive health programmes recognise the importance of increasing male participation in reproductive health, efforts are needed to educate men with appropriate contraceptive knowledge and attitudes for their overall active participation in family planning.

Chapter 7

Inter-spousal communication regarding family planning*

7.1 Introduction

Inter-spousal communication is an important characteristic, which leads to better understanding of different issues within the family and finally inspires a couple toward a joint decision. Couples can reach better decisions by means of communication among themselves. Whether to practice family planning, when to start contraception, and what method to use are possible outcomes of inter-spousal communication. Discussion of the side effects of the current family planning method sometimes leads to switching to an appropriate method. The frequency of inter-spousal communication is sometimes regarded as an indicator of safe family planning practice.

Inter-spousal communication enables husbands and wives to know each other's attitudes toward family planning and contraceptive use. It allows them to voice their concerns about reproductive health issues, such as worries about unintended pregnancies, side effects of a method or STDs (Drennan, 1998). Successful planning and decision-making about family size and use of contraceptives require effective communication of both marital partners (Feyisetan, 2000; Gage, 1995; Oyediran et al., 2002; Oyediran and Isiugo-Abanihe, 2002). Communication also can encourage joint decision-making and more acceptable gender roles. Women's unmet need for family planning could be reduced by better and frequent communication between husbands and wives (Drennan, 1998). However, one study by DeRose et al. (2004) using DHS data from 21 sub-Saharan African countries contradicted the idea that discussion between partners helps increase knowledge of a partner's contraceptive attitudes. They concluded that the anticipated reductions in unmet need for contraception may not be achieved through improvements in inter-spousal communication.

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* Main findings of this chapter have been reported in Islam, M.A., Padmadas, S.S. and Smith, P.W.F. (2005) Men and Family Planning in Bangladesh: A Multilevel Approach Using DHS Data. Presented at the IUSSP Conference, Tours, France, 18-23 July, 2005. The proceedings of the conference are published in a CD-ROM.

Research reveals that men and women who discuss family planning are more likely to use contraception effectively and have less number of children (DeSilva, 1994; Lasee and Becker, 1997). On the other hand, when men and women do not know their partners' fertility preference, attitudes towards family planning or contraceptive preference, the consequences can include unintended pregnancies, transmission of STDs, and unsafe abortions (Biddlecom et al., 1997; McGinn et al., 1989; Salway, 1994).

In some cultural settings where direct spousal communication is not the norm partners may communicate their reproductive desires or concerns through nonverbal or indirect means, if they need to do so at all (Fort, 1989). In Uganda, for example, most communication between men and women regarding reproductive issues were expressed in the form of indirect suggestions, hints, and talking to friends or relatives in the hope that they would convey the information to the sex partner (Drenann, 1998).

Many obstacles prevent men and women from talking about sexuality, family planning and reproductive issues, while research suggests that a complex web of social and cultural factors hamper such discussions. In many societies discussion about sex is a taboo subject for men and women. Also, men and women are often afraid of rejection by a sexual partner, especially if the discussion about sexuality takes place at the beginning of a relationship. Consequently, they may not feel comfortable discussing issues, such as sexual history or use of contraception (Drennan, 1998). At the same time men probably do not want to discuss a subject about which they are less informed than their wives (Piotrow et al., 1992).

Women's inferior status and lack of power limit couple communication, especially initiation of discussion from their sides (Dixon-Muller, 1993; Salway, 1994; Worth, 1989). Furthermore, a husband might suspect his wife promiscuous or unfaithful if she tries to discuss contraception with him (Fort, 1989). Even when men and women discuss family planning and reproductive health issues, it is usually not on equal terms (Drennan, 1998).

Inter-spousal communication, for example, has been found to be predictive of contraceptive use (Chaudhury, 1978) and of better knowledge of pill use (Davies, 1985) in Bangladesh. However, it is unclear whether discussion of family planning influences its use or whether using family planning initiates discussion of the topic; probably both statements are true (Robey and Drennan, 1998). Traditionally, communicating about fertility and family planning related matters in Bangladesh is not the norm (Abdullah and Zeidenstein as quoted in Kincaid et al., 1993), and couples desiring to do so may be impeded by lack of privacy. If discussion does occur, it is not at the very beginning of a marriage, but after a significant period of time has passed, somewhere between five to ten years (Aziz and Maloney, 1985). Several studies conducted in other countries suggest that spousal communication about family planning usually begins only after the birth of one or two children (DeSilva, 1994; Fort, 1989). Because of the lack or absence of couple-communication about family planning, many wives think that their husbands oppose family planning when in fact the husbands approve (Biddlecom et al., 1997; McGinn et al., 1989; Oni and McCarthy, 1991; Salway, 1994).

Couples in urban areas are more likely to talk about fertility desires than rural couples (Drennan, 1998). Studies suggest that the closer a man and woman are in their levels of education, and more education they have, the more likely they are to discuss and use family planning (Coombs and Fernandez, 1978; DeSilva, 1994). If a woman has some economic power she is more likely to discuss family planning with her husband (Gage, 1995). One study on Yoruba men found that women's age is significantly associated with participation in decision-making (Adewuyi and Ogunjuyigbe, 2003).

Inter-spousal communication can be a crucial step toward increasing men's participation in family planning and reproductive health (Becker, 1996; Biddlecom et al., 1997; Lasee and Becker, 1997; Mahmood and Ringheim, 1997; Omondi-Odhiambo, 1997). Since both men and women play key roles in reproductive health, couple-communication is necessary for making responsible, healthy decisions (Drennan, 1998). However, male involvement does not necessarily refer to use of male methods. It also includes supporting the use of female methods as well, which implies that husbands should communicate family planning matters with their wives (Donahoe, 1996).

Most of the researches conducted on inter-spousal communication regarding family planning and reproductive health issues have used survey responses. Using surveys to assess spousal communication is difficult (Biddlecom et al., 1997; Greene and Biddlecom, 1997). Communication is an on-going process, but surveys can help to capture information from only a single point in time. They do not record the progression of a couple's discussion or decision-making (Lasee and Becker, 1997; Oni and McCarthy, 1991; Salway, 1994). However, for some of the countries, such as Bangladesh, DHS surveys are the only sources of information on inter-spousal communication. In this chapter, inter-spousal communication regarding family planning in Bangladesh will be assessed using the Bangladesh Demographic and Health survey (BDHS) 1999-2000.

In order to measure inter-spousal communication the BDHS 1999-2000 asked women if they had discussed family planning matters with their husbands during the previous year. The predefined responses were "never", "once or twice" and "more often"[#].

7.2 Results and discussion

Table 7.1 reveals the distribution of the couple's family planning communication pattern by different socio-economic and demographic characteristics of husbands, wives and couples. Statistical significance of the associations of these variables with couple's family planning communication is also tested by means of chi-square tests, *p*-values for which are also presented in the Table 7.1 within parentheses after each variable. Slightly fewer than half of the wives in the couple data set reported that they discussed family planning with their partners. About one fifth of these couples discussed family planning more often (that is, more than twice).

[#] It is to be noted here that in the data set the category "more often" was wrongly coded as "don't know". Comparing the result from the data, DHS questionnaire and published DHS report the error has been identified and corrected accordingly.

Table 7.1 Inter-spousal communication by demographic and socio-economic characteristics of husbands, wives and couples, Bangladesh, 1999-2000

Background characteristics	Total	Discussion of FP with partner		
		Never	Once or twice	More often
Husband's age* (p=.0001)				
15-19	16	43.8	56.3	0.0
20-24	110	42.7	48.2	9.1
25-29	295	43.4	46.4	10.2
30-34	366	44.8	43.7	11.5
35-39	458	42.1	49.8	8.1
40-44	363	50.4	41.3	8.3
45-49	304	57.2	35.5	7.2
50-54	195	66.7	29.7	3.6
55-59	141	75.9	22.0	2.1
Wife's age** (p=.0001)				
10-14	36	58.3	36.1	5.6
15-19	311	46.3	44.7	9.0
20-24	401	42.4	46.6	11.0
25-29	455	41.5	48.4	10.1
30-34	397	49.6	43.1	7.3
35-39	276	52.9	39.1	8.0
40-44	222	67.1	30.6	2.3
45-49	150	78.0	18.7	3.3
Division* (p=.0001)				
Barisal	199	42.7	46.2	11.1
Chittagong	389	54.8	39.6	5.7
Dhaka	582	48.6	41.4	10.0
Khulna	403	49.1	42.9	7.9
Rajshahi	460	47.0	45.0	8.0
Sylhet	215	64.2	31.2	4.6
Area of residence* (p=.207)				
Urban	689	50.8	39.8	9.4
Rural	1559	50.2	42.3	7.4
Husband's education* (p=.0001)				
No education	740	56.6	38.8	4.6
Primary	666	51.8	41.4	6.8
Secondary	529	45.6	44.4	10.0
Higher	313	40.9	43.5	15.7
Wife's education** (p=.0001)				
No education	951	58.4	37.6	4.0
Primary	641	48.8	43.4	7.8
Secondary	526	41.8	45.6	12.5
Higher	130	34.6	44.6	20.8
Couple education+ (p=.0001)				
Both uneducated	510	58.8	37.3	3.9
Only husband educated	441	57.8	38.1	4.1
Only wife educated	230	51.7	42.2	6.1
Both educated	1067	43.0	44.9	12.1

...Contd...

Table 7.1 (Continued)

Background characteristics	Total	Discussion of FP with partner		
		Never	Once or twice	More often
Religion[*#] (*p*=.791)				
Islam	1924	50.2	41.8	8.0
Others	324	51.9	39.8	8.3
No. of living children[*] (*p*=.0001)				
0	201	59.7	31.3	9.0
1	415	40.5	47.5	12.0
2	523	45.7	44.9	9.4
3	410	50.2	42.0	7.8
4	290	54.1	40.3	5.5
5	203	52.7	43.3	3.9
6+	206	66.0	30.1	3.9
Husband approves FP[**] (*p*=.0001)				
Disapproves	244	82.8	15.6	1.6
Approves	1907	44.1	46.6	9.3
Don't know	96	93.8	6.3	0.0
Wife approves FP[**] (*p*=.0001)				
Disapproves	120	90.0	10.0	0.0
Approves	2128	48.2	43.3	8.5
Joint approval of FP[±] (*p*=.0001)				
None approves	104	94.2	5.8	0.0
Either of the couple approves	253	80.6	17.8	1.6
Both approves	1891	43.9	46.7	9.4
Husband's occupation[*] (*p*=.356)				
Unemployed	77	54.5	39.0	6.5
Professional/technical/managerial	691	48.0	41.4	10.6
Agriculture self-employed	581	52.2	41.0	6.9
Agriculture employed	159	50.3	42.8	6.9
Skilled manual	283	49.1	42.4	8.5
Unskilled manual	457	51.9	42.0	6.1
Currently using[*] FP (*p*=.0001)				
Yes	1460	42.6	47.5	9.9
No	788	64.8	30.6	4.6
Marital duration (years)[+] (*p*=.0001)				
<5	391	43.0	45.3	11.8
5-10	473	43.8	45.2	11.0
11 and above	1384	54.8	39.2	6.0
Age difference between spouses (Years)[+] (*p*=.590)				
<3	144	50.0	43.1	6.9
3-7	731	50.1	43.0	7.0
8 and above	1373	50.7	40.6	8.7

...Contd...

Table 7.1 (Continued)

Background characteristics	Total	Discussion of FP with partner		
		Never	Once or twice	More often
Husbands' access to newspaper* (p=.0001)				
Yes	662	43.2	43.7	13.1
No	1586	53.4	40.7	5.9
Husbands' access to TV* (p=.0001)				
Yes	1252	46.7	42.8	10.5
No	996	55.0	40.0	5.0
Husbands' access to radio* (p=.112)				
Yes	1168	48.3	43.4	8.3
No	1080	52.7	39.5	7.8
Total (%)		50.4	41.5	8.1

* Based on husbands' direct responses.
** Based on wives' direct responses.
+ Calculated from direct responses from husbands and wives.
± Calculated from direct responses from wives.
# For 34 cases religion of husbands and wives are not the same.
Note: Rows sum to 100%. Since there one or two missing values none of the counts sums to 2249 across the categories of each variable. p values are based on chi-square tests.

Discussion of family planning matters with partner seems to decrease with the increase of husband's age. However, the decrease is not linear in nature. About 56 percent of the respondents whose husbands belong to the age group 15-19 reported discussing family planning with their husbands, while only 24.1 percent of the respondents whose husbands aged between 55-59 years reported having discussions. More or less the same relation is evident between wives' ages and discussion of family planning, except in the early age groups. Discussion of family planning matter is the highest among the couples from Barisal division (57.3 percent) and the lowest in Sylhet division (35.8 percent). No significant difference in inter-spousal communication is evident by area of (rural-urban) residence. The better the husbands are educated the greater the level of discussion with their partners. A similar relation holds for wives' education. When both the partners in the couple are educated, discussion of family planning is the highest (57 percent) (see Fig 7.1), which increases further (64 percent) when both the partners have higher education (not shown in table).

Fig 7.1 Couple education by couple communication

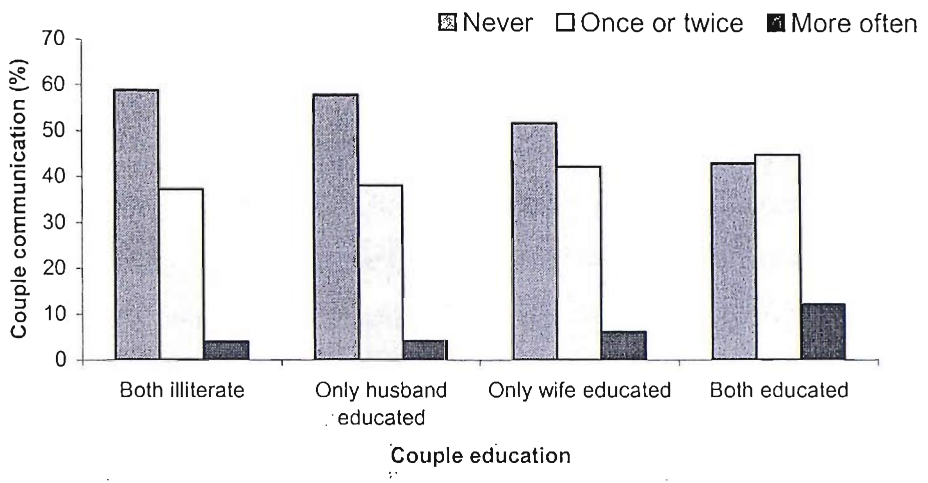
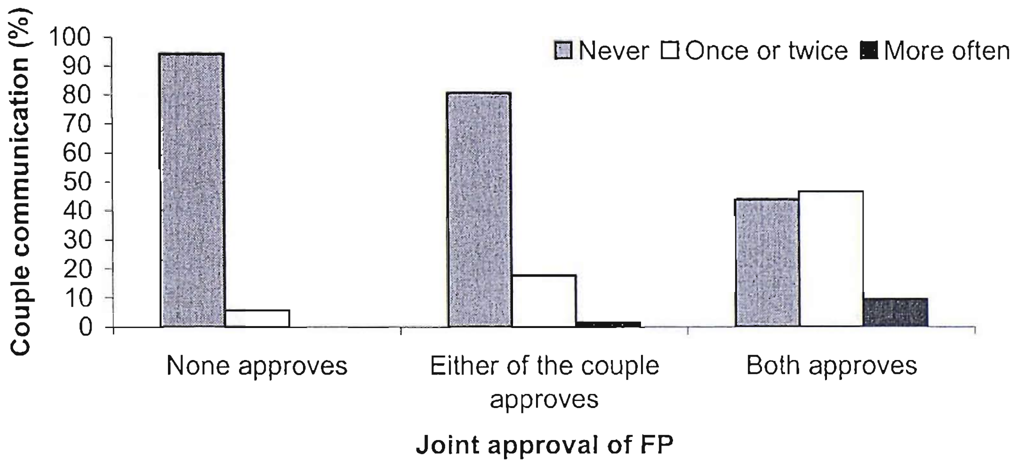


Fig 7.2 Joint approval of FP by couple communication



Couples following the Islamic religion seem to discuss family planning more (49.8 percent) than those following other religions (48.1 percent). However, the difference is not statistically significant. Couples having six or more children are found to discuss family planning issues least among the partners (34 percent). The level of discussion is also low among couples with no children (40.3 percent). On the other hand couples with one or two children are found to discuss family planning more. Discussion of family planning is high when the husband in a couple approves of family planning (55.9 percent). Similar results are evident when the wife in a couple approves of family planning. When both the partners in a couple approve of family planning (joint approval of family planning), discussion is the highest (56.1 percent) (see Fig 7.2). Discussion of family planning is the highest among the couples when husbands are engaged in professional/ technical/ managerial type of occupations. Couples currently using family planning reported more discussion of family planning (57.4 percent) than their non-user counterparts. Marital duration seems to have a negative relation with discussion of family planning within the couple. A similar result holds for the age difference between husbands and wives. Husband's access to newspaper and husband's access to TV have a significant association with couple's family planning communication, while husband's access to radio does not have any association. For all three media discussion is high if the husbands have access to them.

Regression analyses

Two-level random intercept binary logistic regression models were fitted to identify the factors that have significant impact on the inter-spousal communication regarding family planning. The coding of the dependent variable was: 0= never discussed family planning during the past year and 1= discussed family planning during the past year (Model 1, Table 7.2). All the variables in Table 7.1 were considered in a bivariate analysis to select the variables to be considered for regression analysis. To understand the impact of joint approval of family planning by the couple a separate variable named 'joint approval of FP' was constructed and used instead of the variables 'husband approves of family planning' and 'wife approves of family planning' in model 2 (Table 7.2). Finally, in model 3 marital duration was used and variables for husband's and wife's ages were dropped from the model due to multicollinearity (Table 7.2). For all three models, couple education constructed from husband's and wife's education was used because of the strong association between the education levels.

Inter-spousal communication is significantly high among comparatively young husbands. This is also evident for young wives. Husbands in a couple who have access to newspaper once a week have higher odds of family planning discussion within the couple. The odds of couple communication are higher when husband approves of family planning. A similar result is evident for wives' approval of family planning. For current users of contraceptives, the likelihood of family planning discussion is higher than their counterparts. Significant interaction effects between couple education and area of residence have been found which is explained in terms of adjusted odds ratios (Model 1, Table 7.2; Fig 7.3). Fig 7.3 suggests that the odds of couple communication regarding FP are the same for rural couple when both the partners are uneducated and only husband is educated. The odds slightly increases if only wife of the couple is educated, which sharply increases if both the partners are educated. For urban couples no clear impact of education is evident. Surprisingly, urban couple with both the partners having no education appears to have the highest odds of couple communication, which requires further investigation. Significant interaction effects were also found between number of living children and area of residence (Model 1, Table 7.2; Fig 7.4). The result suggest that as the number of children increases the odds of couple communication regarding FP for rural couple increases, which demonstrates a sharp increase if the couple have five and more number of living children. Similar pattern is evident for urban couples up to three to four living children, which decreases for couples with 5 and more children.

In case of joint approval of family planning, discussion is the highest when both the members of a couple approve of family planning (Model 2 and Model 3, Table 7.2). Family planning discussion is significantly high among younger couples, i.e., those who have lower marital duration (Model 3, Table 7.2).

Table 7.2 Two-level random intercept binary logistic regression estimates of the effect of different socio-economic and demographic characteristics on inter-spousal communication, Bangladesh, 1999-2000

Independent variables	Model 1		Model 2		Model 3	
	β	SE	β	SE	β	SE
Intercept	-3.057***	0.394	-3.247***	0.486	-2.996***	0.481
Age of husband (*r: 40 and above)*						
Less than 25	0.708***	0.270	0.704***	0.270	NA	NA
25-39	0.509***	0.133	0.508***	0.132	NA	NA
Age of wife *(r: 35 and above)*						
Less than 20	0.711***	0.217	0.705***	0.217	NA	NA
20-34	0.746***	0.138	0.738***	0.138	NA	NA
Division *(r: Sylhet)*						
Barisal	0.379	0.246	0.377	0.246	0.388	0.242
Chittagong	0.072	0.216	0.066	0.216	0.082	0.213
Dhaka	0.252	0.202	0.248	0.202	0.247	0.200
Khulna	0.107	0.215	0.104	0.214	0.147	0.212
Rajshahi	0.251	0.210	0.247	0.210	0.255	0.207
Area of residence *(r: Rural)*						
Urban	-1.104***	0.318	-1.103***	0.318	-1.097***	0.312
Couple education *(r: Both educated)*						
Both uneducated	-0.494***	0.155	-0.499***	0.155	-0.419***	0.153
Only husband educated	-0.501***	0.157	-0.501***	0.157	-0.456***	0.155
Only wife educated	-0.448**	0.198	-0.454**	0.198	-0.385**	0.196
Husband's access to newspaper *(r: No)*						
Yes	0.334***	0.127	0.339***	0.127	0.280**	0.125
Husband approves FP *(r: No)*						
Yes	1.670***	0.184	NA	NA	NA	NA
Wife approves FP *(r: No)*						
Yes	0.897**	0.354	NA	NA	NA	NA
Joint approval of FP (*r: none approves*)						
Either of them approves	NA	NA	1.223***	0.468	1.300***	0.465
Both approve	NA	NA	2.763***	0.442	2.737***	0.440
Currently using FP *(r: No#)*						
Yes	0.681***	0.107	0.684***	0.107	0.671***	0.106
Number of living children *(r: 5 and more)*						
0	-1.029***	0.289	-1.031***	0.288	-0.756***	0.285
1-2	-0.566***	0.189	-0.563***	0.188	-.127	0.178
3-4	-0.498***	0.171	-0.497***	0.171	-.117	0.162
Marital duration (*r: 11 years or more*)						
< 5	NA	NA	NA	NA	0.776***	0.176
5-10	NA	NA	NA	NA	0.486***	0.136
Interaction						
Urban * no children	.455	.441	.458	.441	.501	.435
Urban * 1-2 children	.736**	.327	.727**	.327	.702**	.321
Urban * 3-4 children	.720**	.337	.710**	.337	.593*	.329
Urban * both uneducated	.595**	.303	.598**	.302	.615**	.297
Urban * only husband educated	.310	.301	.308	.300	.429	.294
Urban * only wife educated	.541	.355	.558	.355	.560	.350
Random effect variance	0.136**	0.065	0.135**	0.065	0.127**	0.062

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01. Variables are same as in Table 7.1 except recoding in some cases.

# Lactational amenorrhea is considered as non-use of FP. It applies to only 0.1 percent of the respondents.

SE = Standard Error; NA= not considered in the model; *r* = reference category.

Model 1 and Model 2 (Table 7.2) reveal more or less the same values of coefficients with the same significance level for the common variables. More or less similar results are found for Model 2 and Model 3 (Table 7.2), except there is a change in the significance in two categories of number of living children, which may be due to the multicollinearity between marital duration and number of living children.

Significant community level variations were observed for all the three models. This indicates that individuals with the same characteristics from different communities may show different practice of couple communication regarding family planning. The standard deviation of the random effect is about 0.4 for all the models. This means, for example, that a one standard deviation change in the community random effect has: similar influence on inter-spousal communication as husband's access to newspaper compared to no access; less influence than husband approving of FP and wife approving of FP compared to non approval; and less influence than a younger husband and younger wife compared to the older ones.

7.3 Conclusion

Inter-spousal communication is a useful approach, which can help minimize differences of opinion between the spouses in a couple regarding family planning method choice, desired family size, selecting the birth intervals and many other issues. In a country like Bangladesh where the family planning and reproductive health programme is still woman-oriented, inter-spousal communication alone can motivate husbands towards a better and positive family planning and reproductive health practice. Frequent inter-spousal communication enables many of the husbands to be involved indirectly with the ongoing programme efforts. In this chapter of the thesis the scenario of inter-spousal communication in Bangladesh has been illustrated. The overall picture is not appreciable as fewer than 50 percent of the couples reported inter-spousal communication and in most of the cases frequency of couple discussion regarding family planning is limited to once or twice in the past year. This indicates the likelihood of an unshared FP practice for most of the wives as the contraceptive method mix is skewed towards the female methods.

Fig 7.3 Interaction effect between couple education and area of residence on inter-spousal communication

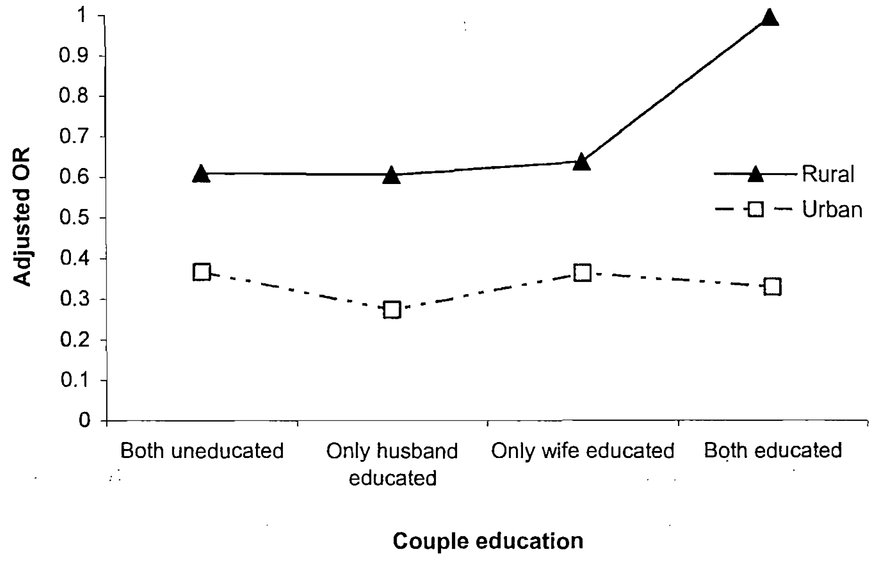
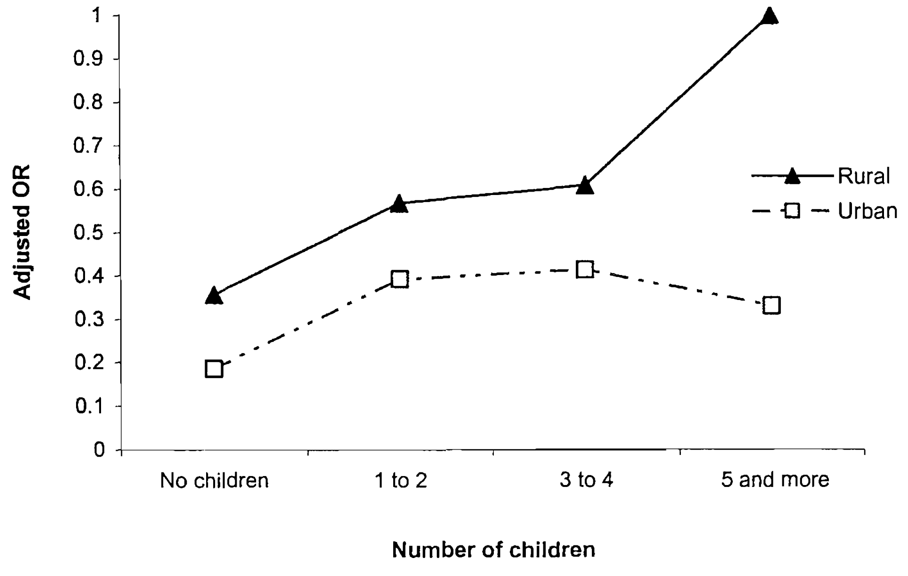


Fig 7.4 Interaction effect between number of children and area of residence on inter-spousal communication



In addition, the two-level random intercept logistic regression analyses suggest that there is significant community level variation in inter-spousal communication. Analysis suggests some divisional variation too. These indicate that inter-spousal communication has not been established as an expected cultural behaviour throughout the country.

Inter-spousal communication is found to be high among couples who have more living children, where both the spouses are educated, both approve of family planning, they are currently using family planning and when the husband has access to newspapers. All of these findings are supportive of previous studies. However, the finding that couples with less marital duration are more likely to discuss family planning, contradicts with the previous studies. Findings also suggest that couples where both husband and wife are young they are more likely to discuss FP.

The findings in this chapter reflect inherent relationships between inter-spousal communication and the socio-economic and demographic background of the respondents, which will possibly lead researchers and policy planners towards effective future planning, which will enable the ongoing FP programme to use the inter-spousal communication as a useful tool for greater male involvement in reproductive health.

Chapter 8

Men's involvement in contraceptive use*

8.1 Introduction

Men's involvement in contraception indicates their direct involvement in FP. Nothing significant can be achieved until men's knowledge of, approval of and couple communication regarding FP can be translated in to efficient practice of FP methods, especially, the male methods. However, men's non-use of male methods can not be regarded as their non-involvement, until it is evident that men do not help their wives' use of female methods. Research conducted in different parts of the world on men's involvement in contraception has been discussed briefly in the literature review section (Chapter 2). This chapter evaluates important aspects of men's involvement in contraception including men's never use of contraception, current use of contraception, consistency in reporting contraceptive use with their wives and the decision-making process in FP.

8.2 Never use of FP methods

"Never use of FP" identifies a potential group of future FP users and the level of failure of the ongoing FP campaign to reach or motivate some of the targeted clients. However, some "never use of FP" may be due to shorter marital duration when the couple is trying for babies, current pregnancy soon after marriage and when at least one of the spouses is infertile. About 12.4 percent (n = 280) of the husbands reported that they or their wives never used any FP method. About 51 percent of these men have future intention to use FP methods but they are skewed towards female methods (97 percent intended to use female methods). Table 8.1 reveals the distribution of men's "ever use of FP" by different socio-economic and demographic characteristics.

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* Important findings of Section 8.3 of this chapter have been reported in Islam, M.A., Padmadas, S.S. and Smith, P.W.F. (2005) Men and Family Planning in Bangladesh: A Multilevel Approach Using DHS Data. Presented at the IUSSP Conference, Tours, France, 18-23 July, 2005. The proceedings of the conference are published in a CD-ROM.

Table 8.1 Men's ever use of contraceptives by demographic and socio-economic characteristics

Characteristics	Total	Never used	Ever used
Age (*p*=.0001)			
15-19	16	31.3	68.7
20-24	110	26.4	73.6
25-29	295	13.9	86.1
30-34	366	13.9	86.1
35-39	459	9.4	90.6
40-44	363	9.1	90.9
45-49	304	8.9	91.1
50-54	195	10.8	89.2
55-59	141	21.3	78.7
Division (*p*=.0001)			
Barisal	199	7.0	93.0
Chittagong	389	17.5	82.5
Dhaka	582	11.5	88.5
Khulna	404	5.9	94.1
Rajshahi	460	8.9	91.1
Sylhet	215	30.7	69.3
Area of residence (*p*=.001)			
Urban	690	8.8	91.2
Rural	1559	14.0	86.0
Education (*p*=.0001)			
No education	740	18.6	81.4
Primary	666	12.6	87.4
Secondary	529	9.1	90.9
Higher	314	3.2	96.8
Religion (*p*=.396)			
Islam	1925	12.2	87.8
Others	324	13.9	86.1
No. of living children (*p*=.0001)			
0	201	34.8	65.2
1	416	15.1	84.9
2	523	7.6	92.4
3	410	8.0	92.0
4	290	9.3	90.7
5	203	8.9	91.1
6+	206	14.1	85.9

...Contd...

Table 8.1 (continued)

Characteristics	Total	Never used	Ever used
Access to newspaper (*p*=.0001)			
No	1587	14.7	85.3
Yes	662	7.1	92.9
Access to TV (*p*=.0001)			
No	996	16.4	83.6
Yes	1253	9.3	90.7
Access to radio (*p*=.003)			
No	1080	14.6	85.4
Yes	1169	10.4	89.6
Marital duration (*p*=.0001)			
Less than 5	391	21.7	78.3
5-10	473	10.6	89.4
11 and above	1385	10.5	89.5
Respondent approves FP* (*p*=.0001)			
Yes	1907	8.8	91.2
No	342	33.0	67.0
Wife approves** FP (*p*=.0001)			
Yes	2129	11.0	89.0
No	120	38.3	61.7
Discussion of FP with partner** (*p*=.0001)			
Yes	1115	6.5	93.5
No	1134	18.3	81.7
Husband's occupation (*p*=.0001)			
Unemployed	77	13.0	87.0
Professional/technical/managerial	692	6.1	93.9
Agriculture self-employed	581	16.7	83.3
Agriculture employed	159	18.9	81.1
Skilled manual	283	10.6	89.4
Unskilled manual	457	15.5	84.5
Total	2249	12.4	87.6

* wife's perception; ** wife's report
Note 1: Rows sum to 100 %.
Note 2: *p*-values are based on chi-square tests.

"Never use of FP" is high among younger men aged 24 or less, which reduces as age increases. However, there is an increase of "Never use of FP" in the later age group (55-59). Sylhet division has the highest proportion of "Never use of FP". About 31 percent of the men of this division reported that they or their wives never used a FP method. Khulna division is doing better in this regard with only about 6 percent of men reported "Never use of FP" within couple. As expected, rural men reported "Never use of FP" more than their urban counterparts. The proportion of men reported to never use any FP method decreases as men's education level increases. Islam followers reported "Never use of FP" less than their counterparts. However, this difference is not statistically significant. "Never use of FP" is the highest among men with no children. About 35 percent of men having no children reported never to use any FP method. Men having access to mass media (newspaper, TV, radio) reported "Never use of FP" less than those who have no access to mass media. As indicated above men with lesser marital duration reported "Never use of FP" more than their counterparts. The proportion of men reported never to use any FP method decreases when men or their wives approve of FP. Discussion of FP within couple ensures a significant decrease in the report of "Never use of FP". "Never use of FP" is the least (6.1 percent) among men who are engaged in professional/technical/managerial jobs, whereas, it is the highest among men who are engaged in agriculture-employed type jobs (18.9 percent).

8.3 Current use of FP methods

8.3.1 FP method mix

About 65 percent of the husbands reported that they were using contraceptives with their wives. Table 8.2 shows the current use of contraceptives reported by husbands. The pill is still the dominating contraceptive method (29.3 percent), which is followed by periodic abstinence (9.6 percent) and injectables (7.4 percent). Prevalence of reversible modern male method use, that is condom, is still low, with only 6.5 percent of the husbands reporting using it. Use of other male methods are negligible, that is, withdrawal (2.4 percent) and male sterilization (0.6 percent). Table 8.2 also gives the contraceptive method mix (last column) which indicates that pill is the dominant method (45 percent) followed by periodic abstinence (14.7 percent) and injectables (11.5 percent).

8.3.2 Bivariate analysis

Table 8.3 shows that current use of FP is highest among husbands who belong to the age group 45-49 (75 percent). This group is closely followed by age groups 40-44

(69.1 percent), 15-19 (68.8 percent), 50-54 (68.7 percent) and 35-39 (68.6 percent). Current use of FP is most among husbands from Khulna division (73.3 percent). Two other adjacent divisions are Rajshahi (72.4 percent) and Barisal (70.4 percent). Sylhet division has the lowest number of husbands who are currently using FP methods. Current use of FP is higher among urban husbands (70.4 percent).

Table 8.2 Current use of contraceptives by men

Method	Total	All men (percent)	Among men who are currently using FP (percent)
Female methods			
Pill	658	29.3	45.0
IUD	33	1.5	2.3
Injectables	168	7.4	11.5
Female sterilization	150	6.7	10.3
Norplant	6	0.3	0.4
Lactational amenorrhea	3	0.1	0.2
Male methods			
Condom	146	6.5	10.0
Male sterilization	14	0.6	1.0
Periodic abstinence	215	9.6	14.7
Withdrawal	53	2.4	3.6
Other	17	0.7	1.2
Non-use	786	34.9	-
Total	2249	100.0	100.0

Education of the husbands seems to have a positive association with current use of FP methods. Husbands belong to Hinduism are slightly more likely to use FP methods currently (65.2 percent) than their Muslim counterparts (64.7 percent). Current use of FP methods is much less among husbands who reported having no children. About 33 percent of the husbands having no children are currently using any FP method. The obvious reason for less use of FP methods is that most of them are trying for their first child. Among the husbands having only one child, 61.3 percent reported current use of FP methods and the percentage increases drastically for husbands with a higher number of children.

Husbands having access to newspapers reported currently using FP methods more than their counterparts. About 72 percent of the husbands who have access to newspapers reported current use of FP methods. A similar result is observed for husbands having access to TV and radio, that is, current use is more among husbands who have access to these media. A positive influence of access to mass media on men's current use of FP methods is expected as men are excluded from the ongoing FP programme and mass media dissemination of FP messages are important sources of FP information to men.

Table 8.3 Men's current use of contraceptives by demographic and socio-economic characteristics

Characteristics	Total	Currently using	Not using[#]
Age (p=.0001)			
15-19	16	68.8	31.2
20-24	110	59.1	40.9
25-29	295	55.3	44.7
30-34	366	61.2	38.8
35-39	457	68.6	31.4
40-44	363	69.1	30.9
45-49	304	75.0	25.0
50-54	195	68.7	31.3
55-59	141	48.9	51.1
Division (p=.0001)			
Barisal	198	70.4	29.6
Chittagong	389	60.7	39.3
Dhaka	582	61.3	38.7
Khulna	403	73.3	26.7
Rajshahi	460	72.4	27.6
Sylhet	215	45.6	54.4
Area of residence (p=.0001)			
Urban	689	70.4	29.6
Rural	1558	62.5	37.5
Education (p=.0001)			
No education	740	58.4	41.6
Primary	666	62.9	37.1
Secondary	528	69.8	30.2
Higher	313	76.4	23.6
Religion* (p=.294)			
Islam	1923	64.7	35.3
Hinduism	290	65.2	34.8
No. of living children (p=.0001)			
0	201	32.8	67.2
1	415	61.3	38.7
2	523	73.2	26.8
3	410	72.7	27.3
4	290	71.0	29.0
5	202	68.0	32.0
6+	206	55.3	44.7

...Contd...

Table 8.3 (continued)

Characteristics	Total	Currently using	Not using#
Access to newspaper (*p*=.0001)			
No	1587	62.0	38.0
Yes	662	71.9	28.1
Access to TV (*p*=.0001)			
No	996	59.8	40.2
Yes	1252	69.0	31.0
Access to radio (*p*=.016)			
No	1080	62.4	37.6
Yes	1169	67.2	32.8
Marital duration (*p*=.0001)			
Less than 5	391	55.2	44.8
5-10	473	60.5	39.5
11 and above	1383	69.2	30.8
Respondent approves FP (*p*=.0001)			
Yes	1907	70.2	29.8
No	342	35.4	64.6
Wife approves FP (*p*=.0001)			
Yes	2129	66.7	33.3
No	120	33.3	66.7
Discussion of FP with partner (*p*=.0001)			
Yes	1115	75.2	24.8
No	1134	54.9	45.1
Husband's occupation (*p*=.001)			
Unemployed	77	62.3	37.7
Professional/technical/managerial	691	71.4	28.6
Agriculture self-employed	581	62.3	37.7
Agriculture employed	159	57.2	42.8
Skilled manual	283	63.6	36.4
Unskilled manual	456	62.4	37.6
Total	2249	65.0	35.0

# including lactational amenorrhea

* 1.5 percent of the respondents are from other religions that are not presented in the table

Note 1: Since there are 2 or 4 missing values none of the counts sum to 2249 across the categories of each variable.

Note 2: Rows sum to 100 %.

Note 3: *p*-values are based on chi-square tests.

Prevalence of current use of any FP method increases as the marital duration between spouses increases. This indicates that with the increase of marital duration, a couple approaches their targeted family size and hence goes for FP options to delay or prevent future births.

Current use of FP methods is considerably higher among husbands when they and their wives approve of FP. Slightly more than three quarter of the husbands who discuss FP with their wives are current users of FP methods, while only 55 percent of those who do not discuss FP with their wives reported current use of FP. Current use of FP is the highest among the husbands who are engaged in professional/ technical/ managerial type of jobs. Current use of FP is least among husbands who are engaged in employed agriculture (57.2 percent).

8.3.3 Regression analyses

8.3.3.1 Models for current use of FP

Model 1 in Table 8.4 shows the two-level random intercept binary logistic regression estimates of the effects of different socio-economic and demographic variables on current use of FP methods by husbands. The response variable has been coded as: currently using FP methods=1, not using any method=0.

Husbands with marital duration of 5 to 10 years are significantly less likely to use contraceptives than those with marital duration 11 years or more. This may be due to that the later group has already fulfilled their fertility goals and hence more likely to use contraceptives.

Husbands from Sylhet division have significantly lower odds of using contraceptives than other divisions. The same model with different reference divisions suggest that husbands from Dhaka and Chottagong divisions have significantly lower odds of being current users of FP than husbands from Rajshahi, Khulna and Barisal divisions when controlled for other characteristics (not shown in table). Husbands residing in urban areas are significantly more likely to use contraceptives than the rural husbands.

Husbands having education up to primary level or less are less likely to use contraceptives currently than those who have education higher than secondary level. Husbands' access to TV has positive influence on the husbands' current use status of FP methods.

Table 8.4 Logistic regression estimates of the effect of different socio-economic and demographic characteristics on current use of FP by husbands

Independent variables	Model 1		Model 2$^{\#}$	
	β	SE	β	SE
Intercept	-0.928***	0.281	-0.942***	0.311
Marital duration (*r: 11 and above*)				
Less than 5	-0.208	0.187	-0.091	0.207
5-10	-0.548***	0.146	-0.345**	0.162
Division (*r: Sylhet*)				
Barisal	0.908***	0.262	0.730**	0.294
Chittagong	0.431*	0.224	0.369	0.253
Dhaka	0.445**	0.211	0.481**	0.239
Khulna	1.049***	0.228	1.007***	0.257
Rajshahi	1.066***	0.233	0.890***	0.252
Area of residence (*r: rural*)				
Urban	0.317**	0.132	0.252*	0.149
Education (*r: higher*)				
No education	-0.506***	0.185	-0.630***	0.207
Primary	-0.406**	0.183	-0.394*	0.207
Secondary	-0.247	0.186	-0.309	0.208
Access to TV (*r: no*)				
Yes	0.243**	0.112	0.335***	0.125
Respondent approves FP (*r: no*)				
Yes	1.089***	0.143	1.060***	0.157
Discuss FP with partner (*r: no*)				
Yes	0.704***	0.106	0.894***	0.119
Number of children (*r: 5 and above*)				
0	-1.514***	0.263	-1.094***	0.294
1-2	0.050	0.168	0.178	0.188
3-4	0.274*	0.150	0.189	0.166
Random effect variance	0.247***	0.081	0.351***	0.104

Note: Level of Significance: *$p<.10$, ** $p<.05$, *** $p<.01$; SE denotes Standard Error.

$^{\#}$ model is based on 1903 husbands whose wives are not pregnant and neither of the couple has been sterilized

Husbands approving of FP have higher odds of being current users of FP methods than their counterparts. Couple communication regarding FP positively influences the current use status of husbands, that is, husbands who discuss FP with their wives are more likely to use a method.

Husbands who have no children have lower odds of using contraceptives than those who have 5 or more children, whereas husbands having 3 to 4 children have significantly higher odds of using contraceptives.

Significant community variation is found in the model, which indicates that individuals from different communities with similar characteristics will show different influence on current use status of FP methods of the respondents. The standard deviation of the random effect is about 0.5. This means, for example, that a one standard deviation change in the community random effect has: similar influence on current use of FP as husband having primary level education compared to higher than secondary level education; less influence than husband approving of FP compared to non approval; less influence than discussion of FP with partner compared to no discussion; less influence than husband having no children compared to 5 and more children; greater influence than husband having access to TV compared to no access; and greater influence than husband residing in urban areas compared to rural areas.

The same model was fitted excluding respondents (husbands) who reported that their wives were pregnant (Model 2, Table 8.4). None of these couples considered in the model were sterilized. The fitted model shows very similar result with similar direction of the estimated coefficients most of which have decreased in magnitude.

8.3.3.2 Models for current use of FP methods by type

Two level random intercept binary logistic regressions were also fitted to identify the significant determinants of husbands' report of current use of female methods within couple against non-use (Model 1, Table 8.5) as well as husbands' report of current use of male methods within couple against non-use (Model 2, Table 8.5)[†]. All the variables considered for modeling current use of FP (Model 1 and Model 2, Table 8.4) have been considered along with wife's age, wife's education and wife's access to mass media. Variables that are significant in either of the models (Model 1 and Model 2 in Table 8.5) are kept in both the models for comparison purposes even if they are not significant in the other model. Divisions and area of residence are also controlled for irrespective of their significance in the models for sampling reasons (see Chapter 3).

[†] Note that a two-level random intercept multinomial logistic regression was attempted instead of the two separate models (Model 1 and Model 2, Table 8.5) with the response variable 'Current use of FP methods by type' coded as currently using female method use =1, currently using male method =2 and not currently using any method =0. The model was run in MLwiN and would not converge. As exploring the community effect is one of the objectives of the analysis, we fitted the separate models to capture the relationship.

Husbands aged less than 25 years have higher odds of reporting female method use within couples than those aged 40 years and above relative to non-use. Husbands with wives aged less than 20 years reported less use of female methods within the couple than those who have wives aged 35 years and above relative to non-use (Model 1, Table 8.5). Husbands from Sylhet division have significantly lower odds of using female methods than husbands from other divisions relative to non-use.

Husbands whose wives have access to newspapers are less likely to use female methods within couple than their counterparts relative to non-use. This may be associated with increased awareness among wives and consequently among husbands regarding the side effects of female methods, learnt from newspapers. Husbands with wives having access to TV are more likely to report current use of female methods within the couple relative to non-use. This may be due to the exposure to TV adverts on female methods. Note that in Bangladesh most of the female methods are advertised on TV and for commercial reasons these adverts never disclose the possible side effects of the methods.

Husbands approving of FP are more likely to report current use of female methods within couple relative to non-use when adjusted for other variables. This is similar for wives' approval of FP. Couple communication regarding FP positively influences the use of female methods within the couple.

Husbands having no children are less likely to use female methods within the couple relative to non-use, whereas husbands having 3 to 4 children have higher odds of using female methods compared to husbands who have 5 or more children. Significant community level variations are found in the model indicating that husbands from different communities with similar characteristics will exhibit different use pattern of female methods. The standard deviation of the random effect is about 0.5. This means, for example, that a one standard deviation change in the community random effect has:

similar influence on current use of female method as wife having access to TV compared to no access; less influence than husband approving of FP and wife approving of FP compared to non approval; less influence than discussion of FP with partner compared to no discussion; and greater influence than wife's access to newspapers compared to no access.

Among the husbands whose wives are younger than 35 years, current use of male methods are significantly lower than their counterparts relative to non-use (Model 2, Table 8.5). Husbands from Barisal, Khulna and Rajshahi divisions have higher odds of using male methods than the husbands from Sylhet division relative to non-use. Husbands with education higher than secondary level are more likely to use male methods relative to non-use. Husbands with wives having primary education are less likely to use male methods than those with wives having higher than secondary education relative to non-use.

Husbands who approve of FP are more likely to use male methods than their counterparts relative to non-use. When husbands discuss FP issues with their wives they are more likely to use male methods relative to non-use.

Husbands with no children are significantly less likely to use any male method than the husbands with 5 or more children relative to non-use. Similar to the model for female method use (Model 1, Table 8.5) significant community effects are observed in the model for current use of male methods. The standard deviation of the random effect is about 0.65. This means, for example, that a one standard deviation change in the community random effect has: less influence on current use of male method than husband approving of FP compared to non approval; and more influence than discussion of FP with partner compared to no discussion.

Table 8.5 Two-level random intercept binary logistic regression estimates of the effect of different socio-economic and demographic characteristics on type of current FP method by husbands, Bangladesh, 1999-2000

Independent variables	Model 1		Model 2	
	Female method VS non-use		Male method VS non-use	
	β	SE	β	SE
Intercept	-2.579***	.510	-.231	.501
Age of husband *(r: 40 and above)*				
Less than 25	.743**	.338	.356	.398
25-39	-.003	.156	-.094	.205
Age of wife† *(r: 35 and above)*				
Less than 20	-.587**	.255	-.576*	.315
20-34	-.223	.163	-.442**	.210
Division (*r: Sylhet*)				
Barisal	1.087***	.294	.779**	.358
Chittagong	.644**	.250	-.009	.312
Dhaka	.486**	.238	.332	.288
Khulna	1.092***	.256	.894***	.304
Rajshahi	1.281***	.248	.577*	.307
Area of residence (*r: rural*)				
Urban	.189	.152	.216	.191
Husband's education (*r: higher*)				
No education	-.164	.267	-1.144***	.304
Primary	-.063	.260	-.896***	.293
Secondary	.005	.241	-.541**	.259
Wife's education† (*r: higher*)				
No education	-.008	.368	-.490	.399
Primary	-.263	.358	-.689**	.384
Secondary	.113	.323	-.468	.332
Wife's access to newspaper† (*r: no*)				
Yes	-.392*	.237	-.249	.264
Wife's access to TV† (*r: no*)				
Yes	.427***	.139	.148	.177
Husband approves of FP† (*r: no*)				
Yes	.986***	.175	1.000***	.244
Wife approves of FP† (*r: no*)				
Yes	1.169***	.344	-.494	.324
Discuss FP with partner†‡ (*r: no*)				
Yes	.785***	.118	.585***	.149
Number of children (*r: 5 and above*)				
0	-2.300***	.327	-.572*	.346
1-2	-.047	.193	.083	.244
3-4	.299*	.172	.306	.220
Random effect variance	.251***	.093	.426***	.142

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01.
† based on wives' responses; ‡ same as couple communication regarding FP; SE = standard error;
r = reference category

8.3.3.3 Models considered for consistent reporting

A considerable amount of inconsistency was found in the reporting of current contraceptive use by husbands and wives (see Section 3.2 of Chapter 3). In this section the model for current use of FP methods (Model 1, Table 8.4) is refitted considering only the consistent use reports between husbands and wives (76.5 percent of the couples; N=1721) (Model 1, Table 8.6). The model is further restricted for fecundity[†] of the wives (66.6 percent of the consistent use reports; N= 1146) (Model 2, Table 8.6) and then further restricted for the use of reversible methods (87.8 percent of consistent use reporting with fecund wives; N=1006) (Model 3, Table 8.6). The distribution of the response variables by different characteristics for the first two models can be found in Table A1 and Table A2 in Appendix A.

A couple where the wife is less than 35 years is less likely to use contraceptives currently than the couples who have wives aged 35 or above (Model 1, Table 8.6). Couples from Sylhet division are significantly less likely to use a method of contraception currently. Further analyses suggest that couples from Dhaka and Chittagong divisions have significantly lower odds of being current users of FP than couples from Rajshahi, Khulna and Barisal divisions (not shown in table).

Couples who have access to TV are more likely to report contraceptive use than their counterparts. It is to be noted here that when wife's access to different media was considered in the regression model, wife's access to TV appeared to be significant confounding the effects of husband's access to TV. However, as the study is more interested in understanding husbands' characteristics, husband's access to TV was retained in the model. When both of the partners in a couple are educated they are more likely to use contraceptives currently than their counterparts.

Current use of contraceptives is significantly lower for couples where both the partners disapprove of family planning than when either or both of the partners approve of FP. Husbands discussing FP with their wives are significantly more likely to report current use of FP than their counterparts. Couples having no children are significantly less likely to use FP, whereas couples having 3 to 4 children are more likely to use FP than couples who have 5 or more children. A significant community effect was found in the model. The standard deviation of the random effect is about 0.5. This means, for example, that a one standard deviation change in the community random effect has: less influence on current use of FP by couples than either or both the partners approving of FP compared to non approval by both the partners; less influence than discussion of FP with partner compared to no discussion; and more influence than husband having access to TV compared to no access.

[†] reported by the wives

Model 2 (Table 8.6) was fitted for current use of FP with similar coding but restricted for consistent use reporting and as well as for fecundity of the wives. Results reveal that almost all the variables considered in Model 1 (Table 8.6) have significant effects on the response variable (with few changes of significance for different categories of independent variables) in Model 2 (Table 8.6). The exception is that husband's access to radio was found significant instead of husband's access to TV. The result suggests that couples with husbands having access to radio are more likely to use FP currently. The community effect was found insignificant in this model.

The same model (Model 2, Table 8.6) was fitted by replacing the variable for children by sex composition of children keeping all other variables as same as in the model to explore the possible impact of sex preference on current use (results are not shown in table). Nine different models were fitted with different sex compositions of children as base categories (results are not shown in table). The results indicate that until a couple reaches the 2 children family norm, which is a popular message of the Bangladesh FP campaign, they are less likely to use FP methods, but when they reach the norm, son preference is evident. Until one son is achieved couple tend to use contraceptives less. Preference to have at least one daughter is also evident if the couple already have at least one son.

Model 3 (Table 8.6) is the same as Model 2 (Table 8.6) but the data is further restricted to reversible methods use only. The community level effect was not considered because it was not significant for Model 2 based on a larger sample size. Model 3 reveals similar results as Model 2 except wife's age does not have any significant effect this time.

Table 8.6 Logistic regression estimates of the effect of different socio-economic and demographic characteristics on current use of FP by couples

Independent variables	Model 1$^{\#}$		Model 2†		Model 3‡	
	β	SE	β	SE	β	SE
Intercept	-2.386***	0.447	-0.515	0.613	-0.851	0.631
Husband's age (*r: 40 +)*						
<25	0.269	0.344	0.062	0.514	0.143	0.519
25-39	-0.103	0.169	-0.183	0.301	-0.118	0.308
Wife's age (*r: 35+*)						
<20	-0.675**	0.270	-0.922*	0.471	-0.419	0.484
20-34	-0.446**	0.178	-0.595*	0.351	-0.148	0.361
Division (*r: Sylhet*)						
Barisal	1.261***	0.320	1.545***	0.592	1.500**	0.603
Chittagong	0.544**	0.265	0.514	0.397	0.397	0.406
Dhaka	0.428*	0.248	0.068	0.364	-0.048	0.371
Khulna	1.360***	0.273	1.117***	0.416	0.981**	0.423
Rajshahi	1.159***	0.260	1.144***	0.409	0.960**	0.418
Area of residence (*r: rural*)						
Urban	0.219	0.152	0.052	0.221	0.100	0.225
Husband has access to TV (*r: no*)						
Yes	0.319**	0.133	NS	-	NS	-
Husband has access to radio (*r: no*)						
Yes	NS	-	0.553***	0.212	0.524**	0.217
Couple education (*r: both educated*)						
Both uneducated	-0.281*	0.166	-0.610**	0.269	-0.720***	0.274
Only husband educated	-0.301*	0.170	-0.014	0.319	-0.119	0.326
Only wife educated	-0.729***	0.200	-1.155***	0.315	-1.249***	0.323
Couple approval of FP (*r: none approves*)						
Either of them approves	0.873**	0.412	0.614	0.512	0.455	0.541
Both approves	2.268***	0.381	2.557***	0.483	2.501***	0.506
Discussion of FP with partner (*r: no*)						
Yes	0.943***	0.127	0.784***	0.219	0.912***	0.219
No. of living children (*r: 5+*)						
0	-2.100***	0.324	-2.637***	0.511	-2.727***	0.526
1-2	0.049	0.209	-0.208	0.381	-0.272	0.394
3-4	0.434**	0.188	0.583	0.363	0.512	0.372
Random effect variance	0.263**	0.105	NA	-	NC	-

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01; SE denotes Standard Error;
NS denotes not considered as it was insignificant in the model(s)
NA denotes retained single level model as it was not significant
NC denotes not considered due to small sample size
# model for consistent use reporting
† model for consistent use reporting and restricted to fecund wives in the couples
‡ model for consistent use reporting and restricted to fecund wives in the couples (use of permanent methods were not considered)

8.4 Consistency in reporting contraceptive use

Consistency in reporting contraceptive use between the spouses is an important part of the contraceptive study as a high level of inconsistency may mislead any kind of interpretation based on such data. Section 3.2 of Chapter 3 has provided some initial results on consistency in reporting of contraception between spouses. This section will be devoted to discuss the variability of such consistency across different sub groups of current users of FP and identify the determinants influencing it.

Table 8.7 reveals the relationship of consistent reporting of contraception with some important socio-economic and demographic characteristics of the husbands, wives and couple. Both current use and non-use are considered in measuring the consistent reporting. Consistent reporting of contraception is high among husbands aged 25 to 39 years. The report of about 78 percent of the husbands of that age group regarding their current contraceptive use was consistent with that of their wives. Husbands from Rajshahi division provided the highest level of consistency in reporting of contraception (80.4 percent), whereas Khulna division exhibited the lowest level (70.3 percent). Surprisingly, consistent reporting is high among rural husbands.

Education level of the husbands is not significantly associated with consistency of reporting of contraception but the direction of the association is negative. Religion of husbands also does not have significant association with the consistency in reporting of contraception. Consistency is highest among husbands having no living children (81.1 percent) and lowest among husbands having 5 or more children (72.1 percent). Husbands' access to TV and radio seem to increase the consistency in reporting of contraception while access to newspaper seems to decrease it. Consistency in reporting of contraception is found high among husbands who approve of FP. No significant association is observed between the consistency in reporting of contraception and husbands' occupation.

Wives aged 20 to 34 provided the highest level of consistency in reporting contraceptive use (78.9 percent), while for the age group 35 and above it is the lowest (72.1 percent). Wives' education does not have a significant association with consistent reporting of contraception. If wives approve of FP their level of consistent reporting of contraception is high.

Table 8.7 Consistency in reporting contraception by demographic and socio-economic characteristics of husbands, wives and couples

Characteristics	Total	Different use response (%)	Same use response (%)
Husband			
Age (*p*=.201)			
Less than 25	126	24.6	75.4
25-39	1120	21.9	78.1
40 and above	1003	25.1	74.9
Division (*p*=.002)			
Barisal	199	29.6	70.4
Chittagong	389	21.1	78.9
Dhaka	582	22.0	78.0
Khulna	404	29.7	70.3
Rajshahi	460	19.6	80.4
Sylhet	215	22.8	77.2
Area of residence (*p*=.067)			
Urban	690	25.9	74.1
Rural	1559	22.4	77.6
Education (*p*=.764)			
No education	740	22.3	77.7
Primary	666	23.6	76.4
Secondary	529	24.0	76.0
Higher	314	25.2	74.8
Religion (*p*=.895)			
Islam	1925	23.4	76.6
Other	324	23.8	76.2
No. of living children (*p*=.063)			
0	201	18.9	81.1
1-2	939	23.4	76.6
3-4	700	22.3	77.7
5 and above	409	27.9	72.1
Access to newspaper (*p*=.055)			
No	1587	22.4	77.6
Yes	662	26.1	73.9
Access to TV (*p*=.069)			
No	996	25.3	74.7
Yes	1253	22.0	78.0
Access to radio (*p*=.042)			
No	1080	25.4	74.6
Yes	1169	21.7	78.3
Respondent approves FP (*p*=.607)			
Yes	1907	23.3	76.7
No	342	24.6	75.4

...Contd...

Table 8.7 (continued)

Characteristics	Total	Different use response (%)	Same use response (%)
Husband's occupation (*p*=.706)			
Unemployed	77	20.8	79.2
Professional/technical/managerial	692	21.8	78.2
Agriculture self-employed	581	25.5	74.5
Agriculture employed	159	23.9	76.1
Skilled manual	283	22.6	77.4
Unskilled manual	457	24.3	75.7
Wife			
Age (*p*=.004)			
Less than 20	347	23.9	76.1
20-34	1254	21.1	78.9
35 and above	648	27.9	72.1
Education (*p*=.233)			
No education	951	25.2	74.8
Primary	641	23.2	76.8
Secondary	527	20.5	79.5
Higher	130	23.8	76.2
Wife approves FP (*p*=.030)			
Yes	2129	23.0	77.0
No	120	31.7	68.3
Couple			
Marital duration (*p*=.149)			
Less than 5	391	22.5	77.5
5-10	473	20.5	79.5
11 and above	1385	24.8	74.2
Couple education (*p*=.048)			
Both uneducated	510	24.9	75.1
Only husband educated	441	25.6	74.4
Only wife educated	230	16.5	83.5
Both educated	1068	23.4	76.6
Couple approval of FP (*p*=.292)			
None approves	104	29.8	70.2
Either of them approves	254	23.6	76.4
Both approve	1891	23.1	76.9
Discussion of FP with partner (*p*=.049)			
Yes	1115	21.7	78.3
No	1134	25.2	74.8
Total	2249	23.5	76.5

Note 1: Rows sum to 100%.
Note 2: *p*-values are based on chi-square tests.

Consistency in reporting contraceptive use is found to be high among the couples where the marital duration is 5-10 years (79.5 percent). Couple education has a significant association with the consistent reporting of contraception. When only the wife in a couple is educated the level of consistency in reporting of contraception is the highest. About 84 percent of the couple in this group reported their contraception status consistently. Interestingly if only the husband in a couple is educated the level of consistency in reporting of contraception is the least (74.4 percent). This asymmetry indicates the impact of a women based FP programme in Bangladesh where women take most of the contraceptive responsibility. Approval of FP by the spouses shows the highest level of consistency in reporting of contraception (76.9 percent). Couples who discuss FP provide more consistent reporting of contraceptive use (78.3 percent).

Regression analysis

A two-level random intercept binary logistic regression has been fitted to identify the significant determinants of consistent reporting of contraception (consistent reporting of contraception=1; inconsistent reporting of contraception=0) (Table 8.8). A significant community effect was found in the analysis indicating that couples from different communities with same set of characteristics will exhibit different influence on the response variable. The standard deviation of the random effect is about 0.4. This means, for example, that a one standard deviation change in the community random effect has greater or similar influence on consistent reporting of contraception by spouses as all the fixed effects in the model. Hence, there is a large amount of unexplained variation in the consistency in reporting of contraception across communities.

Couples from Barisal and Khulna divisions are significantly more likely to provide inconsistent reports of contraception compared to the couples from Sylhet division when controlled for other characteristics. Further analyses changing the reference category for division suggest that couples from Rajshahi, Dhaka and Chittagong divisions are more likely to report consistently regarding their contraceptive use compared to Barisal and Khulna divisions (results not shown in table). Urban couples are significantly less likely to provide consistent reporting of contraception.

Table 8.8 Logistic regression estimates of the effects of different socio-economic and demographic characteristics on consistency in reporting of contraception by spouses

Independent variables	β	SE
Intercept	1.094^{***}	0.227
Division (*r: Sylhet*)		
Barisal	-0.514^{**}	0.256
Chittagong	0.088	0.231
Dhaka	-0.004	0.217
Khulna	-0.447^{**}	0.224
Rajshahi	0.096	0.227
Area of residence (*r: rural*)		
Urban	-0.254^{**}	0.124
Couple education (*r: both educated*)		
Both uneducated	-0.132	0.138
Only husband educated	-0.135	0.142
Only wife educated	0.420^{**}	0.200
No. of living children (*r: 5+*)		
0	0.495^{**}	0.224
1-2	0.226	0.146
3-4	0.317^{**}	0.149
Discussion of FP with partner (*r: no*)		
Yes	0.203^{*}	0.106
Random effect variance	0.173^{**}	0.079

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01; SE denotes Standard Error.

When only the wife is educated the likelihood of the couple providing consistent report of contraception is higher than when both the spouses are educated. If the couple has no children or 3-4 children their odds of providing consistent reporting of contraception are high compared to couples having 5 or more children. Couples discussing FP are more likely to report consistently regarding their contraception.

8.4.1 Consistency in reporting of condom use

In the previous section consistency in reporting contraceptive use has been discussed. However, there is method specific variation in consistency in contraceptive use reporting behaviour among couples, which is worth investigating. This section will discuss the consistency in condom use reporting between husbands and wives, given the fact that condom is the main modern male method and has potential to be used outside of marital relationship. The Bangladesh FP programme encourages couples to use condom as a means to prevent not only the unwanted pregnancy but also the spread of STIs/AIDS. Furthermore, there exists a gap between condom distribution and use report by clients in Bangladesh (Ahmed et al., 1987).

Sexual and reproductive health information are culturally sensitive and rather difficult to collect in cross-sectional surveys. Information on condom use collected from men and women or couples in the Demographic and Health Surveys (DHS) are now being increasingly used in demographic research, especially in the contexts where unwanted pregnancies and sexually transmitted infections are high. Nevertheless, there has been no systematic effort to evaluate the quality of such data and the associated under or over reporting problems. From the BDHS couple dataset a sub-sample of 170 couples, where either or both the partners reported current use of condom at the time of survey, were selected for detailed analysis. The reported current method use, for either husband or wife, is restricted to only one method. It is likely that there is covert use of methods other than condom. Also some couples may openly use two methods. However, we do not have any information of multiple method use in this survey.

Development of a conceptual framework

The discrepancies between husbands' and wives' responses regarding reproductive attitudes, contraceptive knowledge and use have been reviewed (Ahmed et al., 1987; Becker and Costenbader, 2001; Goyal, 1990; Karra et al., 1997; Khan and Singh, 1987). Respondents generally tend to provide a socially acceptable response regarding certain intimate reproductive behaviour, for instance condom use (Becker and Costenbader, 2001; Karra et al., 1997). The responses are usually biased towards the practices embedded in social beliefs, values and norms. Evidence suggests that married men are likely to report higher levels of contraceptive use than their wives do, particularly condom use (Ahmed et al., 1987; Ashraf et al., 2000; Ezeh et al., 1996; Koenig et al., 1984).

Ahmed et al. (1987) in a small-scale study in Bangladesh concluded that wives were more likely to under report condom use than their husbands. This descriptive study found that both partners are likely to under report condom use, but women are under reporting condom use more than men. However, the authors did not consider the possibility of sex outside marriage and hence the chances of over reporting condom use especially by men were discarded in the analysis. Furthermore, Ahmed et al. (1987) provide no statistical examination of the possible inconsistency in reporting condom use between wives and their husbands', particularly at the national level. Evidence reveals that some women do not like to acknowledge that their husbands use condoms while others report that they do not even want their husbands to use one (Maloney et al., 1981). Besides, women are often shy or reticent to reporting coitus dependent methods such as condom (Becker and Costenbader, 2001). Becker and Costenbader (2001) in their comparative analysis of data from 23 countries concluded that wives' reports on contraceptive use have greater validity than their husbands'. The study further concluded that husbands' reports of condom use were less accurate than those of wives' in the 13 of these countries. On the other hand, over-reporting of condom use by married men could indicate the levels of sexual activity outside marriage, although there is no empirical evidence to support this argument.

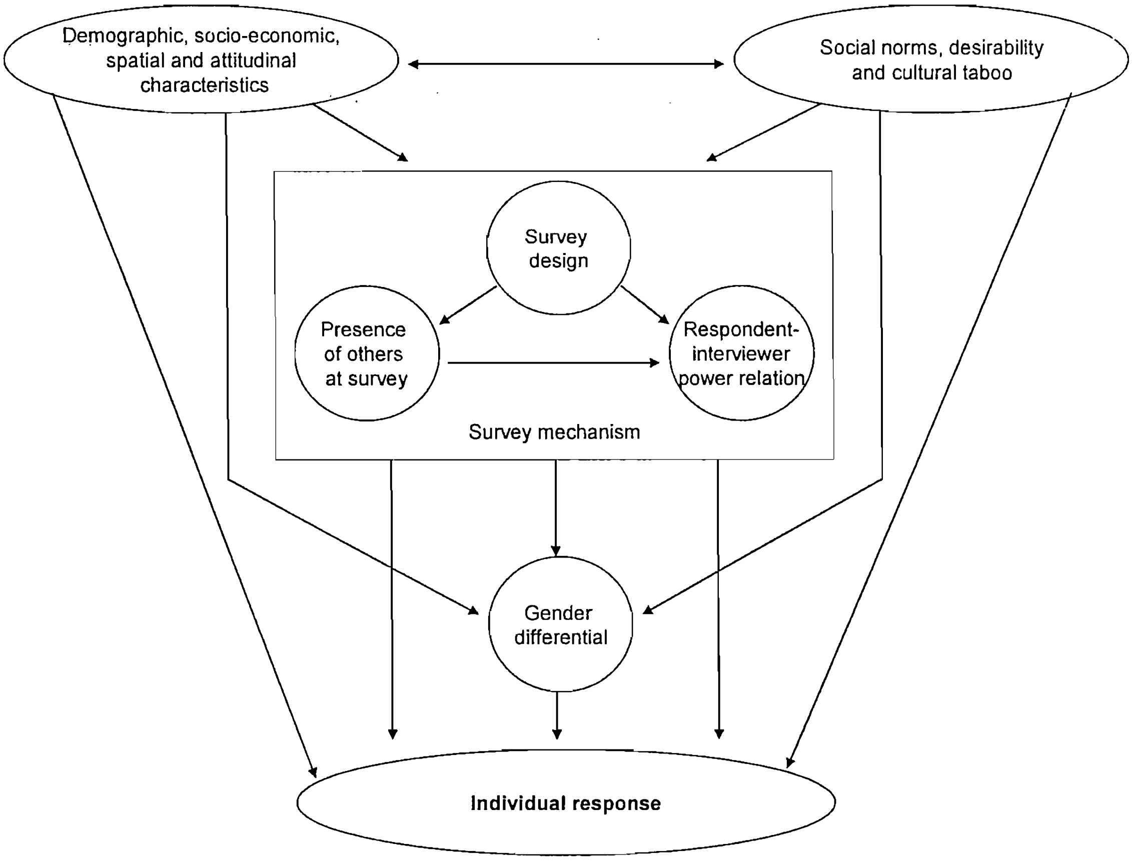
There have been many studies investigating the influence of different individual and couple characteristics on the discrepancies of reporting method use (Becker and Costenbader, 2001; Ezeh and Mboup, 1997; Koenig et al., 1984). However, the determinants of consistency in reporting vary across different country settings with diverse socio-cultural backgrounds (Becker and Costenbader, 2001).

Socials norms and cultural taboos, for example shyness associated with purchasing condoms and open discussions of sexual matters in front of family members, are thought to contribute to a sense of shame about condom usage (Khan and Bairagi, 2001). These attitudinal factors could also influence the biases in condom use reporting. The influence of social norms and social desirability in responding to survey questions seems to vary with the individual and couple characteristics (Koenig et al., 1984). These norms seem more reflected on women than on men (Mott and Mott, 1985; Renne, 1993).

Furthermore, the potential power relations and sex differences between interviewer and the interviewee may explain the discrepancies in contraceptive reporting behaviour. These roles are, however, difficult to explore or measure in large-scale surveys such as the DHS. A study by Miller and colleagues reported that sex of the interviewer had little influence on the survey responses (Miller et al., 2001). On the other hand, the presence of significant others at the time of survey tend to influence the reporting behaviour of the interviewee (Koenig et al., 1984). Unfortunately, most of the surveys including DHS do not record such information which makes it difficult to understand the role of significant others on reporting contraceptive behaviour (Ezeh and Mboup, 1997). Gray et al. (1999) in a study on Bangladesh demonstrated that a well designed survey can reduce the inconsistency in reporting of contraception to a great extent.

Based on the literature, a conceptual framework incorporating the likely influence of possible factors associated with individual reporting behaviour is developed, as shown in Fig 8.1. The framework explains how individual background characteristics, social norms and survey mechanisms interact with each other thereby influencing individual responses in the survey.

Fig 8.1 Conceptual framework showing the factors associated with individual response patterns


Demographic, socio-economic, spatial and attitudinal characteristics
Social norms, desirability and cultural taboo
Survey design
Presence of others at survey
Respondent-interviewer power relation
Survey mechanism
Gender differential
Individual response

A survey could be designed in such a way to control for the influence of significant others which in turn could reduce the possible response bias, for example by means of telephone surveys. The social status of interviewers and interviewees, for example education, could also influence individual responses. It is also likely that the responses to similar questions sometimes vary between male and female interviewee. It has to be noted that the DHS data have limitations with reference to the variables addressed in the conceptual framework. For example, the DHS did not record the presence of significant others at survey especially when the respondents were asked about questions on contraceptive use. Besides, there is no information available on the age and other characteristics of the interviewer which makes it difficult to control for the possible bias that might have occurred during the interview due to power relation between interviewer and interviewee. Therefore, the analyses reported in this section do not include all the variables as highlighted in the conceptual framework, which is a limitation of this particular analysis.

Descriptive analysis

Table 8.9 shows the percentage distribution of couple's report of condom use by socio-demographic characteristics of husband, wife and couple. The association is tested by using chi-square tests for which *p*-values are given within parenthesis against each variable. Among the couples where either of them reported condom use, about 54 percent provided consistent information that both of them were using condom. In about 32 percent of the cases husband reported condom use while wife did not. In the remaining 14 percent of couples the wife reported condom use while the husband did not. One of the reasons behind such inconsistent reports may be that the husband is reporting use of other methods or non-use due to shyness when in fact the couple is using the condom.

Consistency in reporting condom use is high among couples where husbands are aged between 35-44 years. Among the husbands who belong to this group, nearly 70 percent provided consistent report with their wives. For most of the age groups inconsistency is skewed toward husband reporting condom while wife did not. Wives who belong to the age group 30-34 provided the most consistent report with their husbands, which is followed by the age groups 20-24 and 25-29 and 35-39 years.

Table 8.9 Percentage distribution of couple's reporting of condom use by different characteristics of husband, wife and couple (N=170)

Characteristics	Total	Husband reporting condom while wife did not	Wife reporting condom while husband did not	Both reported condom
Husband				
Age (*p*=.269)				
15-24	15	40.0	13.3	46.7
25-29	24	33.3	16.7	50.0
30-34	31	41.9	9.7	48.4
35-39	32	15.6	15.6	68.8
40-44	24	12.5	16.7	70.8
45-49	26	46.2	11.5	42.3
50-59	18	44.4	16.7	38.9
Education (*p*=.030)				
No education	21	52.4	9.5	38.1
Primary	32	31.3	28.1	40.6
Secondary	52	32.7	15.4	51.9
Higher	65	26.2	7.7	66.2
Wife				
Age (*p*=.380)				
10-19	32	34.4	18.8	46.8
20-24	27	33.3	3.7	63.0
25-29	38	31.6	15.8	52.6
30-34	30	16.7	13.3	70.0
35-39	20	35.0	15.0	50.0
40-49	23	47.8	17.4	34.8
Education (*p*=.004)				
No education	39	53.8	15.4	30.8
Primary	38	28.9	23.7	47.4
Secondary	59	27.1	11.9	61.0
Higher	34	20.6	5.9	73.5
Couple				
Area of residence (*p*=.049)				
Rural	84	39.3	16.7	44.0
Urban	86	25.6	11.6	62.8
Couple communication regarding FP (*p*=.461)				
Yes	116	29.3	14.7	56.0
No	54	38.9	13.0	48.1
Total	170	32.4	14.1	53.5

p-values shown in the table are based on Pearson's chi-square tests.

Education of husbands has a positive association with couples reporting consistent condom use. For husbands with primary education, their wives are more likely to report condom use while husbands reported differently (28.1 percent). Conversely, husbands reporting condom use while wives do not were negatively associated with husband's education levels. Similar observations were found in the reporting behaviour with regard to wives' education.

Urban couples are more likely to provide consistent reports (63 percent). When there is no couple communication, the likelihood of husbands' reporting condom use while wives do not is quite high (39 percent). Further analysis suggests that when both the partners are educated the likelihood of consistent reporting of condom use is high.

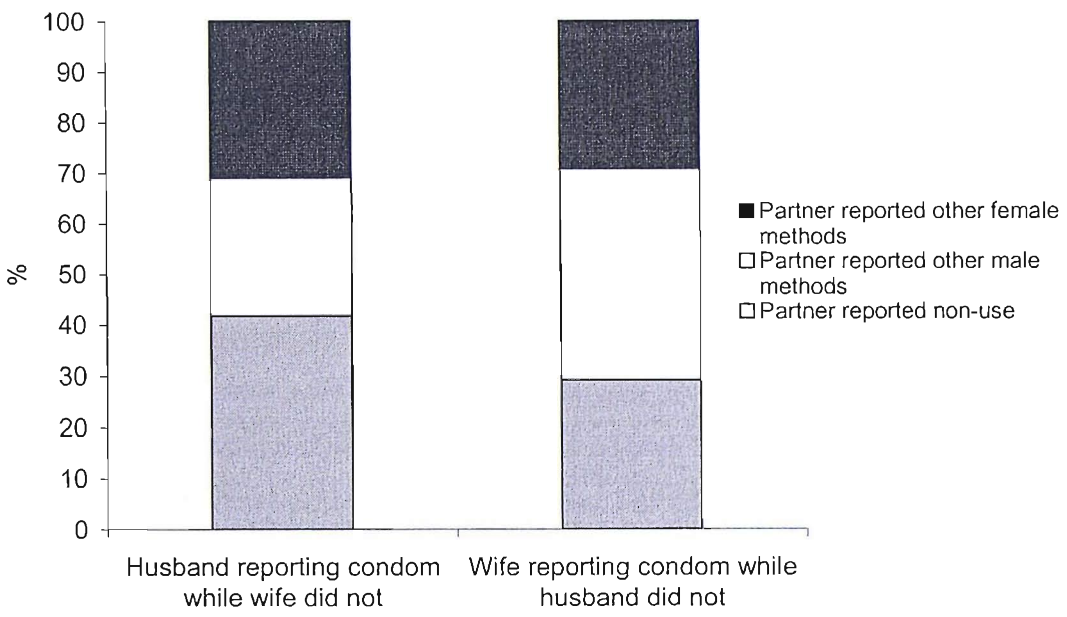
As the Demographic and Health Survey (DHS) allowed respondents to mention only one current method use from each individual we cannot obtain any information about dual method use or other possible bias in reporting (Becker and Costenbader, 2001). We can ignore the possibility of covert use, as the sample is restricted to the report of condom from either member of the couple. However, there is evidence of reporting non-use against those who reported condom use by either the husband or wife (Fig 8.2). A husband himself reporting condom use indirectly indicates his positive attitude toward family planning. The likelihood of covert use of other methods by wife in this case is negligible. On the other hand, wife's report of condom use against husband's report of non-use suggests, since the wife is prepared to report a method, that the couple is not using a female method. However, in some cases the couple may use an additional female method along with the condom, but the partners reported two different methods as they were allowed to report only one method in DHS survey.

Regression Analysis

Multinomial logistic regression model has been fitted to understand the influence of different variables simultaneously on couple's report of condom use considering the categories as described above, that is, husband reporting condom while wife did not, wife reporting condom while husband did not, both reported condom (reference category) (Table 8.10) . To avoid any possible zero cell frequency and to regain the strength of the model most of the variables in Table 8.9 have been recoded with fewer number of categories than before.

Multinomial logistic regression analysis suggests that couple education and age difference between the spouses are the significant determinants of couple's reporting of condom use (Table 8.10). When both the spouses are educated there is better family planning communication between partners. Furthermore, educated couples tend to behave rationally by overcoming the influences of social norms and taboos and hence more likely to be consistent with regard to reporting condom use. Regarding age differences, the assumption put forward here in this research is that the greater the age difference between spouses the greater is the likelihood for inconsistency in reporting between spouses. In Bangladesh, the cultural and religious norms dictate that husbands must be older than their wives. The DHS data show that in Bangladesh the average age difference between husbands and wives is about 9 years. Consequently, the conjugal relationship for these couples is mostly influenced by social norms, desirability and cultural taboo. Female respondents who are married to a partner of much older age may feel shy in sharing family planning matters with an unknown person or the interviewer. In these circumstances, the responses are more likely to be inconsistent with that of husbands' or partners'. The level of consistent reporting tends to improve with the decreasing age differences between husbands and wives.

Fig 8.2 Inconsistency in condom use as reported by husbands and wives



The regression results are presented and discussed in terms of estimated probabilities corresponding to the estimated coefficients (Table 8.11). The estimated probabilities are calculated based on the reference couple's characteristics. The reference couple considered in the model was from rural area, where only husband is educated, the age difference between the spouses is less than 8 years and there is no couple communication regarding family planning.

Table 8.10 Multinomial logistic regression estimates of the effects of couple's education and other selected characteristics on couple's reporting of condom use

Independent variables	Husband reporting condom while wife did not VS both reported condom		Wife reporting condom while husband did not VS both reported condom	
	β	SE	β	SE
Couple's education *(r: both educated)*				
Both uneducated	.914	.632	-.733	1.140
Only husband educated	1.595***	.550	1.372*	.715
Only wife educated	1.321	.930	.588	1.314
Area of residence *(r: Urban)*				
Rural	.487	.386	.578	.504
Age difference between spouses *(r: 8 or more)*				
Less than 8	.241	.385	-1.539**	.672
Couple communication regarding FP *(r: yes)*				
No	.277	.400	-.201	.542
Intercept	-1.312***	.349	-1.353***	.406

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01. SE stands for standard error.

The estimated probabilities showed that the reference couple has nearly 20.2 percent probability of both reporting condom use, 73.3 percent probability of husband reporting condom while wife did not and 6.5 percent probability of wife reporting condom while husband did not. The probability of both reporting condom use increases by 9.0 percent points for urban couples. For all other education categories, the probability of both reporting condom use is higher than that for the reference couple and it is highest when both the spouses are educated (55.0 percent). If the age difference between the spouses is more than 8 years, then the probability of both reporting condom use decreases. Couple communication regarding family planning increases the probability of both reported condom. The probability that husband reporting condom while wife did not is high only if husband is educated but not wife. If the age difference between spouses is 8 or more years the probability of wife reporting condom while husband did not increases by 21 percent points.

Table 8.11 Couple's reporting of condom use: estimated adjusted probabilities from multinomial logistic regression model

Characteristics	Both reported condom	Husband reported condom while wife did not	Wife reported condom while husband did not
Area of residence			
Rural^c	**20.2**	**73.3**	**6.5**
Urban	29.3	65.4	5.3
Couple education			
Both uneducated	34.8	63.8	1.4
Only husband educated^c	**20.2**	**73.3**	**6.5**
Only wife	25.6	70.6	3.8
Both Educated	55.0	40.5	4.5
Age difference between spouses			
Less than 8 years^c	**20.2**	**73.3**	**6.5**
8 or more	18.7	53.4	27.9
Couple communication regarding FP			
Yes	24.2	66.4	9.4
No^c	**20.2**	**73.3**	**6.5**

c refers to the characteristics of reference couple

8.5 FP decision-making

There has been much research so far to understand the decision-making process in family planning (FP) (Bankole and Singh, 1998; Edwards, 1994; Grady et al., 1999; Grady et al., 1996; Kim et al., 1998; Rutenberg et al., 2000), most of which dealt with clients' perception of contraceptive responsibility, their fertility intentions and association of these with socio-economic and demographic characteristics of the clients. But who is taking the final decision of contraception has been investigated less particularly for Bangladesh (for example: Ashraf et al., 2000). Furthermore, little is known about the influence of different socio-economic and demographic characteristics on such decision-making process (i.e., the decision taken by husband or wife or jointly) and how this decision influences the choice (female/male) of their FP method use. Such a study is important as men and women have different perceptions about the characteristics of each method option (Grady et al., 1999) and considering the skewed availability of method options for men and women. In the case of Bangladesh, male's dominant role within the family (Piet-Pelon et al., 2000) and the nature of the FP programme as being women oriented pose an extra dimension to the problem (Neaz and Banu, 1997; Population Council, 1998).

This section investigates the decision-making process in FP in Bangladesh and further explores the associated determinants. In the DHS women data set the respondents who started using a contraceptive method after April, 1994 were asked the question, 'Who is responsible for deciding to use FP?' The predefined responses were, 'mainly respondent', 'mainly husband', 'joint decision', and 'other'. Hence the sub-sample for the study was reduced to the size of 946. For the convenience of the readership the variable corresponding to the question 'Who is responsible for deciding to use FP?' will be labelled as 'FP decision'.

Results and discussion

About 68.8 percent of the women reported that they took the FP decision jointly, whereas, 18.1 percent mentioned that they took the FP decisions by themselves. Slightly more that 12 percent of the women mentioned that their husband took the FP decisions alone. Only 0.8 percent (8 cases) of the women reported that their FP decision was taken by others. However, the description of the 'others' is not available in the data set. Hence we did not consider these 8 cases in our bivariate analysis (Table 8.12) as well as in regression analysis (Table 8.13 and Table 8.14) considering the small number of cases.

Joint decision regarding FP is found highest when husband in the couple is aged 40 and above. About 70 percent of the couple in this group reported joint FP decision. As age of the husband increases, the percentage for FP decision taken only by husband decreases drastically. Joint decision regarding FP is found to be the highest in Rajshahi division (74.7 percent) and lowest in Sylhet division (56.7 percent). Women have greater shares in decision-making regarding FP in Barisal division (28.2 percent). Joint decision is high in rural areas.

Table 8.12 Decision-making in FP by demographic and socio-economic characteristics of husbands, wives and couples

Characteristics	Total	FP decision (percent)		
		Mainly by wife	Mainly by husband	Joint decision
Husband				
Age (*p*=.010)				
Less than 25	56	5.4	25.0	69.6
25-39	514	19.2	11.9	68.9
40 and above	368	18.8	11.1	70.1
Division (*p*=.054)				
Barisal	103	28.1	10.7	61.2
Chittagong	151	15.3	11.9	72.8
Dhaka	231	16.5	12.1	71.4
Khulna	204	16.7	15.2	68.1
Rajshahi	182	16.5	8.8	74.7
Sylhet	67	25.4	17.9	56.7
Area of residence (*p*=.191)				
Urban	304	20.4	14.1	65.5
Rural	634	17.2	11.5	71.3
Education (*p*=.015)				
No education	262	20.6	10.3	69.1
Primary	260	21.5	12.7	65.8
Secondary	264	18.2	14.8	67.0
Higher	152	8.6	11.2	80.2
Religion (*p*=.398)				
Islam	800	17.8	12.0	70.2
Other	138	21.0	14.5	64.5
No. of living children (*p*=.003)				
0	44	4.6	29.5	65.9
1-2	460	16.5	12.6	70.9
3-4	271	20.7	10.7	68.6
5 and above	163	22.7	9.8	67.5
Access to newspaper (*p*=.028)				
No	609	19.4	10.3	70.3
Yes	329	16.1	16.1	67.8
Access to TV (*p*=.033)				
No	389	22.1	11.3	66.6
Yes	549	15.5	13.1	71.4
Access to radio (*p*=.664)				
No	433	18.5	11.3	70.2
Yes	505	18.0	13.3	68.7
Respondent approves FP (*p*=.0001)				
Yes	866	16.3	12.2	71.5
No	72	41.7	13.9	44.4

...Contd...

Table 8.12 (continued)

Characteristics	Total	FP decision (percent)		
		Mainly by wife	Mainly by husband	Joint decision
Husband's occupation (*p*=.117)				
Unemployed	36	16.7	8.3	75.0
Professional/technical/managerial	307	15.0	13.4	71.6
Agriculture self-employed	225	16.9	12.9	70.2
Agriculture employed	71	22.5	7.1	70.4
Skilled manual	120	17.5	18.3	64.2
Unskilled manual	179	24.6	8.9	66.5
Wife				
Age (*p*=.033)				
Less than 20	149	12.8	19.4	67.8
20-34	572	19.4	11.4	69.2
35 and above	217	18.9	10.1	71.0
Education (*p*=.002)				
No education	331	24.5	11.2	64.3
Primary	275	18.2	12.7	69.1
Secondary	260	14.2	12.3	73.5
Higher	72	4.2	16.7	79.1
Wife approves FP (*p*=.010)				
Yes	913	18.3	11.8	69.9
No	25	16.0	32.0	52.0
Couple				
Marital duration (*p*=.001)				
Less than 5	185	8.6	16.2	75.2
5-10	216	21.3	14.8	63.9
11 and above	537	20.3	10.1	69.6
Discussion of FP with partner (*p*=.002)				
Yes	613	15.5	11.4	73.1
No	325	23.4	14.1	62.5
Total	938	18.2	12.4	69.4

Note 1: Rows sum to 100 %.
Note 2: *p*-values are based on chi-square tests.

Joint decision regarding FP is highest if husband in the couple has higher than secondary education. Joint decision is highest among Islam followers (70.2 percent). As the number of children increases the wife's share in the decision-making process also increases. Husbands' access to newspaper, TV and radio slightly increase their share in decision-making process in FP. When husband approves of FP joint decision is high. Among the couples where husbands are unemployed joint FP decision is the highest. Three-fourth of the couples in this group reported joint FP decision. Joint FP decision is relatively high among couples where husbands are involved in professional/technical/managerial jobs (71.6 percent).

As the wives' age increase, the percentage of joint decision regarding FP increase. Similar to husbands' education, wives' education has a positive association with joint decision. FP decision is taken jointly in mostly of the cases where wives in the couples approve of FP.

Joint FP decision is the highest when marital duration is less than 5 years (75.2 percent). As the marital duration increases FP decision taken solely by husbands decreases. If the couple discusses FP the likelihood of their joint decision increases. About 73 percent of the couples who discuss FP between spouses reported joint decision of FP..

Regression analysis

A single level multinomial logistic regression was fitted with the response variable coded as FP decision taken only by wife = 1, only by husband = 2 and jointly = 3 (reference category) on some important socio-economic and demographic variables (Table 8.13).

The regression results are presented and discussed in terms of estimated probabilities corresponding to the estimated coefficients (Table 8.14). The estimated probabilities are calculated based on the reference couple's characteristics. The reference couple considered in the model has marital duration 5-10 years, is from Dhaka division and from rural areas, the husband in the couple has primary education, the wife in the couple has primary education, husband in the couple does not have access to newspaper, husband does not approve of FP and wife does not approve of FP.

The estimated probability revealed that the reference couple has an estimated 17.1 percent probability that the FP decision will be taken only by wife, 35.3 percent probability that decision be taken only by husbands and 47.6 percent probability that the decision be taken jointly by the spouses.

Table 8.13 Multinomial logistic regression estimates of the effects of different socio-economic and demographic characteristics on FP decision-making process

Independent variables	Mainly wife		Mainly husband	
	β	SE	β	SE
Marital duration (*r:11 and above*)				
Less than 5	-0.557^{*}	0.302	0.511^{*}	0.269
5 to 10	0.367^{*}	0.218	0.666^{**}	0.258
Division (*r: Sylhet*)				
Barisal	0.315	0.405	-0.580	0.486
Chittagong	-0.652	0.403	-0.686	0.438
Dhaka	-0.468	0.376	-0.692^{*}	0.410
Khulna	-0.353	0.380	-0.387	0.402
Rajshahi	-0.554	0.388	-0.943^{**}	0.433
Area of residence (*r: Urban*)				
Rural	-0.489^{**}	0.202	-0.274	0.232
Husband's education (*r: Higher*)				
No education	0.477	0.468	0.933^{*}	0.503
Primary	0.635	0.433	0.942^{**}	0.445
Secondary	0.535	0.395	0.956^{**}	0.400
Wife's education (*r: Higher*)				
No education	1.929^{***}	0.720	-0.140	0.523
Primary	1.462^{**}	0.712	-0.132	0.502
Secondary	1.300^{*}	0.672	-0.404	0.446
Husband's access to newspaper (*r: Yes*)				
No	-0.315	0.249	-0.742^{***}	0.274
Husband approves of FP† (*r: Yes*)				
No	1.389^{***}	0.313	0.097	0.484
Wife approves of FP (*r: Yes*)				
No	-1.009	0.650	1.269^{**}	0.578
Intercept	-2.593^{***}	0.685	-1.431^{***}	0.500

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01; SE denotes Standard Error.
† wife's perception

The probability of a joint decision regarding FP by a couple increases if their marital duration is 11 years and above compared to the couple with marital duration of 5-10 years. The probability of wife alone taking the FP decision increase by 13 percent point if the couple is from Barisal division. The probability of only husband taking the FP decision increases by about 13 percent point if the couple is from Sylhet division. The probability of couples taking FP decisions jointly decreases if they reside in urban areas.

Table 8.14 FP decision-making within couple: adjusted predicted probabilities from multinomial logistic regression analysis

	FP decision taken by		
Characteristics	Mainly wife	Mainly husband	Jointly
Marital duration			
Less than 5	8.0	35.8	56.2
5 to 10^c	**17.1**	**35.3**	**47.6**
11 and above	15.3	23.4	61.3
Division			
Barisal	30.1	31.7	38.2
Chittagong	14.6	36.5	48.9
Dhaka ^c	**17.1**	**35.3**	**47.6**
Khulna	16.7	41.8	41.5
Rajshahi	17.3	30.3	52.4
Sylhet	18.8	48.5	32.7
Area of residence			
Urban	22.9	38.1	39.0
Rural ^c	**17.1**	**35.3**	**47.6**
Husband's education			
No education	15.0	36.0	49.0
Primary ^c	**17.1**	**35.3**	**47.6**
Secondary	15.7	36.2	48.1
Higher	12.9	19.6	67.5
Wife's education			
No education	24.8	31.9	43.3
Primary ^c	**17.1**	**35.3**	**47.6**
Secondary	16.4	30.2	53.4
Higher	04.3	43.9	51.8
Husband's access to newspaper			
Yes	16.2	51.1	32.7
No ^c	**17.1**	**35.3**	**47.6**
Husband approves of FP[†]			
Yes	5.1	38.2	56.7
No ^c	**17.1**	**35.3**	**47.6**
Wife approves of FP			
Yes	45.0	9.5	45.5
No ^c	**17.1**	**35.3**	**47.6**

† wife's perception; c refers to the characteristics of the reference couple

The probability of joint decision in a couple increases with the increase in the education status of the spouses. The probability of husband alone taking the FP decision increases slightly for couples where husbands have no education or have up to secondary level education. If a wife in a couple has education higher than secondary level the probability that wife takes the FP decision alone decreases drastically (4.3

percent). The probability that husband alone takes the decision increases by about 16 percent point if he has access to newspaper. Approval of FP by the wife increases the probability that the decision of FP will be taken by wife alone. The probability that husband takes the FP decision alone increases with husband's approval of FP. Husband's FP approval increases the probability of joint FP decision; while wife's FP approval decreases it.

8.5.1 Influence of FP decision-making on FP method choice

This section investigates the influence of the decision-making process on female method use versus male method use. To maintain the reliability of the results this section considers only those couples who are currently using FP method, reported the method use consistently, where wife in the couple is fecund and FP decision is taken by either of the spouses (N= 639). Analysis of data suggested that 71.7 percent of the couples are currently using female methods, which is dominated by pill (49.6 percent) (results not shown in table).

A single-level binary logistic regression was fitted to identify the effects of decision making process regarding FP as well as other demographic and socio-economic variables on FP method choice (using female method=1, using male method=0) (Table 8.15). The distribution of the response variable by different characteristics can be found in Table A3 in Appendix A. The regression analysis suggests that when FP decision is taken by wife the likelihood of using female methods is higher than male methods, and it is lower when decision is taken by husbands compared to when the decision is taken jointly by the couples. This indicates a serious state of unshared responsibility in contraception which is against the couple perspectives of the FP programme in Bangladesh.

The analysis further suggests that couples where husbands aged 25-39 years, wives aged less than 35 years, husbands have education less than higher secondary level, wives have education less than higher secondary level, husbands are engaged in professional/ technical/ managerial or agriculture-self-employed or skilled-manual jobs (compared to un-skilled manual), wives in the couples approve of FP, and couple discusses FP are more likely to use female methods than male methods than those in the corresponding reference categories.

Table 8.15 Logistic regression estimates of the effects of FP decision-making and different socio-economic and demographic characteristics on the choice of FP method (female/male) by spouses (N=639)†

Independent variables	*β*	SE
Intercept	-5.873***	1.128
FP decision (*r: joint decision*)		
Mainly wife	1.076***	.367
Mainly husband	-1.879***	.333
Age of husband (*r= 40 and above*)		
Less than 25	.756	.609
25-39	.625**	.306
Age of wife (*r= 35 and above*)		
Less than 20	2.146***	.541
20-34	1.611***	.326
Division (*r: Sylhet*)		
Barisal	.798	.552
Chittagong	.349	.475
Dhaka	.028	.439
Khulna	-.390	.449
Rajshahi	.286	.465
Area of residence (*r: rural*)		
Urban	-.260	.260
Husband's education (*r: higher*)		
No education	1.445***	.465
Primary	1.244***	.418
Secondary	.642*	.366
Wife's education (*r: higher*)		
No education	1.825***	.555
Primary	1.233**	.516
Secondary	.945**	.429
No. of living children (*r: 5+*)		
0	-1.600**	.664
1-2	.154	.411
3-4	-.067	.356
Wife approves FP (*r: no*)		
Yes	2.267**	.919
Discussion of FP with partner (*r: no*)		
Yes	.582**	.247
Husband's occupation (*r= Unskilled manual*)		
Unemployed	1.085*	.626
Professional/technical/managerial	.745**	.371
Agriculture self-employed	.684*	.372
Agriculture employed	-.257	.464
Skilled manual	1.045**	.453

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01; SE denotes Standard Error.
† couples where both the spouses are currently using and reported the same method use and where wife is fecund and FP decision taken by either or both the spouses.

8.6 Conclusion

This chapter investigated men's involvement in contraception in terms of their contraceptive use, participation in FP decision making process and its impact on FP method choice and identified the significant determinants of such indicators. The analyses were validated by controlling for consistent reporting of contraception between husbands and wives. The determinants of consistent reporting of contraception have also been investigated with special reference to consistency in reporting of condom use.

Men's involvement in contraception is found to be inadequate in terms of the use of male based method. Regression analysis suggested that men's education, access to TV, approval of FP and discussion of FP with partner are the important determinants of men's current use of FP. Note that men are not directly addressed in the ongoing FP programme. Men's education and approval of FP seem important determinants of male method use. Couple's education and their joint approval of FP and discussion of FP between spouses are important determinants of couple's use of FP (for those with consistent report of FP use between spouses). Regression analysis suggested that discussion of FP between spouses increase the consistency in reporting of contraception significantly. If both the spouses are educated and have age difference less than 8 years the probabilities of consistent condom reporting are the highest. The analysis suggested that in Bangladesh about 70 percent of the couples take FP decisions jointly which is appreciable. The probability of joint decision of FP increases with the increase in education of both husband and wife. Analysis further suggested that if a husband takes the FP decision alone he is more likely to use male methods. On the other hand if a wife takes the decision alone she is more likely to use female methods. A serious state of unshared responsibility is evident here which may be due to the women only nature of the ongoing FP programme. Divisional variations as well as urban-rural variations were found in the analyses. Significant community effects were found in most of the regression analyses which indicate the need for proper administrative actions addressing poor performing communities.

Chapter 9

Conclusions

9.1 Introduction

This chapter summarizes the findings presented in the different chapters of this thesis. Findings of this thesis will be compared with other studies conducted elsewhere in the world. Policy implications based on the results will be suggested. Finally, this chapter will conclude with limitation of the study and suggesting future work.

Male involvement in reproductive health is an essential step to improve the reproductive health outcome of men's female partners. There are many ways that males can be involved in the reproductive health related activities, for example, male can be involved in FP, pregnancy care of their wives, reducing domestic violence and preventing the spread of STIs and HIV/AIDS which have been addressed in the literature. For a country like Bangladesh, the scope of male involvement is limited for cultural, religious and programme coverage reasons. As part of a global consensus almost every country is trying to improve the status of male involvement in its ongoing reproductive health programme. Unfortunately for Bangladesh the overall process is still at the initial stage. Apart from a few efforts of evaluating the feasibility of integration of male and female reproductive health services (for example, Al-Sabir et al., 2004) little has been done in terms of programme interventions. Traditionally, family planning programmes are mainly woman oriented and they cover a limited number of reproductive health services from which most of the men are excluded. But men matter in most reproductive health decisions. Little has been done to understand the exact status of male involvement in Bangladesh, which is fundamental toward implementation of the International Conference on Population and Development (ICPD) goals. This thesis has given an overview of the male involvement in reproductive health in Bangladesh. In-depth analysis has been focused on male involvement in family planning.

9.2 Main findings

Contraceptive knowledge

Men's knowledge of contraceptive is universal in Bangladesh. Similar results were found in most of the countries where DHSs were conducted. A comparative study in 15 out of 21 countries revealed that more than 90 percent of men know at least one contraceptive method (Drennan, 1998). Among the countries in the subcontinent where DHS were conducted, Nepal shows universal knowledge of contraceptives among males but Pakistan is far behind in this regard (Dahal, 2005; Salem, 2004). Despite universal contraceptive knowledge among males in Bangladesh, still some men lack knowledge of different methods. As the Bangladesh Demographic and Health survey (BDHS) did not collect men's functional knowledge of contraceptives it is not possible to assess the impact of such knowledge on future contraceptive use behaviour. This is true for other DHS countries. Depending only on awareness of contraceptives some times misleads the interpretations as men may report having heard of one method but have wrong information. This is evident in Middle East countries (Ghazal-Aswad et al., 2002). Our study tried to extract more information on men's contraceptive knowledge from the available data by suggesting a modified definition of contraceptive knowledge: the degree of contraceptive knowledge, which could be a useful approach until the DHS modifies the definition to incorporate the functional part of knowledge.

Approval of family planning

In terms of approval of family planning, Bangladeshi men are far behind their wives, though this varies among different subgroups of population. This conforms to the studies which suggest that married women generally approve of FP more than married men (Salem, 2004). Men in other countries of the world are also positive about FP. At least half of the married men in 32 out of 35 countries reported that they approve of FP. Men's approval of family planning in Bangladesh is found to be high compared to other south Asian countries where a DHS was conducted (Salem, 2004). Different levels of approval are evident in different countries. Philippine men are found to offer conditional approval of FP, which means that wives are allowed to use FP but they should take the responsibility (Lee, 1999). On the other hand urban Sudanese men seem to control contraception entirely when they approve of FP (Khalifa, 1988).

However, the extent of approval of FP by Bangladeshi men is largely unknown. Studies suggest that men's age, area of residence, socio-economic and educational status are the determinants of men's approval of FP (Drennan, 1998). Our study supports the previous studies that education increases the approval of FP (in Ghana, Burundi, Morocco and Cameroon; see Ezeh et al., 1996) and does not provide any decisive results to support the previous findings that urban men are more likely to approve of family planning than their rural counterparts (in Burkina Faso, Cameroon and Senegal; see Drennan, 1998) and contradicts the previous study that young men approves of FP more than their counterparts (in Cameron and Senegal; see Drennan, 1998). Also this study has investigated how men behave regarding family planning approval within unions. Findings suggest that couple approval of FP is high among educated couples, among urban residents and among couples with fewer children.

Inter-spousal communication regarding family planning

Fifty percent of the couples do not discuss family planning matters together. This indicates an adverse situation in which women alone are facing any side effects or complications with their current methods. Lack of couple communication further highlights the fact that men may be less involved in other reproductive health activities, as without their being informed no help can be expected from husbands. Even though the couple communication regarding family planning in Bangladesh is not that high, it is well ahead of its subcontinent counterparts, namely Nepal and Pakistan, where DHS were conducted. About 50 percent of the couples in Bangladesh reported to discussing FP, while these percentages for Nepal and Pakistan are 44 percent and 26 percent respectively (Salem, 2004). There are some cultural settings where direct spousal communication is not the norm. The communication in those cultures (for example in Uganda) takes place through nonverbal means, that is, indirect suggestions, hints and talking to relatives or friends (Drennan, 1998; Fort, 1989). We may experience the same situation in some Bangladeshi couples, especially where the age difference between spouses is high. However, DHS data do not provide any information to explore this possibility. Again, the content of such discussion is also unknown. Detailed analysis of inter-spousal communication regarding FP supports most of the studies conducted elsewhere that area of residence (in Uganda; see Drennan, 1998), women's age (among the Yuruba; see Adewuyi and Ogunjuyigbe, 2003), number of living children (in Sri Lanka; see DeSilva, 1994) and education of the partners (in Sri Lanka; see DeSilva, 1994) are significant determinants of inter-spousal communication regarding FP. However, analysis using Bangladesh DHS suggests different directions for all the determinants except education and number of living children. In Bangladesh, couples residing in rural areas and couples with younger wives are more like to be engaged in couple communication than their counterparts, which was not the case in the previous studies conducted in other countries. Socio-cultural differences may be the reasons behind these directional changes. Another reason for urban couples being less involved in couple communication may be that couple in urban areas are more busy and so cannot spend time in FP discussion considering the fact that wife may take care of things as the FP programme in Bangladesh is women oriented. Again, there may be significant number of slum dwellers in the urban samples, which is not possible to detect with the given data structure. The finding that couples with shorter marital duration are more likely to discuss family planning, contradicts a previous study conducted in Bangladesh by Aziz and Maloney (1985).

Contraceptive use

Men's participation in contraceptive use in Bangladesh is inadequate in terms of their use of male based methods. Again, male method use is dominated by traditional methods. On the other hand, Nepal as a neighbouring country demonstrates the similar prevalence rate of male based methods, which is dominated by modern methods. However, the overall contraceptive prevalence rate in Bangladesh is 15 percentage points higher than that in Nepal (Dahal, 2005; Salem, 2004). In global perspectives, the contraceptive prevalence rate among males in Bangladesh is reasonably high compared to most of the Sub-Saharan African countries (except in Zimbabwe with 64 percent and Cape Verde with 63 percent) and near east and north African countries where DHS were conducted. However, in terms of condom use Bangladesh is far behind some of these countries, for example Gabon and Turkey (Salem, 2004). Regression analyses revealed significant determinants of men's use of FP as well as those of female and male method use reported by men. Similar to other studies, for example, in Nepal, Tanzania and Indonesia (Dahal, 2005; Jato et al., 1999; Joesoef et al., 1988) our study identified area of residence, number of living children, couple communication regarding FP and respondent's access to mass media as significant predictors of current use of FP. This study also supports the previous studies in

Tanzania (Jato et al., 1999), Sri Lanka (DeSilva, 1994) and Indonesia (Joesoef et al., 1988) that men's approval of FP ensures current use of FP. Inconsistencies have been found in reports of contraceptive use between husband and wives, which have been investigated in terms of regression modeling. This study also investigated couple use of contraceptives controlling for consistent reports of FP use between husbands and wives. Analysis suggested that in Bangladesh about 70 percent of the couples take FP decisions jointly, which is appreciable. This study further investigated the factors influencing the decision-making in FP, that is, decision taken jointly, only by husband and only by wife. Analysis revealed that if the FP decision is taken only by the husband the couple is more likely to use male methods, while the couple is more likely to use female methods if the decision is taken by wife alone. This indicates a serious state of unshared responsibility which may be due to the women only nature of the ongoing FP programme.

Amalgamation of results

Literature as well as the in-depth analysis suggest that male involvement in reproductive health, especially male involvement in family planning in Bangladesh is still inadequate. Regression analyses identified some important determinants of men's degree of contraceptive knowledge, their approval of family planning, couple communication regarding family planning, current use of contraception, and FP decision-making that may be of interest to the policy planners and programme managers. Some divisional variation as well as community variation was found in the analysis which requires administrative action for the successful implementation of the ongoing family planning and reproductive health programme.

The key findings of the research can be presented in terms of the relationships of some selected characteristics of men with their degree of family planning (FP) knowledge, approval of FP, couple communication regarding FP and current use of FP (Table 9.1). Table 9.1 also indicates the association among different components suggested in the conceptual framework (Fig 3.4).

Table 9.1 reveals that men's age has a positive relationship with the degree of FP knowledge and approval of FP but a negative relationship with couple communication regarding FP (discussion of FP with partner). With an increase in education the degree of FP knowledge, approval of FP, couple communication regarding FP and current use of FP were found to increase in the analyses. Sylhet division is lagging behind in all the four areas, while Rajshahi and Dhaka divisions are comparatively in better positions.

Table 9.1 Relationships of selected characteristics of men with degree of FP knowledge, approval of FP, discussion of FP with partner and current use of FP

Characteristics of men	Degree of FP knowledge	Approval of FP	Discussion of FP with partner	Current use of FP
Age	↑	↑	↓	NS
Education	↑	↑	↑	↑
Division				
Barisal	4	4	1	3
Chittagong	3	5	5	5
Dhaka	2	2	2	4
Khulna	5	3	4	2
Rajshahi	1	1	3	1
Sylhet	6	6	6	6
Place of residence				
Urban	NS	NS	↓	↑
Religion				
Islam	↑	NS	NS	NS
Access to TV	↑	↑	NS	↑
Access to radio	↑	NS	NS	NS
Access to newspaper	NS	NS	↑	NS
Number of living children	↑	↓	↑	↑
Approval of FP	↑	NA	↑	↑
Currently using FP	↑	↑	↑	NA
Discuss FP with partner	NS	↑	NA	↑
Community random effect	NS	NS	S	S

Note: For divisions the ranking of the categories is given. S, NS and NA stand for significant, non-significant and not considered respectively. The direction of the arrow sign indicates the direction of the association: ↑ positive and ↓ negative.

Rural men are found to be significantly more involved in couple communication than their counterparts, while rural men are significantly less likely to be the current users of FP. Islamic men are likely to have a higher degree of FP knowledge than the members of other religions. Men's access to TV has a significant positive relationship with the degree of FP knowledge, approval of FP and current use of FP. Also men's access to radio has a significant positive association with the degree of FP knowledge, whereas access to newspapers has significant positive association with couple communication. The number of living children has a significant positive relationship with the degree of FP knowledge, a negative relationship with approval of FP, a positive relationship with couple communication and a positive relationship with current use of FP. Approval of FP is positively associated with degree of FP knowledge, couple communication and current use of FP. Men who reported current use of FP by themselves or by their wives are found to have more FP knowledge, higher approval of FP and to be more involved in couple communication regarding FP than non-users. Discussion of FP with partners has significant positive relationships with approval of FP and current use of FP. Community random effect was found to be significant for couple communication regarding and current use of FP.

The findings of the study indicate the relationship of different social and demographic characteristics of men with four key indicators of family planning success, namely, knowledge about, approval of, involvement in couple communication regarding and current use of FP. The ongoing analysis helps us to understand the extent to which men are involved in the family planning programme and consequently will help the policy planners to identify the existing drawbacks of the programme in involving men. It is expected that the findings of the research will lead the policy planners to design appropriate strategies for better involvement of men in the national reproductive health and family planning programmes. For example, interventions should target young men and place more emphasis on Sylhet division.

9.3 Policy implications

On the basis of the findings of the research conducted in this thesis a number of policy implications can be formulated. The results of this thesis indicate that males should be included in the ongoing FP and reproductive health programme directly to improve the reproductive health outcomes of their wives. Men should have access to the counselling service, because addressing men only by mass media interventions can not reach them properly and some times they may get distorted messages. Men lack knowledge of the functional part of the contraceptive methods which should receive proper attention.

Education seems to have positive influence on men's approval of FP along with access to television. These two can be used jointly to increase men's approval of FP at least upto their wife's level of approval of FP. FP issues can be introduced in the academic curricula. FP programmes broadcast on television should be more motivational rather than advertising the contraceptive brands.

The more the couple communicate regarding FP the better men will be involved in helping their wives overcome physical problems due to side effects. This may also lead to male method use in future. Education can play important role here. Regression results suggests that motivational programmes through FP newspaper messages can also help increase the couple communication regarding FP. It is not quite clear why urban couples discuss FP less than their rural counterparts. Further research should be done to identify the factors associated with such behaviour and the FP programme should act accordingly.

Men's participation in contraceptive practice is limited in terms of their male methods use. This use could be increased by including men in the programme. A couple approach to the FP programme will help couples to take joint decisions about a method considering its potential side effects. The couple approach also will initiate couple communication regarding FP, which finally will help to reduce the inconsistent report of contraceptive use by husbands and wives that occurs due to lack of communication between the spouses. Traditional methods are not included in the Bangladesh FP programme. However, still many couple rely on them due to social or religious reasons. Hence it is better to include traditional methods in the programme and provide appropriate information about these to increase the efficiency of these methods that will help to reduce the failure rate of these methods. Education and access to mass media were found to have significant influences on current use as well as on joint FP decision. These should be taken into account in future programme formulations, for example, improving the education status of both the spouses.
Sylhet division is lagging behind in all aspect of male involvement in family planning. Special care should be given to understand the reason behind this and the programme should be modified accordingly. There are community variations in some of the indicators of male involvement in FP. For these indicators, in particular consistency in reporting of contraceptive use, the identity of the poor-performing communities, that is, those with a large negative random effect, should be revealed and these should be given special attention.

Demographic and Health Survey questions need to be redesigned in some case to offer better strength for secondary analysis. For example, survey questions regarding contraceptive knowledge should be modified to capture functional knowledge rather than awareness. There are several variables which have "Don't know" categories. Attempts should be made to verify if these responses are due to the avoidance of answering a question or are correct. For example, if the response to the question "Does your partner approve of FP?" is "Don't know", respondents could be asked if he/she ever asked his/her partners about this. One indirect question that may be asked to the women regarding the visit of the family panning visitor is if their husbands allow them to talk to a FP visitor. Surveys can provide information regarding interviewer and presence of significant others at survey. Surveys can also allow couples to report more than one contraceptive method if in use.

9.4 Limitations

Studying the relationship among knowledge about, approval of, couple communication regarding and current use of FP using cross-sectional survey (for example, Demographic and Health Surveys) may introduce endogeneity effect in the model estimation process. Endogeneity appears in a model if an explanatory variable is a function of the dependent variable. For example, in modeling couple communication regarding FP, approval of FP was considered as independent variable (see Chapter 7), while approval of FP can also be influenced by couple communication regarding FP (see Chapter 6). Such problem would not exist if approval of FP measured in a previous time period was used. Longitudinal data can offer great help in this situation. However, such data are rare in most of the cases. Some previous research has used longitudinal data (for example, Bawah, 2002). However, investigation of such relationship using longitudinal data may be affected by some outside unmeasured variables influencing the overall system (Finkel, 1995). Multiprocess models have the advantage of overcoming endogeneity problems (Lillard, 1993).

Most demographic research has not considered the possibility of endogeneity effects in their modeling probably because of the categorical nature of the response variables, as multi-process models would be computationally intensive. A few studies (for example, Doddo, 1998) tried with some exogeneity tests suggested by Bollen et al. (1995).

However, an exogeneity test for multilevel models is not as straightforward as an exogeneity test for single level models suggested by Bollen et al. (1995). Some of the models fitted in this thesis have been fitted with reduced sample sizes due to the restrictions imposed. This restricts the possibility of fitting multi-level multi-process models, in some cases, as sample sizes should be the same for all the models in the process. On the other hand, one of our interests was to detect if there is any community level variation in the data. Hence, single level multi-process models were not considered. Therefore, the interpretation of the results is under the assumption that there is no effect of endogeneity in the results of this study.

9.5 Future work

The number of indicators of male involvement in reproductive health discussed in research studies is quite large. This includes male involvement in family planning, male involvement in safe motherhood, male involvement in responsible fatherhood, male awareness of sexually transmitted infections (STIs), Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS), male involvement in domestic violence and male involvement in their own reproductive health care. It is not possible to address all of these in this thesis, given time constraints and the availability of data. The remaining indicators demand in-depth analysis to give complete picture of male involvement in reproductive health in Bangladesh. Further analysis should be carried out to verify if the assumption of the non-existence of an endogeneity effect on the regression models holds. Some important questions regarding men's involvement in family planning is unanswered in this thesis due to lack of data, for example, "How do husbands react when their wives face any side effect from contraceptive methods in use?" and "When FP decision is taken jointly which method they prefer and why?" Quantitative and qualitative studies may be conducted to address these questions.

References

Adewuyi, A. and Ogunjuyigbe, P. (2003) The role of men in family planning: An examination of men's knowledge and attitude to contraceptive use among the Yorubas. *African Population Studies*, 18(1):35-49.

Ahmed, G., Schellstede, W.P. and Williamson, N.E. (1987) Underreporting of contraceptive use in Bangladesh. *International Family Planning Perspectives*, 13(4):136-140.

Ahmed, M., Faisel, A.J. and Hakim, J.A. (1997) Male involvement in family planning: experiences from AVSC activities/projects. *Male involvement in family planning: experiences from innovative projects, final report.* Population Council, Bangladesh.

Ahmed, S., Parveen, S.D., Islam, A. and Khanum, P.A. (1997) Induced abortion: results from two rural areas of Bangladesh. Dhaka, Bangladesh: ICDDR,B.

Akhter, H.H. (1988) "Bangladesh" in P.Sachdev, ed., *International handbook on Abortion*, Greenwood Press, N.Y., USA, p37.

Akhter, H.H., Chowdhury, M.E.E.K. and Sen, A. (1996) A cross-sectional study on maternal morbidity in Bangladesh. Dhaka, Bangladesh: BIRPERHT.

Ali, N., Rob, U., Piet-Pelon, N.J. and Al-Sabir, A. (1997) Male intervention project. *Male involvement in family planning: experiences from innovative projects, final report.* Population Council, Bangladesh.

Al-Sabir, A., Alam, M.A., Hossain, S.M.I., Rob, U. and Khan, M.E. (2004) Integration of reproductive health services for men in health and family welfare centers in Bangladesh. National Institute for Population Research and Training (NIPORT) and Population Council, Dhaka, Bangladesh.

Amin, R., Choudhuri, S.R., Mariam, A.G. and McCarthy, J. (1987) Family planning in Bangladesh, 1969-1983. *International Family Planning Perspectives*, 13(1): 16-20.

Aral, S. (1993) Heterosexual transmission of HIV: the role of other sexually transmitted infections and behavior and its epidemiology, prevention and control. *Annual Review of Public Health*, 14: 451-467.

Ashraf, A., Tunon, C., Hasan, Y., Reza, M., Saha, N.C. and Barkat-e-Khuda. (2000) Knowledge of Men about Reproductive Health Issues in Bangladesh. *ICDDR,B: Centre for Health and Population Research*, ICDDR,B Working Paper No. 135, Dhaka, Bangladesh.

AVSC International. (1997) Men as partners in reproductive health. *Workshop report.* AVSC International, May, 1997. USA.

AVSC International. (1998) Male participation in sexual and reproductive health: New paradigms. USA.

Aziz, K.M.A. and Maloney, C. (1985) Life stages, gender and fertility in Bangladesh. *Dhaka: International Center for Diarrhoeal Disease Research*, Bangladesh.

Baden, S. Green, C., Goetz, A.M. and Guhathakurta, M. (1994) Background report on gender issues in Bangladesh. BRIDGE (development-gender), Report No. 26, Institute of Development Studies, University of Sussex.

Bankole, A. and Singh, S. (1998) Couples' fertility and contraceptive decision-making in developing countries: hearing the men's voice. *International Family Planning Perspectives*, 24(1): 15-24.

BAPSA. (1996) Bangladesh Association for Prevention of Septic Abortion. *MR Newsletter*, Mar. 1996, Bangladesh.

Barkat, A., Helali, J., Rahman, M., Majid, M. and Bose, M.L. (1995) Knowledge, attitude, perception and practices relevant to the utilization of emergency obstetric care services in Bangladesh: a formative study. Dhaka, Bangladesh: *University Research Corporation.*

Bawah, A.A. (2002) Spousal communication and family planning behavior in Navrongo: a longitudinal assessment. *Studies in Family Planning*, 33(2): 185-194.

Becker, S. (1996) Couples and reproductive health: a review of couples studies. *Studies in Family Planning*, 27(6): 291-306.

Becker, S. and Costenbader, E. (2001) Husbands' and wives' reports of contraceptive use. *Studies in Family Planning*, 32(2): 111-129.

Berer, M. (1996) Men. *Reproductive Health Matters*, 7: 7-11.

Best, K. (1998) Men's reproductive health risks. Network 18(3): 7-10. Research Triangle Park, Family Health International.

Biddlecom, A.E., Casterline, J.B. and Perez, A.E. (1997) Spouses' views of contraception in the Philippines. *International Family Planning Perspectives*, 32(3): 108-115.

Bloom, S.S., Tsui, A.O., Plotkin, M. and Bassett, S. (2000) What husbands in North India know about reproductive health: correlates of knowledge about pregnancy and maternal and sexual health. *Journal of Biosocial Science*, 32: 237-251.

Bollen, K.A., Guilkey, D.K. and Mroz, T.A. (1995) Binary outcomes and endogenous explanatory variables: tests and solutions with an application to the demand for contraceptive use in Tunisia. *Demography*, 32(1): 111-131.

Bongaarts, J. and Bruce, J. (1994) The cause of unmet need for contraception and the social content of services. New York, *Population Council,* Working paper series, No. 69, 56p.

Chaudhury, R.H. (1978) Married women in non-agricultural occupations in a metropolitan urban area of Bangladesh. *Population Studies*, 32(2): 261-273.

Chowdhury, S. and Rahman, F. (2000). Domestic violence in pregnancy in a rural area of Bangladesh. Seminar procedding on Safe Comm-9. The 9th International Conference on safe Communities. Dhaka, Bangladesh.

Chowdhury, S.N.M., Gomes, J.V and Hossain, M.S. (1997) Strengthening STD services for men in an urban clinic based program. *Monograph.* Dhaka, Bangladesh: Population Council.

Collumbien, M. and Hawkes, M. (2000) Missing men's message: does the reproductive health approach respond to men's sexual health needs? *Culture, Health and Sexuality*, 2(2): 135-150.

Cook, R.B., and Maine, D. (1987) Spousal veto over family planning services. *American Journal of Public Health*, 77(3): 339-344.

Coombs, L. and Fernandez, D. (1978). Husband-wife agreement about reproductive goals. *Demography*, 15(1): 57-73.

Cosminsky, S. (1982) Childbirth and change: a Guatemalan study. *In: Ethnography of Fertility and Birth. Ed. C.P. MacCormack. Philadelphia: F.A. Davis*, 233-252

Cox, D. R. (1970) *Analysis of Binary Data*. Chapman and Hall. London, UK.

Dahal, G.P. (2005) Men's sexual and reproductive behaviour in Nepal. Unpublished PhD thesis, School of Social Sciences, University of Southampton, UK.

Davies, J. (1985) Oral contraceptive distribution in Bangladesh: husbands as providers and instructors. *Dissertation submitted to the Graduate Division of the University of Hawaii.*

Davies, J., Mitra, S.N. and Schellstede, W.P. (1987) Oral contraception in Bangladesh: social marketing and the importance of husbands. *Studies in Family Planning*, 18(3): 157-168.

DeRose, L.F., Dodoo, F.N., Ezeh, A.C. and Owuor, T.O. (2004) Does discussion of family planning improve knowledge of partner's attitude toward contraceptives? *International Family Planning Perspectives*, 30(2): 87-93.

DeSilva, W.I. (1994) Husband-wife communication and contraceptive behaviour in Sri Lanka. *Journal of Family Welfare*, 40(2): 1-13.

Dixon-Muller, R. (1993) The sexuality connection in reproductive health. *Studies in Family Planning*, 24(5): 269-282.

Dodoo, F.N. (1998) Men matter: additive and interactive gendered preferences and reproductive behavior in Kenya. *Demography*, 35(2): 229-242.

Dodoo, F.N., Ezeh, A.C. and Owuor, T.O. (2001) Some evidence against the assumption that approval of family planning is associated with frequency of spouses' discussion of the subject. *Population Studies*, 55: 195-198.

Donahoe, D. (1996) Men and family planning in Bangladesh: a review of the literature. Final report. *Asia and Near East Operation Research and Technical Assistance Project*, The Population Council, Bangladesh.

Drennan, M. (1998). Reproductive Health: new perspectives on men's participation. *Population Reports*, Series J, No. 46, 36p.

Duza, M.B. (2002). Capacity building in reproductive health programmes focusing on male involvement: a South-to-South framework. In: Programming for male involvement in reproductive health. Report of the meeting of WHO Regional Advisers in Reproductive Health WHO/PAHO, Washington, DC, USA, 5-7 September, 2001.

Edmonson, J. (1995) Socio-cultural and behavioural research interventions in reproductive health/ family planning. *UNFPA/ CST for East and South-East Asia Newsletter*, vol. 3.

Edwards, S.R. (1994) The role of men in contraceptive decision making: current knowledge and future implications. *Family Planning Perspectives*, 26(2): 77-82.

Ezeh, A.C. (1993) The influence of spouses over each other's contraceptive attitudes in Ghana. *Studies in Family Planning*, 24 (3): 163-174.

Ezeh, A.C. and Mboup, G. (1997) Estimates and explanations of gender differentials in contraceptive prevalence rates. *Studies in Family Planning*, 28(2): 104-121.

Ezeh, A.C., Seroussi, M. and Raggers, H. (1996) Men's fertility, contraceptive use, and reproductive preferences. *Demographic and Health Surveys Comparative Studies*. Calverton, MD, USA, Macro International, No. 18.

Fathalla, M.F. (2000) Challenges in the implementation of reproductive health services: a focus on Egypt, Morocco and Tunisia. *In: Shankar J. ed. South to South*. Washington, DC, Population 2005: 41-50.

Feyisetan, B.J. (2000) Spousal communication and contraceptive use among the Yoruba of Nigeria. *Population Research and Policy Review*, 19(1): 29-45.

Finkel, S.E. (1995) Causal Analysis with Panel Data. Sage University Paper Series on Quantitative Applications in the Social Sciences. Beverly Hills: Sage Publications.

Fort, A. (1989) Investigating the social context of fertility and family planning: A qualitative study in Peru. *International Family Planning Perspectives*, 15(3): 88-95.

Fox, J. (1984) *Linear Statistical Modes and Related Methods*. John Wiley and Sons, New York, USA.

Gage, A.J. (1995) Women's socio-economic position, contraceptive use and fertility preference in Togo. *Studies in Family Planning*, 26(5): 264-277.

Gallen, M.E., Liskin, L. and Kak, N. (1986) Men- new focus for family planning programs. *Population Reporets*, Series J, No. 33. Baltimore, John Hopkins School of Public Health, Population Information Program. 32p.

Gazmararian, J.A. Lazorick, S., Spitz, A.M., Ballard, T.J., Saltzman, L.E. and Marks, J.S. (1996) Prevalence of violence against pregnant women. *Journal of the American Medical Association*, 275(24): 1915-1920.

Ghazal-Aswad, S., Zaib-un-Nisa, S., Rizk, D.E., Badrinath, P., Shaheen, H. and Osman, N. (2002) A study on the knowledge and practice of contraception among men in the United Arab Emirates. *The Journal of Family Planning and Reproductive Health Care*, 28 (4): 196-200.

Goldstein, H. (1995) *Multilevel statistical models* (2nd edition). London:Arnold.

Goldstein, H. (2003) *Multilevel statistical models* (3rd edition). London:Arnold.

Goodburn, E.A., Chowdhury, M., Gazi, R., Marshall, T., Graham, W. and Karim, F. (1994) An investigation into the nature and determinants of maternal morbidity related to delivery and the puerperium in rural Bangladesh: End of study report. Dhaka, Bangladesh: BRAC and London School of Hygiene and Tropical Medicine.

Gordon, G. (1995) Incorporating a gender perspective into sexual health promotion. *AIDS/STD Health Promotion Exchange*, 3: 11-13.

Goyal, R.S. (1990) Infant mortality, fertility and family planning: an analysis of relationships. *Demography India*, 19(2): 189-203.

Grady, W.R., Klepinger, D.H. and Nelson-Wally, A. (1999) Contraceptive characteristics: the perceptions and priorities of men and women. *Family Planning Perspectives*, 31(4): 168-175.

Grady, W.R., Tanfer, K., Billy, J.O.G. and Lincoln-Hanson, J. (1996) Men's perception of the roles and responsibilities regarding sex, contraception and childrearing. *Family Planning Perspectives*, 28(5): 221-226.

Gray, A., Chowdhury, J.H., Caldwell, B and Al-Sabir, A. (1997) Traditional family planning in Bangladesh. *Monograph.* Dhaka, Bangladesh: Population Council.

Gray, A., Chowdhury, J.H., Caldwell, B. and Al-Sabir, A. (1999) Coitus-dependent family planning methods: observation from Bangladesh. *Studies in Family Planning*, 30(1): 43-53.

Green, C.P., Cohen, S.I. and Belhadj-El-Ghouayel, H. (1995) Male involvement in reproductive health, including family planning and sexual health. New York, *United Nations Population Fund*, 104p.

Green, C.P. and Danforth, N. (1996) Involving men in reproductive health: policy implications for developing countries [Unpublished]. *Presented at the 124th Annual Meeting of the American Public Health Association*, New York.

Greene, M.E. and Biddlecom, A.E. (1997) Absent and problematic men: demographic counts of male reproductive roles. New York, *Population Council.* Working paper, series No. 103. 63p.

Hardee, K., Agarwal, K., Luke, N., Wilson, E., Pendzich, M., Farrell, M., and Cross, H. (1999) Reproductive health policies and programs in eight countries: progress since Cairo. *International Family Planning Perspectives*, 25 (Supplement): S2-S9.

Hawkes, S. (1998) Why include men? Establishing sexual health clinics for men in rural Bangladesh. *Health Policy and Planning*, 13(2): 121-130.

Hawkes, S. and Collumbien, M. (2002) The sexual health of men in India and Bangladesh: what are men's concerns? *In: Programming for male involvement in reproductive health. Report of the meeting of WHO Regional Advisers in Reproductive Health WHO/PAHO*, Washington, DC, USA, 5-7 September, 2001. WHO, Geneva, 2002.

Hawkes, S., Elwy, A.R., Hart, G.J. and Petticrew, M. (2002) Interventions to prevent STI/HIV infection in heterosexual men: results of a systematic review. *In: Programming for male involvement in reproductive health. Report of the meeting of WHO Regional Advisers in Reproductive Health WHO/PAHO*, Washington, DC, USA, 5-7 September, 2001. WHO, Geneva, 2002.

Hawkes, S. and Hart, G. (2000) Men's sexual health matters: promoting reproductive health in an international context. *Tropical medicine & international health*, 5(7): A37-44.

Heise, L.L., Pitanguy, J. and Germain, A. (1994) Violence against women: the hidden burden. Washington, DC, *World Bank*, Discussion paper No. 225. 72p.

Helzner, J.F. (1996) Men's involvement in family planning. *Reproductive Health Matters*, 7: 146-153.

Herndon, N. (1998) Men Influence Contraceptive Use. *Network*, 18(3).

Hosmer, D. W. and Lemeshow, S. (1989). *Applied Regression Analysis.* New York: Wiley.

Hossain, A., Kamal, H, and Akhter, R. (1997) Septic abortion: results from an anthropological study. Monograph. Dhaka, Bangladesh: *Bangladesh Association for the Prevention of Septic Abortion* (BAPSA).

Hunter, D.J., Maggwa, B.N., Mati, J.K., Tukei, P.M. and Mbugua, S. (1994) Sexual behaviour, STDs, male circumcision and risk of HIV infection among women in Nirobi, Kenya. *AIDS*, 8(1): 93-99.

Islam, M.A. (2006) Men's awareness of HIV/AIDS in Bangladesh: How far we are from the Millennium Development Goal? Paper presented at the 19th European Conference on Modern South Asian Studies, Leiden, the Netherlands, 27-30 June 2006. Jointly organized by the European Association of South Asian Studies and the International Institute for Asian Studies.

Islam, M.A. (2000) Factors affecting current use of contraceptives: A multinomial logistic regression analysis. *Journal of Statistical Studies* 20: 9-13, Jahangirnagar University, Savar, Dhaka, Bangladesh.

Islam, M.A. and Kabir, M. (2000) Does mass media program has any impact on the pregnancy status of rural women. *Jahangirnagar University Journal of Science*, 22 & 23: 245-255.

Islam, M.A. and Kabir, M. (1998) Factors affecting mass media FP programs on current use of contraception in Bangladesh. *The Bangladesh Journal of Agricultural Econo*mics, 21(1-2): 111-126.

Islam, M.A. and Kabir, M. and Salam, M.A. (2001) The influence of mass media on current use of contraception in rural Bangladesh. *Demography India*, 30(1): 101-114.

Islam, M.A., Padmadas, S.S. and Kabir, M. (2004) Evaluation of reported induced abortion in Bangladesh: evidence from recent DHS. Paper presented at the 18th Annual Conference of the European Society for Population Economics, June 10-12, 2004, Bergen, Norway.

Islam, M.A., Padmadas, S.S. and Smith, P.W.F. (2006) Men's Awareness of Pregnancy Care in Bangladesh: A Multilevel Data Analysis. Paper presented at the poster session of the European Population Conference 2006, 21-24 June, Liverpool, UK.

Islam, M.S. (1997) Male involvement in Bangladesh family planning program. Male involvement in family planning: experiences from innovative projects, final report. *Population Council*, Bangladesh.

Jahan, S.A., Thwin, A.A., Tunon, C. and Nasreen, S. (1996) Urban men and their participation in modern contraception: an exploratory study. Working Paper No. 23. Dhaka, Bangladesh: ICDDR,B.

Jato, M.N., Simbakalia, C., Tarasevich, J.M., Awasum, D.N., Kihinga, C.N.B. and Ngirwamungu, E. (1999) The impact of multimedia family planning promotion on the contraceptive behavior of women in Tanzania. *International Family Planning Perspectives*, 25(2): 60-67.

Jejeebhoy, S.J. (1999) The importance of social science research in the protection of sexual and reproductive choice of adolescents. *Medicine and law*, 18(2-3): 255-275.

Joesoef, M.R., Baughman, A.L. and Utomo, B. (1988) Husband's approval of contraceptive use in Metropolitan Indonesia: Program implications. *Studies in Family Planning*, 19(3): 162-168.

Johansson, A., Nga, N.T., Huy, T.Q., Dat, D.D. and Holmgren, K. (1998) Husbands' involvement in abortion in Vietnam. *Studies in Family Planning*, 29(4): 400-413.

Johns Hopkins University Center for Communication Programs. (1998) Men: key partners in reproductive health. *A report on the first conference of French-speaking African on men's participation in reproductive health*. Johns Hopkins University Center for Communication Programs, Baltimore, MD.

Joint United Nations Programme on HIV/ AIDS (UNAIDS). (2006) Uniting the world against AIDS: Bangladesh. www.unaids.org/en/Regions_Countries/bangladesh.asp (accessed on 26-05-2006).

Joint United Nations Programme on HIV/AIDS (UNAIDS)/WHO. (2003). AIDS epidemic update: December 2003. Joint United Nations Programme on HIV/AIDS (UNAIDS), World Health Organization (WHO).

Jolly, K.G. (1976) Impact of inter-spousal communication on family planning adoption. *The Journal of Family welfare*, 23 (1): 38-44.

Jones, R.B. and Wasserheit, J.N. (1991) Introduction to the biology and natural history of sexually transmitted diseases. *In: JN Wasserheit, et al., eds. Research issues in human behavior and sexually transmitted diseases in the AIDS era.* Washington, DC, American society for Microbiology.

Kak, L.P. (1993) The introduction of community-based family planning services in rural Mali: The Katibougou Family Health Project. *CEDPA working paper*, No. 2. Washington: Centre for Development and Population Activities.

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

Karra, M.V., Stark, N.N. and Wolf, J. (1997) Male involvement in family planning: a case study spanning five generations of a south Indian family. *Studies in Family Planning*, 28 (1): 24-34.

Khalifa, M.A. (1988) Attitudes of urban Sudanese men toward family planning. *Studies in Family Planning*, 19(4): 236-243.

Khan, M., Ahmed, M., Bhuyia, A., and Chowdhury, M. (1998). Domestic violence against women: Does development intervention matter? BRAC-ICDR,B Joint Research Project.

Khan, M.A. and Rahman, M. (1997) Determinants of contraceptive method choice in rural Bangladesh. *Asia-Pacific Population Journal*, 12(3). www.unescap.org/ESID/psis/population/journal/1997/v12n3dn.htm (accessed on 11-08-2006).

Khan, M.E. and Patel, B.C. (1997) Male involvement in family planning: a KABP study of Agra district. *The Population Council*, India.

Khan, M.E. and Singh, R. (1987) Women and her role in the family decision making process: a case study of Uttar Pradesh, India. *The Journal of Family welfare*, 33(4): 49-63.

Khan, M.I. and Bairagi, R. (2001) Contraceptive use in Matlab with special focus on condoms: socio-economic correlates and future implications. *Journal of Health & Population in Developing Countries*, 4(2): 16-22.

Khan, M.M.H., Kabir, M. and Mori, M. (2004) Impact of various sources of AIDS information among ever married men and women in Bangladesh. *Journal of Health & Population in Developing Countries*. http://www.jhpdc.unc.edu (Published on 9 March, 2004).

Kim, Y.M., Kols, A. and Mucheke, S. (1998) Informed choice and decision-making in family planning counselling in Kenya. *International Family Planning Perspectives*, 30(1): 4-11 & 42.

Kincaid, D.L., Massiah, E. and Gupta, A.D. (1993) Ideational aspects of fertility change in Bangladesh. *Paper prepared for the Annual Meeting of the Population Associan of America*, Cincinnati, Ohio, April, 1-3.

Kiragu, K. (2001) Youth and HIV/AIDS: Can we avoid catastrophe? *Population Reports*, Series L, No. 12, 39p. Baltimore, The John Hopkins University Bloomberg School of Public Health, Population Information Program.

Koenig, M.A., Simmons, G.B. and Misra, B.D. (1984) Husband-wife inconsistencies in contraceptive use responses. *Population studies*, 38: 281-298.

Konings, E. and Carael, M. (1997) Marriage patterns, sexual networks and HIV in the developing world. *In: Proceedings of the International Population Conference, Beijing, 11-17 October, 1997. liege,* International Union for the Scientific Study of Population (IUSSP): 401-433.

Landry, E. and Ward, V. (1997) Perspectives from couples on the vasectomy decision: a six-country study, in Sundari Ravindra, T.K. Berer, M. and

Cottingham, J. eds., *Beyond Acceptability: Users' Perspectives on Contraception*, London: Reproductive Health Matters.

Larson, A. and Mitra, S.N. (1992) Family planning in Bangladesh: an unlikely success story. *International Family Planning Perspectives*, 18(4): 123-129.

Lasee, A. and Becker, S. (1997) Husband-wife communication about family planning and contraceptive use in Kenya. *International family planning perspectives*, 23(1): 15-20 & 33.

Lee, R.B. (1999) Men's involvement in women's reproductive health projects and programmes in the Philippines. *Reproductive Health Matters*, 7(14): 106-117.

Lillard, L.A. (1993) Simultaneous equations for hazards: Marriage duration and fertility timing. *Econometrics*, 56:189-217.

Limanonda, B. (1998) Gender issues in reproductive health and promoting male responsibility. *Economic and Social Commission for Asia and the Pacific (ESCAP), Population Programme*, ICPD+5 (web version, visited on March 2004).

Magnani, R.J., Bertrand, J.T., Makani, B. and Mcdonalds, S.W. (1995) Men, marriage and fatherhood in Kinshasa, Zaire. *International Family Planning Perspectives*, 21(1): 19-25, 47.

Mahmood, N and Ringheim, K. (1997) Knowledge, approval and communication about family planning as correlates of desired fertility among spouses in Pakistan. *International Family Planning Perspectives*, 23(3): 122-129, 145.

Maloney C., Aziz, K.M.A. and Sarker P.C. (1981) Beliefs and Fertility in Bangladesh. Monograph Series No. 2, ICDDR,B, Dhaka, Bangladesh, p228.

Mason, K.O. and Taj, A.M. (1987) Differences between women's and men's reproductive goals in developing countries. *Population and Development Review*, 13(4): 611-638.

Mbizvo, M.T. and Bassett, M.T. (1996) Reproductive health and AIDS prevention in sub-Saharan Africa: the case for increases male participation. *Health Policy and Planning*, 11 (1): 84-92.

Mbizvo, M.T. and Adamchak, D.J. (1991) Family planning knowledge, attitude, and practice of men in Zimbabwe. *Studies in Family Pla*nning 22(1): 31-38.

Mccauley, A.P., Robey, B, Blanc, A, and Geller, J (1994) Opportunities for women through reproductive choice. *Population Reports*, Series M, No. 12. Baltimore, John Hopkins School of Public Health, Population Information Program. 39p.

McGinn, T., Bamba, A. and Balma, M. (1989) Male Knowledge, Use and Attitude Regarding Family Planning in Burkina Faso. *International Family Planning Perspectives*, 15(3): 84-87+95.

Mesfin, G. (2002) The role of men in fertility and family planning program in Tigray Region. *Ethiop.J.Health Dev.*, 16(3): 247-255.

Miller, K., Zulu, E.M. and Watkins, S.C. (2001) Husband-wife survey responses in Malawi. *Studies in Family Planning*, 32(2): 161-174.

Ministry of Health and Family Welfare Bangladesh. (2004) *HIV in Bangladesh: The present scenario*. November. Ministry of Health and Family Welfare. Dhaka.

Mistik, S. Nacar, M., Mazicioglu, M. and Cetinkaya, F. (2003) Married men's opinions and involvement regarding family planning in rural areas. *Contraception*, 67: 133-137.

Mitra, S.N., Al-Sabir, A., Cross, A.R. and Jamil, K. (1997) *Bangladesh Demographic and Health Survey, 1996-1997.* Dhaka and Calverton, Maryland: National Institute of Population Research and Training (NIPORT), Mitra and Associates, and Macro International Inc.

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

Moses, S., Muia, E., Bradley, J.E., Nagelkerke, N.J., Ngugi, E.N., Njeru, E.K., Eldridge, G., Olenja, J., Wotton, K., Plummer, F.A., et al. (1994) Sexual behaviour in Kenya: implications for sexually transmitted disease transmission and control. *Soc Sci Med*, 39: 1649-56.

Mott, F.L. and Mott, S.H. (1985) Household decisions in West Africa: a comparison of male and female survey results. *Studies in Family Planning*, 16(2): 88-99.

Mundigo, A.I. (2000) Re-conceptualizing the role of men in the post-Cairo era. *Culture , Health and Sexuality*, 2(3): 323-337.

Mundigo, A.I. (1995) Men's roles, sexuality and reproductive health. *International Lecture Series on Population issues*, the John D. Catherine T. MacArthur Foundation.

National Institute of Population Research and Training (NIPORT), Mitra and Associates (MA), and ORC Macro (ORCM). (2001) *Bangladesh Demographic and Health Survey 1999-2000.* Dhaka, Bangladesh and Calverton, Maryland, [USA]: National Institute of Population Research and Training, Mitra and Associates, and ORC Macro, 2001.

Ndong, I. And Finger, W.R. (1998) Male responsibility for reproductive health. *Network*, 18(3): 4-6. Research Training Pack, Family Health International.

Ndong, I, Becker, R.M., Haws, J.M. and Wegner, M.N. (1999) Men's reproductive health: defining, designing and delivery services. *International Family Planning Perspectives*, 25, supplement.

Neaz, A. and Banu, H. (1997) Male motivation programme for improving reproductive health. Male involvement in family planning: experiences from innovative projects, final report. *Population Council*, Bangladesh.

Noman, A. (1983) Status of women and fertility in Bangladesh. Dhaka: *university press*. Bangladesh.

Nzioka, C. (2002) Research on men and its implications on policy and programme development in reproductive health. *In: Programming for male involvement in reproductive health. Report of the meeting of WHO Regional Advisers in Reproductive Health WHO/PAHO*, Washington, DC, USA, 5-7 September, 2001.

Odimegwu, C.O. (1999) Family Planning Attitudes and Use in Nigeria: A factor Analysis. *International Family Planning Perspectives*, 25(2): 86-91.

Omondi-Odhiambo. (1997) Men's participation in family planning decision in Kenya. *Population Studies*, 51(1): 29-40.

Oni, G.A. and McCarthy, J. (1991) Family planning knowledge, attitude and practices of males in Ilorin, Nigeria. *International Family Planning Perspectives* 17(2): 50-54+64.

Oyediran, K.A. , Ishola, G.P. and Feyisetan, B.J. (2002) Factors Affecting Ever-Married Men's Contraceptive Knowledge and Use in Nigeria. *Journal of Biosocial Science*, Cambridge University Press, 34(4): 497-510.

Oyediran, K.A. and Isiugo-Abanihe, U.C. (2002) Husband-wife communication and couple's fertility desires among the Yoruba of Nigeria. *African Population Studies*, 17(2): 61-80.

Pantelides, E.A. (2002) Male involvement in prevention of pregnancy and HIV infection: results from research in four Latin American cities. *In: Programming for male involvement in reproductive health. Report of the meeting of WHO Regional Advisers in Reproductive Health WHO/PAHO*, Washington, DC, USA, 5-7 September, 2001. WHO, Geneva, 2002.

Petro-Nustas, W. (1999) Men's Knowledge of and Attitudes Toward Birthspacing and Contraceptive Use in Jordan. *International Family Planning Perspectives*, 25(4):181-185.

Petro-Nustas, W. and Al-Qutob, R. (2002) Jordanian men's attitudes and views of birth-spacing and contraceptives use (A qualitative approach). *Health Care for Women International*, 23: 516-529.

Piet-Pelon, N.J. (1997) Male involvement in the Bangladesh family planning and reproductive health program. Male involvement in family planning: experiences from innovative projects, final report. *Population Council*, Bangladesh.

Piet-Pelon, N.J., Rob, U. and Khan, M.E. (2000) *Men in Bangladesh, India and Pakistan: reproductive health issues*. Karshaf Publishers, Dhaka, Bangladesh.

Piotrow, P.T., Kincaid, D.L, Hindin, M.J., Lettenmaier, C.L., Kuseka, I., Silberman, T., Zinanga, A., Chikara, F., Mbizvo, A.M., Lynn, W., Kumah, O.M., and Kim, Y. (1992) Changing men's attitudes and behaviour: the Zimbabwe male motivation project. *Studies in Family Planning*, 23(6): 365-375.

Population Council. (2001a) Power in sexual relationships: an opening dialogue among reproductive health professionals. *Population Council*, New York, USA.

Population Council. (2001b) Involving men in their wives' antenatal and postpartum care in India. Research Update, March 2001. *Frontiers in Reproductive Health*, Population Council, India.

Population Council. (2000) Men as supportive partner in reproductive health: moving from rhetoric to reality. *Population Council*, New Delhi, India. 68p.

Population Council. (1998) Getting men involved in family planning: experiences from an innovative program. Final report, *Population Council*, Dhaka, Bangladesh.

Population Council. (1994) Reproductive health approach to family planning. Presentations from a panel held on Professional Development Day at the USAID Cooperation Agencies meeting, February, Washington, DC. Compiled by Population Council, New York.

Rahman, M.M. and M. Kabir, M. (2005) Gender Based Violence against Female Adolescents and Factors affecting it in Bangladesh Paper prepared for 25th IUSSP International Population Conference, Tours, France, 18-23 July 2005.

Rasbash, J., Steele, F.,Browne, W. and Prosser, B. (2004) *A user's guide to MLwiN* (version 2.0). Center for Multilevel Modelling, Institute of Education, University of London.

Renne, E.P. (1993) Gender ideology and fertility strategies in an Ekiti Yoruba village. *Studies in Family Planning*, 24(6): 343-353.

Reproductive Health Organization (RHO). (2004) Men and reproductive health. *A compilation of researches published in the official web page*: www.rho.org (March, 2004).

Ringheim, K. (1993). Factors that determine prevalence of use of contraceptive methods for men. *Studies in Family Planning*, 24(2): 87-99.

Robey, B., Rutstein, S.O., Morris, L. and Blackburn, R. (1992) The Reproductive revolution: New survey findings. *Population Reports*, Series M, No. 11. Baltimore, John Hopkins School of Public Health, Population Information Program. 43p.

Robey, B. and Drennan, M. (1998) Male participation in reproductive health. *Network*: 18(3): 11-15. Research training Pack, Family Health International.

Robey, B., Ross, J. and Bhushan, I. (1996) Meeting unmet need: New strategies. *Population Reports*, Series J, No. 43. Baltimore, John Hopkins School of Public Health, Population Information Program. 35p.

Robey, B., Thomas, E., Baro, S. and Kpakpo, G. (1998) Men: Key partners in reproductive health. Ougadougou, Burkina Faso, John Hopkins School of Public Health, Center for Communication Programs. *Special publication series* No. 10. 61p.

Roudi, F. and Ashford, L. (1996) *Men and family planning in Africa. [Chart book of DHS data]* Washington , DC, Population Reference Bureau, July.

Routh, S., Ashraf, A., Stoeckel, J. and Barkat-e-Khuda. (2001) Consequences of the shift from domiciliary distribution to site-based family planning services in Bangladesh. *International Family Planning Perspectives*, 27(2): 82-89.

Rutenberg, N., Biddlecom, A.E. and Kaona, F.A.D. (2000) reproductive decision-making in the context of HIV and AIDS: a qualitative study in Ndola, Zambia. *International Family Planning Perspectives*, 26(3): 124-130.

Salem, R. (2004) Men's Surveys: New Findings. *Population Report*, Series M, No. 18. Baltimore, John Hopkins Bloomberg School of Public Health, The INFO Project, Spring 2004.

Salway, S. (1994) How attitude toward family planning and discussion between wives and husbands affect contraceptive use in Ghana. *International family planning Perspectives*, 20(2): 44-47 & 74.

Santow, G. (1995) Social roles and physical health: the case of female disadvantage in poor countries. *Social Science and Medicine*, 40(2): 147-161.

Sargent, C. (1982) *The cultural context of therapeutic choices: obstetrical care decisions among the Bariba of Benin.* Boston: D. Reidel Publishing.

Schuler, S.R., Hashemi, S.M., and Jenkins, A.H. (1995) Bangladesh's family planning success story: a gender perspective. *International Family Planning Perspectives*, 21(4): 132-137, 166.

Schuler, S.R., Hashemi, S.M., Riley, A.P., and Akhter, S. (1996). Credit programmes patriachy and men's violence against women in rural Bangladesh. *Soc Sci Med*, 43(12): 1729-1742.

Schulte, M.M. and Sonenstein, F.L. (1995) Men at family planning clinics: the new patients? *Family Planning Perspectives*, 27(5): 212-225.

Singh, K.K., Bloom, S.S. and Tsui, A.O. (1998) Husbands' reproductive health knowledge, attitudes, and behaviour in Uttar Pradesh, India. *Studies in Family Planning*, 29(4): 388-399.

Steele, F., Amin, S., and Naved, R.T. (1998). The impact of an integrated micro-credit programme on women's empowerment and fertility behaviour in rural Bangladesh. Working Paper No. 115. Policy Research Division MY: Population Council.

Storey, J.D., Ilkhamov, A., and Saksvig, B. (1997) Perceptions of family planning and reproductive health issues: focus group discussion in Kazakhstan, Turkmenistan, Kyrgyzstan and Uzbekistan. Baltimore, John Hopkins School of Public Health, *Center for Communication Programs*, field report series, No. 10. 80p.

Stycos, J.M. (1996) Men, couples, and family planning: a retrospective look. Cornell University Population and Development Program *Working Paper Series* No. 96.

Terefe, A., and Larson, C.P. (1993) Modern contraception use in Ethiopia: does involving husbands make a difference? *American Journal of Public Health*, 83(11): 1567-71.

Thaddeus, S. and Maine, D. (1994) Too far to walk: maternal mortality in context. *Social Science and Medicine*, 38(8): 1091-1110.

The Alan Guttmacher Institute. (2003) In their own right: addressing the sexual and reproductive health needs of men worldwide, New York.

The Alan Guttmacher Institute. (2002) In their own right: addressing the sexual and reproductive health needs of American Men, New York.

Thomas, T. Choudhri, S., Kariuki, S. and Moses, S. (1996) Identifying cervical infection among pregnant women in Nairobi, Kenya: limitations of risk assessment and symptom-based approaches. *Genitourin med*, 72: 334-338.

United Nations (UN). (2005) The Millennium Development Goals Report 2005. United Nations, New York. http://unstats.un.org/unsd/mi/pdf/MDG%20Book.pdf (accessed on 23-08-2006).

United Nations Fund For Children (UNICEF). (1998) *The state of the world's children: focus on nutrition*. New York, UNICEF. 131p.

United Nations Population Fund (UNFPA). (1997) *The state of world's population 1997: the right to choose*. Reproductive rights and reproductive health. New York, UNFPA. 76p.

United Nations Population Fund (UNFPA). (1995) Male involvement in reproductive health, including family planning and sexual health. *Technical Report*, New York, No. 28.

United Nations Population Fund (UNFPA). (1994) ICPD Programme of Action. Programme of action adopted at the International Conference on Population and Development, Cairo, 5-13 September, 1994. www.unfpa.org/icpd_poa.htm (accessed on 1-8-2006)

Valente, T. W., and Saba, W.P. (1996) Reproductive health is in your hands: The national media campaign in Bolivia. SIECUS: Sexuality Information and Education Council of the United States, 25(2), 10-13.

Verma, R.K. and Rangaiyan, G. (1997) A comparative response of male and female students on issues related to sexuality and reproductive health. In research related to male involvement in reproductive health and contraceptive use. Baroda, India: Population Council.

Verme, C.S., Wegner, M.N. and Jerzowski, T. (1996) The language of male involvement: what do you mean by that? *Populi*, 23(2): 10-12.

Wegner, M.N., Landry, E., Wilkinson, D. and Tzanis, J. (1998) Men as partners in reproductive health: from issues to action. *International family Planning Perspectives*, 24(1): 38-42.

Westoff, C.F. and Bankole, A. (1998) The time dynamics of unmet need: an example from Morocco. *International Family Planning Perspectives*, 24(1): 12-14, 24.

WHO. (2002) Programming for male involvement in reproductive health. Report of the meeting of WHO Regional Advisers in Reproductive Health WHO/PAHO, Washington, DC, USA, 5-7 September, 2001.

Wilkinson, D. (1997) Man-myths: some perceptions from Kenya: reproductive health attitudes and behaviour in three sublocations, unpublished paper, AVSC International, New York.

Worth, D. (1989) Sexual decision-making and AIDS: why condom promotion among vulnerable women is likely to fail. *Studies in Family Planning*, 20(6): 297-307.

Appendix A

Table A1 Current use of contraceptives by demographic and socio-economic characteristics of husbands, wives and couples (only for consistent reports)

Characteristics	Total	Currently using (%)	Not using$^{\#}$ (%)
Husband			
Age (p=.001)	95	49.5	50.5
Less than 25	875	58.1	41.9
25-39	751	65.1	34.9
40 and above			
Division (p=.000)			
Barisal	140	71.4	28.6
Chittagong	307	56.0	44.0
Dhaka	454	55.3	44.7
Khulna	284	71.8	28.2
Rajshahi	370	68.9	31.1
Sylhet	166	37.3	62.7
Area of residence (p=.031)			
Urban	511	64.6	35.4
Rural	1210	59.0	41.0
Education (p=.000)			
No education	575	53.0	47.0
Primary	509	59.3	40.7
Secondary	402	66.4	33.6
Higher	235	72.3	27.7
Religion (p=.313)			
Islam	1474	60.2	39.8
Other	247	63.6	36.4
No. of living children (p=.000)			
0	163	19.6	80.4
1-2	719	64.1	35.9
3-4	544	70.8	29.2
5 and above	295	56.3	43.7
Access to newspaper (p=.000)			
No	1232	57.6	42.4
Yes	489	68.3	31.7
Access to TV (p=.000)			
No	744	55.1	44.9
Yes	977	64.9	35.1
Access to radio (p=.010)			
No	806	57.4	42.6
Yes	915	63.5	36.5
Respondent approves FP (p=.000)			
Yes	1463	67.3	32.7
No	258	22.9	77.1

...Contd...

Table A1 (continued)

Characteristics	Total	Currently using (%)	Not using[#] (%)
Husband's occupation (*p*=.002)			
Unemployed	61	62.3	37.7
Professional/technical/managerial	541	67.8	32.2
Agriculture self-employed	433	57.7	42.3
Agriculture employed	121	53.7	46.3
Skilled manual	219	58.9	41.1
Unskilled manual	346	56.4	43.6
Wife			
Age (*p*=.000)			
Less than 20	264	42.8	57.2
20-34	990	62.4	37.6
35 and above	467	67.0	33.0
Education (*p*=.000)			
No education	711	56.4	43.6
Primary	492	57.5	42.5
Secondary	419	68.7	31.3
Higher	99	72.7	27.3
Wife approves FP (*p*=.000)			
Yes	1639	62.8	37.2
No	82	17.1	82.9
Couple			
Marital duration (*p*=.000)			
Less than 5	303	48.2	51.8
5-10	376	55.3	44.7
11 and above	1042	66.2	33.8
Couple education (*p*=.000)			
Both illiterate	383	54.6	45.4
Only husband educated	328	58.5	41.5
Only wife educated	192	50.0	50.0
Both educated	818	66.9	33.1
Couple approval of FP (*p*=.000)			
None approves	73	13.7	86.3
Either of them approves	194	27.3	72.7
Both approve	1454	67.5	32.5
Discussion of FP with partner (*p*=.000)			
Yes	873	73.7	26.3
No	848	47.3	52.7
Total	1721	60.7	39.3

# including lactational amenorrhea, which is practiced by none among the couples within the sample

Note 1: Rows sum to 100%.

Note 2: *p*-values are based on chi-square tests.

Table A2 Current use of contraceptives by demographic and socio-economic characteristics of husbands, wives and couples (only for consistent reports and only when wife is fecund)

Characteristics	Total	Currently using (%)	Not using# (%)
Husband			
Age (*p*=.000)			
Less than 25	67	68.7	31.3
25-39	583	81.3	18.7
40 and above	496	91.3	8.7
Division (*p*=.000)			
Barisal	92	94.6	5.4
Chittagong	196	82.1	17.9
Dhaka	303	79.2	20.8
Khulna	206	89.3	10.7
Rajshahi	266	91.0	9.0
Sylhet	83	71.1	28.9
Area of residence (*p*=.498)			
Urban	372	83.9	16.1
Rural	774	85.4	14.6
Education (*p*=.001)			
No education	360	78.9	21.1
Primary	327	85.9	14.1
Secondary	281	87.9	12.1
Higher	178	90.4	9.6
Religion (*p*=.679)			
Islam	966	85.1	14.9
Other	180	83.9	16.1
No. of living children (*p*=.000)			
0	83	38.6	61.4
1-2	505	86.1	13.9
3-4	387	92.5	7.5
5 and above	171	86.5	13.5
Access to newspaper (*p*=.001)			
No	800	82.5	17.5
Yes	346	90.5	9.5
Access to TV (*p*=.190)			
No	452	83.2	16.8
Yes	694	86.0	14.0
Access to radio (*p*=.002)			
No	528	81.4	18.6
Yes	618	87.9	12.1
Respondent approves FP (*p*=.000)			
Yes	1026	89.3	10.7
No	120	47.5	52.5

...Contd...

Table A2 (continued)

Characteristics	Total	Currently using (%)	Not using# (%)
Husband's occupation (*p*=.122)			
Unemployed	44	81.8	18.2
Professional/technical/managerial	391	88.5	11.5
Agriculture self-employed	269	85.9	14.1
Agriculture employed	77	80.5	19.5
Skilled manual	148	81.1	18.9
Unskilled manual	217	82.0	18.0
Wife			
Age (*p*=.000)			
Less than 20	167	64.1	35.9
20-34	667	86.5	13.5
35 and above	312	92.6	7.4
Education (*p*=.059)			
No education	433	84.3	15.7
Primary	326	81.6	18.4
Secondary	313	87.5	12.5
Higher	74	91.9	8.1
Wife approves FP (*p*=.000)			
Yes	1114	86.1	13.9
No	32	43.8	56.3
Couple			
Marital duration (*p*=.000)			
Less than 5	201	69.7	30.3
5-10	235	81.3	18.7
11 and above	710	90.4	9.6
Couple education (*p*=.001)			
Both illiterate	237	81.0	19.0
Only husband educated	196	88.3	11.7
Only wife educated	123	74.8	25.2
Both educated	590	87.5	12.5
Couple approval of FP (*p*=.000)			
None approves	27	37.0	63.0
Either of them approves	98	52.0	48.0
Both approve	1021	89.3	10.7
Discussion of FP with partner (*p*=.000)			
Yes	661	90.5	9.5
No	485	77.3	22.7
Total	1146	84.9	15.1

# including lactational amenorrhea, which is practiced by none among the couples within the sample

Note 1: Rows sum to 100%.

Note 2: *p*-values are based on chi-square tests.

Table A3 Type of method use by demographic and socio-economic characteristics of husbands, wives and couples

Characteristics	Total	Female method (%)	Male method (%)
Husband			
Age (*p*=.0001)			
Less than 25	46	80.4	19.6
25-39	364	79.7	20.3
40 and above	229	57.2	42.8
Division (*p*=.012)			
Barisal	59	79.7	20.3
Chittagong	111	74.8	25.2
Dhaka	159	69.8	30.2
Khulna	125	61.6	38.4
Rajshahi	138	79.7	20.3
Sylhet	47	63.8	36.2
Area of residence (*p*=.003)			
Urban	205	63.9	36.1
Rural	434	75.3	24.7
Education (*p*=.0001)			
No education	182	81.3	18.7
Primary	174	78.7	21.3
Secondary	171	71.9	28.1
Higher	112	44.6	55.4
No. of living children (*p*=.0001)			
0	32	46.9	53.1
1-2	325	78.2	21.8
3-4	188	68.6	31.4
5 and above	94	63.8	36.2
Husband's occupation (*p*=.104)			
Unemployed	26	73.1	26.9
Professional/technical/managerial	215	64.2	35.8
Agriculture self-employed	152	76.3	23.7
Agriculture employed	50	76.0	24.0
Skilled manual	74	75.7	24.3
Unskilled manual	122	74.6	25.4

...Contd...

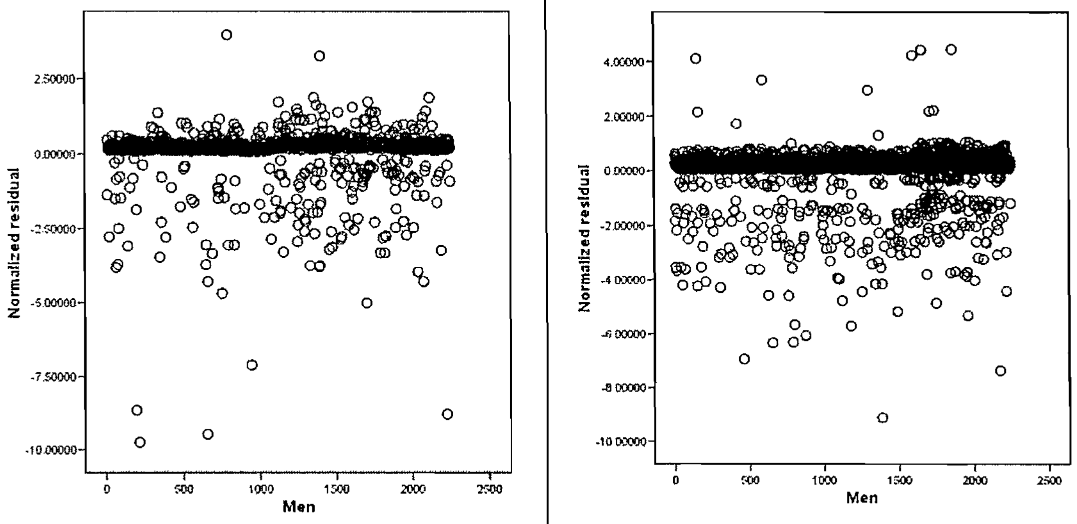
Table A3 (continued)

Characteristics	Total	Female method (%)	Male method (%)
Wife			
Age (*p*=.0001)			
Less than 20	106	79.2	20.8
20-34	416	77.6	22.4
35 and above	117	43.6	56.4
Education (*p*=.0001)			
No education	216	80.1	19.9
Primary	181	74.0	26.0
Secondary	188	68.6	31.4
Higher	54	40.7	59.3
Wife approves FP (*p*=.0001)			
Yes	628	72.6	27.4
No	11	18.2	81.8
Couple			
FP decision (*p*=.0001)			
Mainly by wife	107	87.9	12.1
Mainly by husband	72	43.1	56.9
Joint decision	460	72.4	27.6
Discussion of FP with partner (*p*=.002)			
Yes	445	75.3	24.7
No	194	63.4	36.6
Total	639	71.7	28.3

Note 1: Rows sum to 100%.
Note 2: *p*-values are based on chi-square tests.

Appendix B

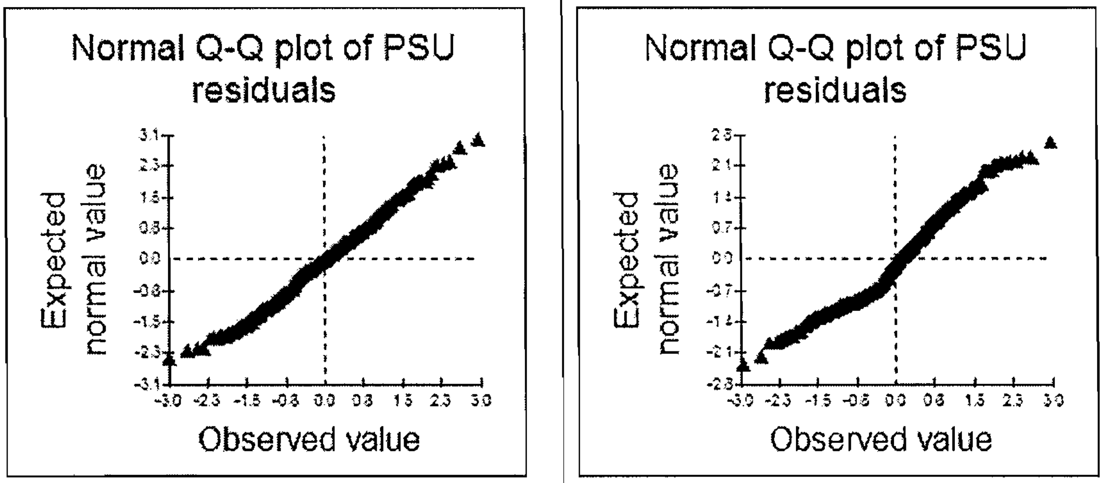
Fig B1 Normalized residuals plotted against individual case number



Acceptable plot (N=1146)

Unacceptable plot (N=2249)

Fig B2 Normal Q-Q plot of PSU (second level) residual



Acceptable plot

Unacceptable plot