MALE INVOLVEMENT IN FAMILY PLANNING: AN ANALYSIS BASED ON NFHS
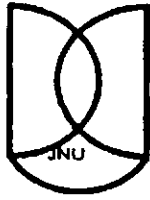
Dissertation submitted to the Jawaharlal Nehru University
in partial fulfilment of the requirements
for the award of the degree of
MASTER OF PHILOSOPHY

UJJAYINI GHOSH

CENTRE FOR THE STUDY OF REGIONAL DEVELOPMENT
SCHOOL OF SOCIAL SCIENCES
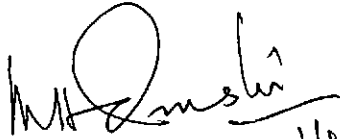JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI -110067
INDIA
1999

JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI – 110 067

Centre for the Study of Regional Development
School Of Social Sciences

CERTIFICATE

This is to certify that the dissertation entitled **"MALE INVOLVEMENT IN FAMILY PLANNING : AN ANALYSIS BASED ON NFHS"** submitted by **MS. UJJAYINI GHOSH** in partial fulfillment of six credits out of total requirements of twenty four credits for the degree of **Master of Philosophy** of the University is to the best of my knowledge a bonafide work and may be placed before examiners for evaluation.

PROF. M.H. QURESHI
CHAIRPERSON

DR. MURALIDHAR VEMURI
SUPERVISOR

ACKNOWLEDGEMENTS

NEW DELHI
JULY, 1999

UJJAYINI GHOSH

CONTENTS

LIST OF TABLES AND FIGURES

CHAPTER-1
INTRODUCTION

Globally, responsibility for fertility regulation rested on women. Males have not shared equally with their female counterparts the responsibility for contraception. Though methods of controlling male fertility have been known for centuries, statistical evidence from both developed and developing world reveals that methods those need men's cooperation (i.e. vasectomy, condom, withdrawal and periodic abstinence) are much less used compared to female oriented methods. In developing countries approximately 4 percent report using condoms and 4 percent, vasectomy. 4 percent of the women have reported using withdrawal and 3 percent use periodic abstinence. Among the developed countries, use of modern male methods (condom and vasectomy) are comparatively high in Japan (46 percent condom), United States (13 percent each in condom and vasectomy), Canada (10 percent condom and 16 percent vasectomy) and New Zealand (12 percent condom and 18 percent vasectomy). (Population Reports, 1998). These data also shows that barring Japan, substantial differences exist between the use of male and female oriented methods.

The social science research on this subject has pointed out several probable reasons for the lower magnitude involvement of men in family planning. A reason for low involvement by males in family planning is the existence of a worldwide female-bias in the family planning programmes. Family planning programmes traditionally have focused on women as the primary beneficiaries of the service provided. The reasons are: *"Women bear the risk and burden of pregnancy and child bearing; most modern contraceptives are for women; and many providers have assumed that women have the greatest stake and interest, in protecting their own reproductive health. Some programes have neglected men because they assumed men are indifferent or opposed to family planning"* (Population Reports, 1998, pg.3)

Limited contraceptive choice for men has been identified as another reason for the comparatively lower involvement of males in family planning (Ringhaim, 1993). Among the currently available male methods, condom, withdrawal and periodic abstinence are coitus-dependent methods. The only coitus-independent method vasectomy, a non-reversible method, is not popular among most of the males. As a result, none of these male methods enjoys wide widespread, spread acceptability compared to the female methods. Studies on the attitude

of males regarding contraception have revealed that a majority believe men should assume the responsibility for birth control with their wives. However, in reality a smaller proportion of men in most countries are actually using it(Davidson et. al., 1985, Posner and Mbodji, 1989, Mcginn et. al., 1989). Men have expressed a willingness to use methods that are yet hypothetical, such as pill for men (Davidson et. al., 1985). While men are interested in sharing responsibilities of fertility regulation they are not satisfied with the existing male method.

Although, men's participation in family-planning have received periodic attention in last 20 years, due to the above mentioned reasons in most countries it remained neglected and unintegrated with the country's health care system. India is no exception.

1.1 NEW FOCUS ON MEN

The new focus on men did not come as a sudden change in the perspective of reproductive health. On the contrary, it was more of an evolution of ideas. Family planning programmes increasingly have realised that, neglecting men and their reproductive health has adverse effects not only on men alone but also on women and their families. There are several reasons for which men need attention.

3

(1) In many cultures males make decisions that affect women's reproductive health as well as his own. Husband's lack of knowledge and disapproval of family planning have been cited as a major reason for non-use of contraceptives by women in many countries. Men who are educated about reproductive health issues are more likely to support their partners in decisions on contraceptive use, family planning, better health care during pregnancy and may provide emergency obstetric service if required (Grady et. al., 1996).

(2) There is a growing concern about spread of RTI, STD and HIV/AIDS, which once again brings men in the focus. There are evidence of ill effects of some men's risky sexual behaviour on the health of women and children (Riely, 1997).

(3) There is an increasing awareness among social-science researchers that 'gender', 'men's and women's differing social roles and the powers associated with those roles (Population Reports, 1998, pg.3), affects sexual behaviour, reproductive decision-making and reproductive health not only in individual and couple-level but also in a broader social level. In developing countries particularly, men are often called 'Gatekeepers' because of the many powerful roles they play in society as husbands, fathers, religious leaders, doctors, policy-makers, local

and national leaders (Wegner, 1998). Thus, educating men on the need of reproductive health for their own benefit and for their families can bring about positive changes in societal norms regarding reproductive health care.

Both the 1994 International Conference on Population and Development in Cairo and the 1995 fourth World Conference on Women in Beijing recognised the need of reproductive health services that include men. The ICPD Programme of Action urges all countries to provide men as well as women with reproductive health care that is "accessible, affordable, acceptable and convenient". It has encourages reproductive Health Care Programmes to move away from considering men and women separately and to adopt a more holistic approach that includes men (United Nations, 1995).

The movement to involve males in reproductive health has many names, including *men's participation, men's responsibility, male motivation, male involvement, men as partners* and *men and reproductive health.* Whatever the term used, the purpose is to describe a complex process of social and behavioural change that is needed for men to play more responsible roles in reproductive health (population Reports, 1998).

5

1.3 MALE INVOLVEMENT IN FAMILY PLANNING: INDIAN SITUATION

In India, the responsibility for fertility regulation remained mainly on women. Except in 70's, when vasectomy as a method of family planning was adopted by the Government to restrict the population growth in the country, females remained the primary acceptors of family planning methods. Contraceptive Prevalence Rate show an overwhelming bias toward female methods (Table 1). According to National Family Health Survey, 1992, only 9.8 percent currently married women of 15-49 age group have reported current use of male methods of contraceptive as against 30.6 percent, who have reported using a female method. It means only 1/3rd of the current users of contraceptive are relying on male methods (Fig. 1). If we consider only modern contraceptive methods, female bias in contraceptive acceptance become even more prominent. Of the total current users of modern contraceptive methods, 84.06 percent are relying on female methods as compared to 15.94 percent who have reported using a male modern method (fig. 2).

Table 1.1 : Current Use of Contraception by Residence India

| | Percentage Distribution of Currently-Married Women (13-49) Reported Current Use of Contraception | | | | | | | | | | | | |
| | Any Method | Female Methods | | | | Total Female Methods | Male Methods | | | | Total | | |
		Pill	IUD	Female Sterilisation	Other Methods		Condom	Male Sterilisation	Periodic abstinence	Withd rawal	Male Methods	Modern Male Methods	Traditional Male Methods
Total	40.6	1.2	1.9	27.3	0.2	30.6	2.4	3.4	2.6	1.4	9.8	5.8	4.0
Rural	36.9	0.9	1.2	26.3	0.2	28.6	1.2	3.5	2.3	1.2	8.2	4.7	3.5
Urban	51.0	1.9	3.9	30.4	0.2	36.4	5.8	3.2	3.5	2.1	14.6	9.0	5.6

Source : National Family Health Survey, 1992-93, IIPS, Mumbai

Figure 1 : Use of Female Methods Vs Male Methods Among Current Users : India

In %

	Total	Rural	Urban
Using Female methods	75.37	77.5	71.37
Using Male Methods	24.63	22.5	28.63

■ Using Female methods ■ Using Male Methods
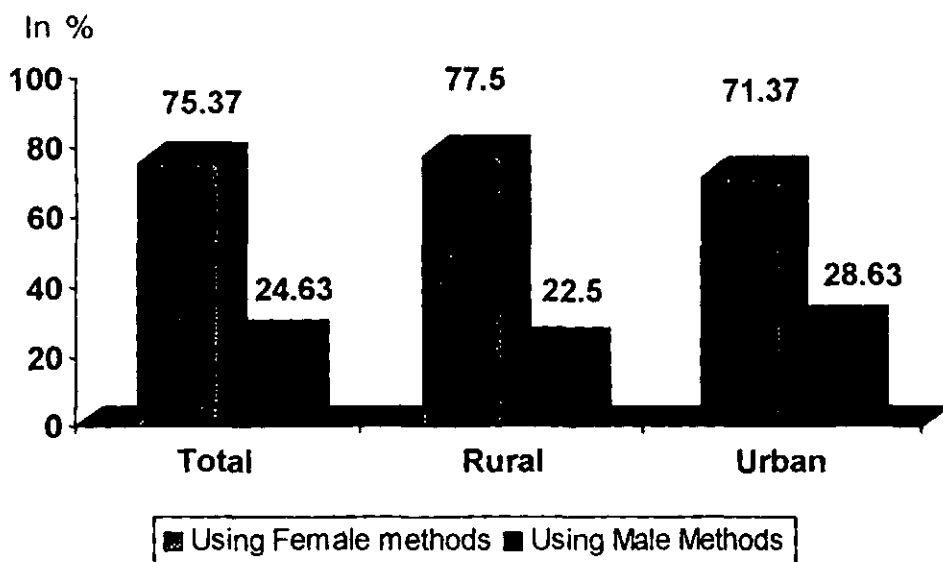
Figure 2 : Use of Modern Female Methods Vs Modern Male Methods Among Current Users : India

In %

	Total	Rural	Urban
Using Female modern methods	84.06	83.88	80.17
Using Male modern Methods	15.94	14.12	19.83

■ Using Female modern methods ■ Using Male modern Methods

8
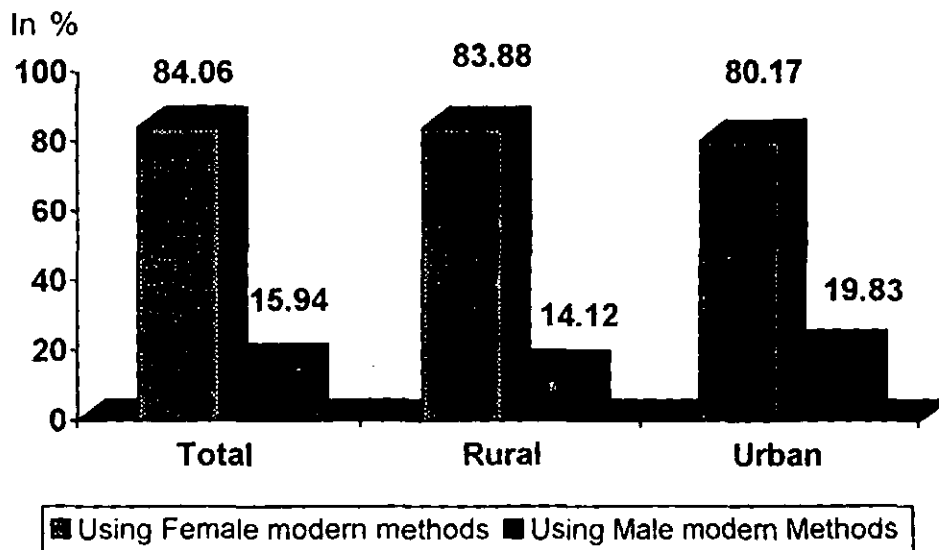
In rural areas of India acceptance of male methods in even lower. 8.2 percent of the respondents in rural area have reported use of male methods compared to 14.6 percent in urban areas. Modern male methods are used by 4.7 percent in rural areas compared to 9 percent in urban areas. Variation in male involvement also exists across states of India, as well as across socio economic characteristics of the users.

Not only uses of male methods are low in India, disapproval of family planning is higher among males than females. 18.5 percent of the currently married women have reported disapproval of family planning by their husbands compared to 12.8 percent, who have reported their own disapproval (NFHS, 1992). Study by Khan and Patel (1996) in rural area of Agra district (U.P), in which males were asked about their views on family planning and reproduction, marginally lower (15 percent) level of disapproval by husbands have been noticed. But majorities (56 percent) have reported approval of family planning only after having two children. Approval or disapproval of family planning by husband effects not only use of male methods but overall contraceptive acceptance too. 52 percent of the males in Khan and Patel's study have reported that all decisions related to reproduction and family planning are taken by husbands alone.

Communication with partner regarding family planning issues, which has been identified as one of the important facet of male involvement in family planning, is also lacking in India. 49.4 percent of the women have never discussed family planning with their partners (NFHS, 1992).

1.4 STATEMENT OF THE PROBLEM

The above section reveals that the state of male involvement in family planning in India is not encouraging. The low level of male involvement in family planning has a serious implication on reproductive health situation of couples as well as general population problem of India.

Male being the prime decision-maker on issues regarding reproduction and fertility regulation, their indifference, ignorance and disapproval of family planning can lead to many unwanted pregnancies and child births. There exists an unmet need for family-planning for both spacing (11.0 percent) and limiting (8.0 percent). Involvement of more males in family planning will not only restrict unplanned births but will also reduce high prevalence of maternal mortality associated with unplanned and risky child bearing.

Secondly, increasing incidences of RTI, STD and HIV/AIDS in India have made it clear that males need to take more responsibility regarding their sexual behaviour. WHO estimated that about 4 million people in India are living with HIV, which makes India the country with the largest number of HIV-infected people in the world. Of the 5204 reported AIDS cases in India up to March, 1998, 74.15 percent had heterosexual transmission. Most of the reported cases in India are males and male female ratio is 3:1 (NACO, 1998). Since early nineties the AIDS scenario has become particularly alarming as the epidemic is spreading from urban to rural areas and from high risk behaviour groups to general population mainly through heterosexual contact. The infection of HIV with STD and tuberculosis, both widely prevalent in India can be a public health hazard if timely action is not taken (NFHS, 1992).

In the light of the above mentioned issues the low involvement of males in family planning specially inadequate use of male methods of contraceptives emerges as a serious matter of concern. In this study we analyse the data collected by National Family health Survey, 1992 to examine the male involvement in family planning in India.

1.5 OBJECTIVE OF THE STUDY

Objectives of the present study are as follows:

- To assess the extent of male involvement in family planning which include the use of male methods of contraceptives (condom, male-sterilisation, periodic abstinence and withdrawal) in states of India.

- To identify the factors that influence the variation in the use of male methods in selected states.

1.6 SELECTION OF THE STATES

As mentioned above the male involvement in family planning in India is low. The data for the country does not reveal the variation in male involvement in major states of the country. Our interest in selection of states is to consider a better and a poor performing states in terms of male involvement in family planning and to present the north south dichotomy. Dyson and Moore (1983) have pointed out that as far as reproduction is concerned there exists a clear north south dichotomy among the major states of India.

Table 2 presents the distribution of the use of male methods of contraceptives across major states of India. A complex picture emerges if methods are taken separately and ranked.

12

Table 1.2 : Current Use of Male-Methods of Contraceptives by Major Indian States

Major States	Percent distribution of currently-married women (13-49 reporting current use of male-methods						
	Condom	Male Sterilisation	Periodic Abstinence	Withdrawal	Total Male Methods	Total Modern Male Methods	Total Traditional Male Methods
	a	b	c	d	e = a+b+c+d	f =a+b	g =c+d
Andhra Pradesh	0.7 (14)	6.6 (1)	0.3 (15)	-- (15)	7.6 (9)	7.3 (5)	0.3 (15)
Assam	1.7 (9)	2.3 (11)	15.7 (1)	6.3 (2)	26.0 (1)	4.0 (10)	22.0 (1)
Bihar	1.3 (12)	1.3 (15)	0.9 (10)	0.5 (8)	4.0 (15)	2.6 (15)	1.4 (9)
Gujarat	1.8 (8)	3.5 (7)	1.7 (6)	0.7 (7)	7.7 (8)	5.3 (8)	2.4 (7)
Haryana	5.2 (2)	5.0 (5)	2.2 (5)	3.0 (3)	15.4 (5)	10.2 (2)	5.2 (5)
Karnataka	1.2 (13)	1.5 (13)	1.5 (7)	0.1 (12)	4.3 (14)	2.7 (14)	1.6 (8)
Kerala	2.9 (4)	6.5 (2)	6.0 (3)	2.9 (4)	18.3 (4)	9.4 (3)	8.9 (3)
Madhya Pradesh	2.2 (6)	5.1 (4)	0.7 (13)	0.1 (12)	8.1 (7)	7.3 (5)	0.8 (14)
Maharashtra	2.5 (5)	6.2 (3)	1.1 (9)	0.1 (12)	9.9 (6)	8.7 (4)	1.2 (10)
Orissa	0.6 (15)	3.4 (8)	0.9 (10)	0.3 (10)	5.2 (12)	4.0 (10)	1.2 (10)
Punjab	8.9 (1)	2.5 (9)	4.4 (4)	2.9 (4)	18.7 (3)	11.4 (1)	7.3 (4)
Rajasthan	1.5 (11)	2.4 (10)	0.4 (14)	0.4 -(9)	4.7 (13)	3.9 (12)	0.8 (13)
Tamil Nadu	1.6 (10)	2.0 (12)	1.4 (8)	2.6 (6)	7.6 (9)	3.6 (13)	4.0 (6)
Uttar Pradesh	3.2 (3)	1.4 (14)	0.9 (10)	0.2 (11)	5.7 (11)	4.6 (9)	1.1 (12)
West-Bengal	1.9 (7)	4.3 (6)	11.3 (2)	8.3 (1)	25.8 (2)	6.2 (7)	19.6 (2)
India	2.4	3.4	2.6	1.4	9.8	5.8	4.0

Note: Number in parenthesis are rank of States   Source : National Family Health Survey, 1992-93

When all the male contraceptive methods (i.e. condom, male-sterilisation, periodic abstinence and withdrawal) are considered, Assam, West-Bengal, Punjab and Kerala emerge as the 1st four top ranking states. Bihar (15th) Karnataka (14th), Rajasthan (13th) and Orissa (12th) on the other hand, appear as the four lowest ranking states.

When we consider more effective modern male methods (i.e. condom and vasectomy), Assam and West-Bengal assume 10th and 7th positions among the 15 major Indian states. The states that are in the first four positions are Punjab, Haryana, Kerala and Maharashtra. Bihar and Karnataka continue to be in 15th and 14th position respectively in case of modern male methods. Rajasthan moves from 13th to 12th position, whereas Tamil Nadu acquires the 13th position.

Among the male modern methods, if we consider only condom use the top positions remain mostly undisturbed as mentioned in the above paragraph except for Uttar Pradesh which is placed in 3rd position displacing Kerala to 4th position. Among the poor performing states, Bihar and Karnataka remain in 12th and 13th position, while the two lowest ranks are taken by Andhra Pradesh (14th) and Orissa (15th).

For male sterilisation, a completely different picture emerges. Andhra Pradesh ranks first among the 15 major states followed by Kerala, Maharashtra and Madhya Pradesh. Bihar (15th) and Karnataka (13th) continue to be among the four poor performing states.

In case of traditional methods, Assam (22 percent) and West-Bengal (19.6 percent) secure the first two positions with a very high proportion of females reporting the two traditional male methods. The 3rd and 4th positions are taken by Kerala (8.9 percent) and Punjab (7.3 percent) respectively.

From the above analysis of distributional aspects of male methods of contraceptives it becomes clear that the performance of Kerala and Punjab in most of the male methods remained more consistent than other states. Though Assam and West-Bengal emerge as the two top ranking states in total male methods, it is primarily due to the prevalence of less effective traditional methods in these states. In modern male methods as well as in condom use, Haryana secures 2nd position next to Punjab. The difference in proportion using modern male methods between Punjab and Haryana is marginal (1.2 percent).

Similarly, in male-sterilisation though Andhra Pradesh tops the list, the difference between proportion using male sterilisation in Kerala and Andhra Pradesh remain even smaller (0.1 percent). Thus, in the selection of two top ranking states, Punjab and Kerala have been favoured over Haryana and Andhra Pradesh. The selection of Punjab and Kerala as top ranking states also confirm the rationale to select one state each from the North and South Indian states.

Selection of two poor-performing states in use of male methods has been comparatively easier. Bihar and Karnataka emerge as the poor performers in most of the male methods concerned including total male methods, total modern male methods as well as in use of condom and male sterilisation. Though their respective positions slightly changed from one method to another, these two states remained among the four lowest performing states.

Thus, the four states selected for the present study are *Punjab* and *Bihar* from North Indian states and *Kerala* and *Karnataka* from South Indian states. Whereas in Punjab and Kerala, the male involvement is comparatively better, in Bihar and Karnataka it is comparatively poor.

1.7 ORGANISATION OF THE CHAPTERS

For this study first we have reviewed the available literature on various demographic, social, economic and behavioural characteristics which are related to male involvement in family planning in chapter II. The conceptual framework for the study of male involvement in family planning and the methodology adopted for the study have been discussed in chapter III. In chapter IV, the determinants of the use of male methods of contraceptives are examined using statistical technique. In chapter V major findings have been summarised and on the basis of the findings some policies have been recommended to increase the level of male involvement in family planning in India.

CHPATER 2

REVIEW OF LITERATURE

The literature on male involvement in family planning and other related issues has identified several factors that influence the male involvement. The literature also contains discussion on the required conditions that enhance active participation of men in this process. In the following sections we present the review of relevant literature on this topic.

Among the factors that affect male involvement some are related to the *background* of the contraceptive users, whereas, others are *behavioural* in nature. Background characteristics can be classified into (a) *demographic* (b) *social* and (c) *economic* characteristics.

2.1   BACKGROUND CHARACTERISTICS

2.1.1 Demographic Characteristics

2.2.1.1 Age of husband

The literature on male methods of contraception has identified age as one of the important factors in the choice of contraception for men. Ringheim's (1993) study, based on review of 20 years history of social-

science research in male contraceptive methods has mentioned stages of reproductive life of a man as an important determining factor for the method he would adopt. Men who are in their youth may not prefer a non-reversible method even though they have attained the desired family size.

Age does not only determine the choice between spacing and limiting methods, it probably influences men's choice for traditional methods too. Withdrawal, for example, is strongly influenced by age of the users. Goldberg and Toros (1994) in their study of the couples in Turkey have mentioned the existence of a typical U-shaped curve, signifying higher prevalence of withdrawal occurring among adolescents and old couples.

The study on withdrawal by Rogow and Horowitz (1995) is similar to Goldberg and Toros(1994). They noticed high rates of reporting of withdrawal by adolescents, particularly at the beginning of sexual relationships in Turkey, Spain and United States. On the other hand, in countries that report relatively high use of withdrawal, such as Turkey, France, Hungary, Zimbabwe and Brazil, the use of withdrawal increases with age.

2.1.1.2 Residence of husband

Studies on contraceptive prevalence have indicated strong influence of the user's residence on rate of acceptance (Jain, 1985, Brackelt et. al., 1978). In developing countries contraceptive prevalance rate is generally higher in urban areas than in rural areas. Urban residence positively influences male involvement in family planning. In their study based on Zimbabwe Male Fertility Survey, Mbizvo and Adamchak (1991) found a high correlation between urban residence and family size. A representative sample of 711 currently married men aged 20 and above were asked about knowledge of family planning, attitude towards family planning including couple communication decision-making, family-size preference and ever use of contraceptives.

In a study based on 1129 husbands surveyed in Kenya Demographic and Health Survey, 1989 Omondi-Odhiambo also found a higher correlation between residence and contraceptive use. A statistical exercise was carried out to understand the role of different factors in determining current use of contraception. The result reveals that urban residence exerts a strong positive direct effect on use whereas, the indirect effect of residence is negative and operates through husband's current occupation, education, age at marriage, parity, couple communication and desire for children. A negative relationship indicates that rural residents were also likely to use contraception if they possess the above mentioned characteristics.

Urban residence also directly influences contraceptive use of men by facilitating procurement of methods and providing relevant information regarding use. This has been found particularly important in case of condom use. Khan and Patel (1995) interviewed 517 men and 317 women in rural areas of Agra district (Uttar Pradesh) and have listed reasons for low use of condom. Unawareness of the method, non-availability in the villages and storing/disposal problems have been reported by 21 percent, 15 percent and 12 percent of the respondents respectively. Guruswamy and Surinder (1997) in their study on conventional contraceptives based on NFHS, 1992-93 data, have also pointed out similar reasons for low use of condom in rural areas.

2.1.2 Social Characteristics

TH- 8212

2.1.2.1 Religion

Religion also influences male involvement in family planning. Perception of ideal family size often depends upon socio-cultural norms, which is shaped by couples' religious affiliation. A study on reproductive motivation and family-size preference among Nigerian men by Uche C. Isugo-Abanihe (1994) showed influence of religion on

ideal and desired family size preference of men. Catholic men were slightly less than two times and Protestants were more than two times more likely to prefer smaller family than Muslims and Indigenous men.

Religion also influences men's approval of family planning. Posner and Mbodji (1989) examined men's attitude about family planning in Senegal and found that even the highly educateds are uncertain about the position of Islam regarding fertility control. Religion has been mentioned as a reason for rejecting use of contraception.

Religion also strongly influences the method to be adopted by the couple to restrict family size. Ringheim (1993) mentioned that religious leaders, particularly in the Muslim world are the key figures influencing whether male methods are to be used. Some methods are preferred in a religion compared to others. Rogow and Horowitz (1993) indicated that Prophet Mohammand's approval of withdrawal method has influenced the use of this method in many Muslim countries including Turkey.

Cadwell and Cadwell's (1925) study on the role of traditional fertility regulation in Sri Lanka revealed widespread use of rhythm method among the Christians. A Majority of the respondents in this study have indicated 'church' as the source of knowledge regarding the method.

2.1.2.2   Educational level of husband

Among the socio demographic variables education of men has been identified in the literature as one of the most important factors. Studies have indicated a positive relationship between education of men and contraceptive attitude as well as family-size preference.

The study by Isiugo-Abanihe (1994) on Nigeria indicates an inverse relationship between higher education of men and desired family size. Men with university education have reported desire of three fewer children compared to those with no formal education. Higher perceived cost of child rearing of an educated man acts as a deterrent for large family preference.

Education of husband plays a vital role in couple's contraceptive acceptance. Using quantitative evidence from Ghana Demographic and Health Survey, Ezah A. C. (1993) indicated a strong positive influence of husband's education on wife's contraceptive attitude. The logit model used to measure wife's contraceptive attitude by her own and husband's fertility preference shows that wife's contraceptive attitude does not only depends on her own education level alone but also on her husband's level of education too. Being married to an educated husband increases a women's approval of family planning regardless of her own level of education. But husband's contraceptive attitude remains unaffected by wife's fertility preference and level of education.

Education also alters men's attitude toward contraceptive decision making and contraceptive responsibility. A study (Mbizvo and Adamchak, 1991) based on Zimbabwe Male Fertility Survey revealed a strong relationship between husband's educational level and decision making power. A majority of educated men feel that decisions regarding use of family planning should be taken by both husband and wife jointly. Less educated men on the other hand, have indicated that only husbands should decide.

An educated man is more likely to use a male method himself than his illiterate counterpart, because his choice of contraceptive is based on higher level of information relevant to the method. In Guatemala a positive impact of education on vasectomy acceptors was observed by Santisgo et. al., (1983). Of the 872 men and 1259 women surveyed, vasectomy has found to appeal the educated men, whereas tubectomy acceptors lacked education. Satisfaction regarding sterilisation was also found to be associated with higher educational level of the acceptors.

2.1.3 Economic Characteristics

2.1.3.1   Economic responsibility for children

Economic consideration has also been identified as an important factor for the males to opt for smaller family and contraception. Peterson (1969) has suggested that contraception, specially withdrawal is more likely to be used in a nuclear family, because financial responsibility for children rests with the father rather than being shared by the extended family. A similar view has been expressed by Santow (1993), who mentioned   concentration of resources in children as a reason for the use of coitus-interruptus in the twentieth century.

Cadwell and Cadwell's (1987) study on traditional fertility regulation in Sri Lanka has indicated that higher cost of rearing children due to economic depression in 1930's and prevalence of plantation economy which need lesser manpower brought changes in attitude towards family size preference. The rhythm and withdrawal were practiced widely in Sri Lanka as modern methods were not available.

2.1.3.2   Occupation of husband

Occupation of a man reflects living standard of his family as well a:
his perception regarding cost of child-rearing. Occupation of a mar
has been found to have a strong relationship with male involvement ir
family planning.

Karra et al., (1997) examined male involvement in five generation of ɛ
south Indian family and found change in occupation in particular
influences male contraceptive use. Economic pressure forced men ir
the older generations to move from land ownership to private anc
public sector employment. Higher education required to enter in non
primary sector significantly contributed to men's desire for smallei
families.

Husband's current occupation is found to influence couple's
contraceptive behaviour. In Kenya a direct positive effect of husband's
current occupation has been demonstrated by Odhiambo (1997).
Husbands involved in higher status jobs were more likely to use and
support their wives to use contraceptive than those involved in lowei
status jobs.

A survey of men's attitude regarding family planning in Senegal (Posner and Mbodji, 1989) also revealed higher use of contraception by men employed in high profile jobs. Similar findings had been indicated by Santisgo et. al., (1983) in a study on voluntary sterilisation acceptors of Guatemala.

2.2 BEHAVIOURAL CHARACTERISTICS

2.2.1 Approval of Family Planning by Husband

Approval of family planning is a prerequisite to accept contraception. Several studies on male involvement in family-planning have revealed that husband's approval of family planning is strongly correlated to couples' contraceptive behaviour.

Joesaef et. al., (1988) carried out a survey in five metropolitan cities in Indonesia to analyse the impact of husband's attitude on contraceptive use of couples. The study reveals that husband's approval was the most determining factor in contraceptive use in all five cities.

A study (Mbizvo and Adamchak, 1991) in Zimbabwe indicated positive relationship between husband's approval of family planning and ever use of contraceptive by couple. The study revealed that the decision to

practice family planning is male dominated. Three fifth of the husbands have reported that they have 'major say' in deciding whether to practice family planning.

Khalifa (1988) also indicated that in urban areas of Sudan the decision to practice contraception is entirely male dominated.

Approval of family planning is also related to couple communication. Using the evidence from Jordon Husband's Fertility Survey, Warren et. al., (1990) demonstrated that approval of family planning is highly correlated with couple communication. The study shows that husbands who do not approve contraception felt no need to discuss this issue with their wives. In contrast, over half of the husbands who are approve of family planning had discussed the issue with their wives.

Approval of family planning by husbands does not always translate into use. In a study of knowledge, attitude and use of contraceptives by males in rural areas of Uttar Pradesh, Khan and Patel (1996), mentioned 'conditional approval' by the husbands. A majority (85 percent) of the males surveyed were approved of family planning but most of them (65 percent) feel it should be adopted after having two children.

2.2.2 Couple Communication

Couple communication has been identified by several literature as a crucial step toward increasing male involvement in reproductive health. McGinn et. al., (1989) suggested that couple communication accurates couples' perception regarding their partner's attitude towards family planning. In Burkina Faso interview and focus-group discussion with men and women revealed considerable misperception regarding each other's view on family planning as a result of communication-gap. The men thought that women were ignorant of family planning and opposed to it, whereas, the women had expressed similar view on men. A study on Dakar, Senegal (Posner and Mbodji, 1989) also reported lack of couple communication as the main reason behind misperception of couples regarding contraceptive approval.

Using the data from Kenya Demographic and Health Survey, Odhiambo (1997) carried out a regression analysis and found that of all variables considered, couple communication exerted the strongest positive influence on couples' current contraceptive use.

Lack of couple communication in many societies is related to male domination and the desire to keep control on reproductive process. In rural areas of Uttar Pradesh Khan and Patel (1997) found major lack of communication between spouses. The interview of 517 men

revealed that majority of them felt issues related to reproduction should not be discussed while 65 percent were of opinion that discussion on this issue should always be initiated by husbands alone.

Karra et. al.,(1997) on the other hand argued that males can be involved in family planning even in the absence of couple communication if they are motivated enough to restrict family size. They examined male involvement in five generations of a south Indian family and found that the men in older generation practiced family planning despite rare communication among couples.

2.2.3 Husband's Desire for Children

Number of children desired by husband has been identified in some of the literature as an important factor in acceptance of family planning. Bankole and singh (1998) have examined the effect of couples' fertility goal and contraceptive behaviour for eighteen countries based on DHS data. The result of the statistical analysis revealed stronger impact of husband's reproductive goal on contraceptive use than the wife's in Sub Saharan Africa and South Asia. In latin American countries the reverse situation is observed.

In a study of reproductive motivation and family size preference of Nigerian men Isiugo-abanihe (1994) demonstrated an inverse relationship between husband's higher family size desire and current contraceptive use. When husbands desire fewer children than their wives, the chances of their using a male method increases. A study of male involvement in five generations of a South Indian family (Karra et. al., 1997) also indicates similar findings. The study revealed that some husbands in the older generation wanted smaller families than their wives and with their dominant role in decision-making, restore to vasectomy without consulting or informing their wives.

In the above sections we have discussed several factors which have been identified in literature of male involvement as necessary for active participation of males in family planning. The important factors identified are related to the background of the husband and their reproductive behaviour. Among the background variables age, residence, religion, level of education and occupation of the husbands have been mentioned by several literature. Reproductive goal of husbands, approval of family planning and couple communication have been identified as important behavioural variables affecting male involvement. Based on this literature reviewed we present the conceptual framework in the next chapter.

CHAPTER 3

CONCEPTUAL FRAMEWORK AND METHODOLOGY

From the literature survey presented in the earlier chapter, it becomes clear that there exists a complex relationship between male involvement in family planning and factors that influence it. The factors, that refer to a man, are related to each other and they directly as well as indirectly influence male involvement. In the framework given in figure 3, the direct and indirect relationship between male involvement and those factors that affect it has been shown.

Contraceptive behaviour is regarded as a conscious choice on part of the acceptors. Men who are actively involved in family planning have certain characteristics in common. They must have (1) desired fewer children (2) approved family planning and (3) communicated with their partners regarding family planning.

A FRAMEWORK FOR ANALYSING MALE INVOLVEMENT IN FAMILY PLANNING

BACKGROUND CHARACTERISTICS

__Demographic__

1. Age
2. Residence

__Social__
1. Educational level
2. Religion
3. Caste

__Economic__
1. Occupation

BEHAVIOURAL TRAITS

1. Approval of family planning

2. Couple communication

3. Desire for Children

Male Involvement in Family Planning
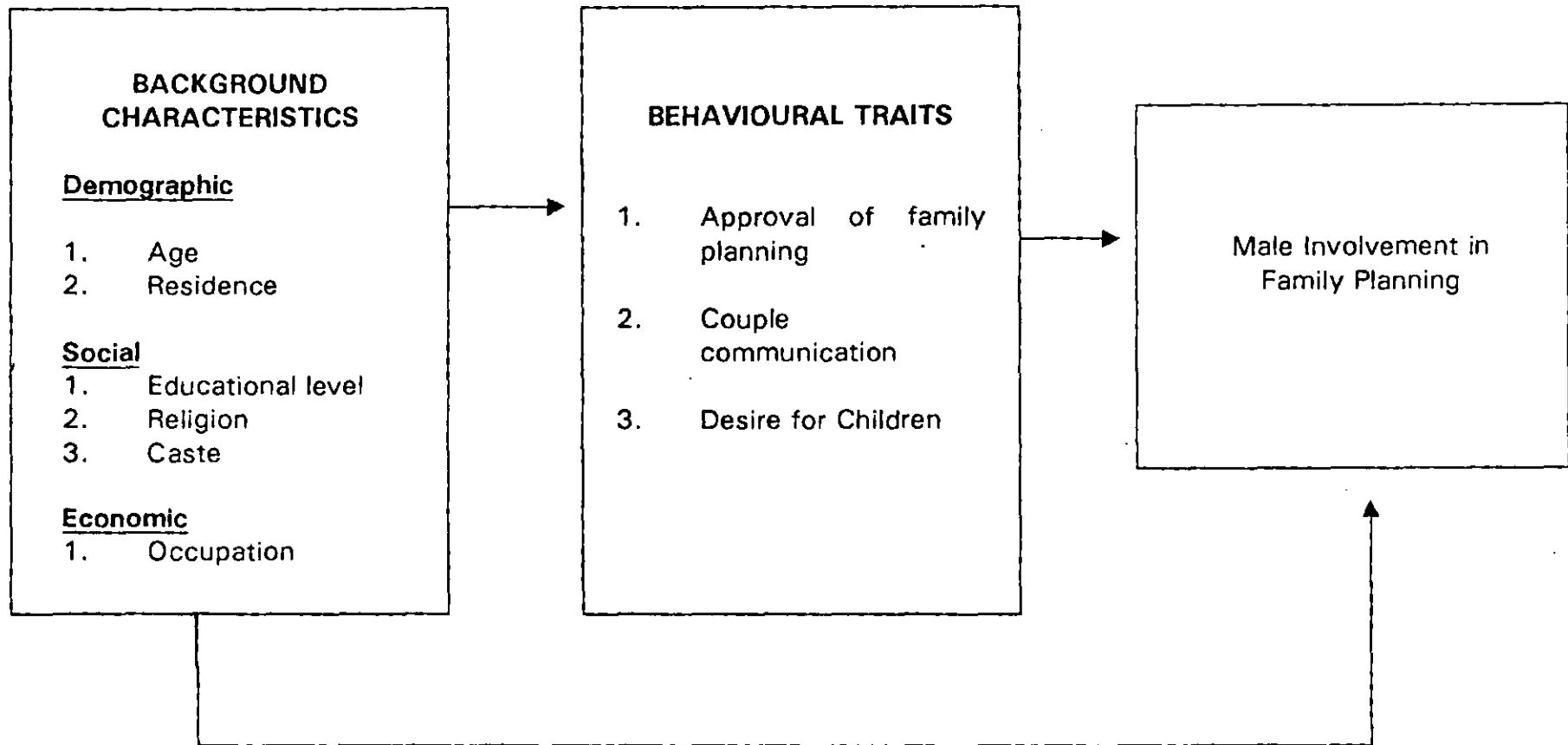
These three characteristics have been designated in this model as *Behavioural traits*, since they are directly related to the contraceptive behaviour of a man. The behavioural traits in turn are determined by a set of variables related to the background of the users. The *Background characteristics*, we consider in the model are (a) demographic (b) social and (c) economic. The Background characteristics not only operate through *Behavioural traits*, they directly influence male involvement too. Thus, behavioural traits have a direct relationship with male involvement whereas, background characteristics have both direct and indirect relationship with male involvement. In the following sections we will discuss about the manner in which these factors influence male involvement in family planning.

3.1   BACKGROUND CHARACTERISTICS

3.1.1 Demographic Characteristics

3.1.1.1 Age

Age of husband directly as well as indirectly influences male involvement in family planning. As mentioned in chapter 2 age determines the method to be adopted by men to restrict family size.

Age plays important role in the choice of terminal or spacing and even a traditional method.

Age indirectly controls male involvement too by influencing behavioual traits. With higher age approval of family planning increases as family size goals are achieved.

3.1.1.2 Residence

The direct effect of residence of husband on male involvement in family planning operates through procurement of male methods, affordability to pay and access to relevant information regarding methods. Though conventional contraceptives are distributed free of cost from family planning clinics, cultural reasons restrict men to visit those clinics (Khan et al., 1997, Guruswamy et. al., 1997). Urban men are in a better position to procure methods from commercial outlets and to access information regarding correct use of methods.

In addition to the direct effects there are also indirect effects of residence of husbands. Residence of a man influences behavioural traits as well as other background characteristics. For example, urban residence implies dependence on non-primary sector for occupation and formal education is a prerequisite to obtain that. These factors restrict reproductive goal of a man. Prevalence of nucleated families

in urban area where economic responsibility to raise children rests on father alone, also deter fertility intention of men (Peterson, 1969, Bruce and Lyod, 1992).

Residence of a man also influences his perception regarding `gender'. The family and societal pressure to stick to patriarchial role in a rural set-up negatively affects approval of family planning and interspousal communication.

3.2 SOCIAL CHARACTERISTICS

3.2.1 Education

Education of a man produces strong direct as well as indirect effect on the male involvement. An educated man is more likely to accept family planning himself than his illiterate counterpart as his choice is based on higher level of information regarding safety and effectiveness of the methods. Traditional methods need understanding and monitoring of partner's physiological state. As a result, these practices even earlier remained confined among urban and educated class. (Sinha, 1955).

Education also strongly influences the behavioural traits. Educated men want their offspring to have similar or more education than themselves. The investment required to provide education and other facilities to the offspring reduces a man's desire to have more children and increases his chance of approving family planning (Ezeh, 1991).

Education also shapes men's view on gender. Educated husbands are likely to be more egalitarian in their view on decision making regarding number of children and use of family planning (Isiugo-Abanihe, 1994). Couple communication tends to be higher among educated couples. All these factors indirectly create positive influence on male involvement in family planning.

3.2.2 Religion

Religion often influences the method to be adopted by the couple to restrict family size. Certain methods are less accepted than others. For example, sterilisation is not a popular method among Muslims and Roman Catholics (Ringheim, 1993, Caldwell et. al.,1987) Religion also determines whether a male or a female method is to be used (Ahmed, 1976).

The indirect effect of religion on male involvement is through behavioural traits. Desire for children of a husband often depends on socio-cultural norms that in turn is shaped by his religious affiliation. Religion is also an important dimension of the norms regarding 'gender'. It influences decision making power of men and his view on couple communication.

3.2.3 Caste,

Contraceptive behaviour tends to differ across social groups. Not only the cultural characteristics, its developmental level in terms of education, economic status, occupation and residence influence the need and motivation to accept contraception. Scheduled Castes in India are of the most disadvantageous social groups in India. They are mostly settled in rural areas and their developmental level in terms of education, work status and living standard is lower than the non-scheduled castes. Contraceptive use among Scheduled Castes is generally low (Jolly, K.G. 1978). NFHS, 1992 also indicates lower contraceptive prevalence among Scheduled Castes. The socio-economic characteristics of Scheduled Castes are thus expected to influence the behavioural variables negatively. Rural residence and poverty of this social group also tends to directly affect male involvement.

ECONOMIC CHARACTERISTICS

3.2.4 Occupation

Occupation of a man reflects his living standard, his ideas regarding child rearing and the perceived cost of rearing. Occupation of a man both directly and indirectly influences male involvement.

Affordability to pay for contraceptives depends on the user's economic status which is determined by his occupation. This is particularly true in case of condom in which user's satisfaction regarding the method is related to his ability to pay for better quality methods (Caldwell, 1987). Thus it can be said that men who are employed in highly paying jobs are more likely to use some of the male methods compared to others as they can afford to pay for better quality method.

Occupation of a man indirectly affects male involvement in family planning too by shaping his desire for children. In developing countries agricultural activities still need a high level of manpower. Occupation in the agricultural sector thus enhances a man's desire to have more children. On the contrary, in non-agricultural sector formal training is a prerequisite and competition to get a job is higher. The desire to have more children is reduced in this process. Men involved in non-agricultural sector are more educated and they want to ensure higher or at least similar level of education for their offspring. Cost involved in child rearing deters the intention of men to have more children and it positively influences acceptance of family planning.

In this section we have discussed both the direct and the indirect relationship of background characteristics with male involvement in family planning. We considered three characteristics: demographic, social and economic. It may be mentioned here that these three categories are influenced among themselves. For example, residence of a person often influences his educational level and occupation. Scheduled Castes in India being mainly a rural group have lower level of education and are involved in primary sector for livelihood. These characteristics often shape their behavioural traits that negatively affect male involvement. Similarly, lower involvement in family planning by Muslims in India is also influenced by their lower educational level and poor economic status rather than being affiliated to the particular religion (Shariff, 1995). However, to make the conceptual framework simple, the inter relation between background characteristics has not been shown.

3.3 BEHAVIOURAL TRAITS

3.3.1 Approval of Family Planning

Approval of family planning is a prerequisite for acceptance. A person who disapproves family planning does not use it himself and depending on his understanding of 'gender' in the society would try to influence his partner's opinion. In a male dominated society husband's approval of family planning often plays a stronger role in actual use than his wife's (Joesoef et. al., 1983, Khalifa et. al., 1989).

When a husband approves family planning but his wife disapproves, he might use a male method but the reverse may not be possible in a male dominated society. A wife may not use a female method if the husband is disapproving it. Men who approve family planning in general may themselves use male method or may help their partners to use one.

3.3.2 Couple Communication

Couple communication produces a strong positive and direct effect on male involvement. Communication between spouses on issues related to reproductive goal and family planning reduces wrong perception in couples regarding approval of family planning (Mcginn et. al., 1989).

Couple communication on family planning and reproductive goal is associated with emotional bonding between spouses which influences family size preference and family planning acceptance by allowing spouses to reconcile their differences (Bankole and Singh, 1998). Couple communication in particular plays important role in acceptance of male methods. Most of the male methods being coitus-dependent, its successful acceptance depends on spousal communication.

3.3.3 Desire for children

Husband's desire for children also directly influences male involvement. When a husband desires few children he may himself use a male method or may encourages his wife to adopt a female method. In male dominated societies a husband's desire for smaller family has more chances of actual use than that of her wife's. On the contrary, a husband who desires large family may not only refrain from using a male method but also may negatively influences the view of his wife regarding the use of contraception.

In sum, the above conceptual framework explains male involvement in family planning by considering *background characteristics* and *behavioural traits*. In this framework reverse causality has not been considered. For example, male involvement can also influence in turn, behavioural traits. Males who are involved in family planning can develop better communication with their spouses. In the next section, based on the conceptual framework a number of hypotheses have been deduced.

3.4 HYPOTHESES

From the above discussion of direct and indirect factors that affect male involvement in family planning we derive the following hypotheses.

- Male involvement in family planning increases with age of husband.

- Husbands who are based in urban areas, possess higher level of education, work in non-primary sector and belong to non-Scheduled Caste groups are more likely to be involved in family planning than those from rural areas, less educated, work in primary sector and belong to Scheduled Caste and Scheduled Tribe groups.

- Approval of family planning by husband positively influences male involvement.

- Better communication between couples lead to higher male involvement in family planning.

- Husbands those desire fewer children have higher involvement in family planning.

3.5   SOURCE OF DATA

The set of hypotheses presented above will be empirically tested using primary data. The data used for the study was collected from National Family Health Survey, 1992-93. The NFHS has gathered information from a nationally representative sample of 89,777 ever married women in the age group of 13-49 from all 24 states of India and National Capital Territory of Delhi. Three types of questionnaires were used for the survey. They are Household Questionnaire, Women's Questionnaire and Village Questionnaire.

For the present study we have used the information based on Women's Questionnaire. The Women's Questionnaire has seven sections: Respondent's Background, Reproduction, Contraception, Health and Children, Fertility Preferences, Husband's Background Characteristics and Women's Work and Height and Weight of Children.

For our purpose we have used current use of male methods of contraceptives as a dummy for male involvement in family planning. Though male involvement in family planning does includes several other activities apart from using male methods, it can be seen as involvement in family planning that needs direct cooperation of men. The data regarding current use of male methods of contraception have been collected from *Contraception* section of the Women's Questionnaire.

Information regarding husbands' background has been collected from *Women's Background* section and *Husbands Background and Work* section. Our area of interest remained the husbands of currently married women who are currently using any methods of family planning.

Information related to husband's behaviour i.e., couple communication, desire for children and approval of family planning has been collected from *Fertility Preference* section. These variables are basically wives' perception regarding husbands' behaviour.

3.6   MEASUREMENT OF VARIABLES

The measurement of response and predictor variables and the notations used to represent each of these variables are given below.

Response Variables

The response variable in this study is Male involvement in family planning which has been measured as :

(a)   Current use of male terminal methods

(b)   Current use of male spacing methods

45

For our study we are considering only modern contraceptive methods. Male spacing methods though include traditional methods like periodic abstinance and withdrawal, we have not considered those methods for analysis since the proportion of users are very less in the selected states. The states selected for the study are primarily based on their preformance in male modern methods. In female spacing methods users of pills and IUD are considered whereas male spacing method includes users of condom only.

The variables are denoted by Y_1, (for terminal) and Y_2 (for spacing) respectively and are categorized as :

Y_1 = 1 - using male terminal method

= 0 - not using male terminal method

Y_2 = 1 - using male spacing method

= 0 - not using male spacing method

Our aim is to measure male involvement in family planning in relation to female involvement. Thus, not using male spacing or male terminal method refers to using female spacing and female terminal method respectively.

Predictor Variables

The predictor variables considered for the study are of two types. Predictor variables related to the background of the husbands or *Background Variables* and variables related to the behaviour of the husbands or *Behavioural Variables*. For spacing methods we have considered both type of variables but for terminal method only Background Variables are considered as data on Behavioural Variables are not available for terminal methods. The measurement of the predictor variables considered in the study are as follows :

Background Variables   :

1.   Age of Husbands (X_1) : Age of husbands in completed years.

2.   Place of Residence (X_2) : The place of residence of husbands is classified into urban and rural areas.

X_2 =   1   -   Urban

=   0   -   Rural

3.   Educational level of husbands (X$_3$) : According to the educational level attained, the husbands are categorized as illiterates, literate but not middle school complete, middle school complete but not high schol complete, high school complete and above.

For terminal methods, illiterates are taken as reference category. For spacing methods, literates below high school complete has been taken as reference category as very few illiterates and below middle school completed have reported use of any kind of spacing methods.

X$_{3a}$	=	1	-	Literate but not Middle school complete
	=	0	-	Illiterate
X$_{3b}$	=	1	-	Middle school complete but not high school complete
	=	0	-	Illiterate
X$_{3c}$	=	1	-	High school complete and above
	=	0	-	Illiterate

4.   Region (X$_4$) : Religion of the users are classified into three categories. Hindus have been taken as reference category for Muslims and Christians.

X_{4a} = 1 - Muslims

= 0 - Hindus

X_{4b} = 1 - Christians

= 0 - Hindus

5.   Caste (X_5) : Husbands have been classified into two categories according to their castes. We consider non-SC/ST husbands as reference category.

X_5 = 1 - SC/ST husbands

= 0 - Non SC/ST husbands

6.   Occupation of Husbands (X_6) : On the basis of the occupation husbands are categorized into employed in primary sector and employed in non-primary sector. Husbands employed in primary sector are considered as reference category. Non workers are included in the reference category too.

X_6 = 1 - husbands working in non primary sector

= 0 - husbands working in primary sector

Behavioural Variables

7. Husbands' Approval (x_7) : Approval of family planning by husbands has been classified into two categories.

X_7 = 1 - Husbands disapprove of family planning

= 0 - Husbands approve of family planning

8. Couple communication (X_8) : Couples who have not communicated with their spouses on family planning are taken as reference category for those who have discussed family planning once or twice and those who have it discussed more often.

X_{8a} = 1 - Couples who have discussed family planning once or twice

= 0 - Couples who have never discussed

X_{8b} = 1 - Couples who have discussed family planning more often

= 0 - Couples who have never discussed.

9.   Husbands' Desire (X_9) : On the basis of the desire of husbands regarding number of children husbands are catgorized into two groups.

X_9 =   1   -   Husbands desire more children than their wives

      =   0   -   Husbands desire same or fewer children than their wives

3.6 LOGIT REGRESSION

In our study the response variable (use of male methods of contraceptives) is a dichotomous one. Except the age of husband, other predictor variables used for analysis are categorical in nature. The distribution of the response variable is also skewed. For this reason we could not perform a correlation analysis as most of the variables used in the study are not continuous. The nature of the data thus suggests the use of liner probability model or logistic regression model to analyse the relationship between use of male methods and the predictor variables. Since the usual process of hypothesis testing in linear probability model violates the assumptions involved in testing the models, we prefer to use logistic regression.

In logit regression model a sigmoid curve is used to fit the observed points. Since the tails of sigmoid curve level off before reaching p = O or p = 1, the probability of impossible value for p (response variable) observed in probit model is avoided. The basic form of a logistic function is

$$p = \frac{1}{1+e^{-z}} \qquad .....(1)$$

where p is estimated prob (here use of male methods of male methods of contraception) z is the predictor variable and e is the base of natural logarithm (e = 2.7183). The predictor variable has its largest effect on p when p = 0.5 and, p becomes smaller in absolute magnitude as p approaches O or 1.

The quantity P/(1-P) is called the ods and the quantity log P/(1-P)] is called logit of p. Simplyfying eqn (1) we get.

$$\log Z = \frac{p}{1-p} \qquad .... (ii)$$

or   Logit p = Z   .... (iii)

The multivariate logistic function involving k predictor variables $(X_1, X_2 .... X_k)$ is given by

$$P = \frac{1}{1 + e^{-(b_0+b_1x_1+b_2x_2+...+b_kx_k)}} \qquad (iv)$$

and logit p = $b_0+b_1x_1+b_2x_2+...+b_kx_k$ $\qquad$ (v)

The coeffficient b_i represents the additive effect of one unit change in predictor variable X_i on log odds of using male method of contraception.

The quantity e^{b_i} is called odds ratio which represents the multiplicative effect of one unit change in predictor variable X_i on the odds of using male methods of contraception. e^b [$\exp^{(b)}$] is more readily understandable than b as a measure of effect.

In the model we are including the interaction effect of predictor variables. Here interaction between predictor variables X_1 and X_2 means that the effect of X_1 on Y_1 (the response variable) depends on the level of X_2 or the effect of X_2 on Y_1 depends on level of X_1.

In the next chapter using the variables described above we present an analysis of male involvement in family planning.

CHAPTER 4

AN ANALYSIS OF MALE INVOLVEMENT IN FAMILY PLANNING IN SELECTED STATES

In this chapter we have examined male involvement in family planning in states of Punjab, Kerala, Karnataka and Bihar. As mentioned earlier (Chapter 3) we are measuring male involvement in family planning as current use of male methods of contraception in relation to current use of female methods. Male methods of contraception have been grouped as use of male terminal and male spacing methods. We first present the result of cross-tabulation of current use of male methods with the users' background characteristics and also some of the behavioural traits. The background characteristics include age of husband, residence, educational level of husband, religion, caste and occupation of husband. Among the behavioural traits we have considered approval of family planning by husbands, discussion on family planning with husband and husband's desire for children. Cross-tabulation with behavioural traits has been presented for male spacing method only. The analysis of factors that influence use of male methods of contraception is examined in the later section with the help of multivariate logistic regression model based on the conceptual framework described in Chapter 3.

Table 4.1 Distribution of Male and Female Contraceptive Methods in Selected States, 1992-93

STATES	TERMINAL METHODS			SPACING METHODS			TOTAL METHODS		
	Male Method (%)	Female Method (%)	Total No. of Cases	Male Method (%)	Female Method (%)	Total No. of Cases	Male Method (%)	Female Method (%)	Total No. of Cases
Punjab	7.2	92.7	960	50.7	49.3	495	21.9	78.1	1455
Kerala	13.5	86.5	1915	47.7	52.3˙	241	17.3	82.7	2158
Karnataka	3.6	96.4	1683	21.1	78.9	190	5.4	94.6	1873
Bihar	7.9	92.1	1090	44.0	56.0	193	13.3	86.7	1283

Source : National Family Health Survey (1992-93), IIPS, Mumbai.

4.1 Current Use of Male Methods of Contraceptives

As mentioned in chapter 1 use of male methods of contraceptives are much lower than female methods. Table 4.1 presents the distribution of male and female methods in the four selected states. In case of terminal methods a very high proportion of users have accepted female methods in all four states. Among the selected states, proportion of male terminal method users are highest (14.7 percent) in Kerala while lowest proportion (4.0 percent) of use has been reported in Karnataka. In Bihar and Punjab use of male terminal method is at the lower side. In Bihar proportion of male terminal method acceptors are marginally higher than that of Punjab.

In spacing methods male-female distribution is more even exept for Karnataka, where female methods are preferred over male methods by more than three fourth of the users. The highest proportions (50.7percent) of male spacing method users are reported in Punjab, where the proportions of users marginally exceed female spacing method users. Punjab is followed by Kerala (47.7 percent) Bihar (44 percent) and Karnataka(23.9 percent). However, the actual numbers of people using spacing methods are much smaller than that of people who are using terminal methods.

Table 4.2 Distribution of Terminal and Spacing Methods in Selected States, 1992-93

STATES	MALE METHODS			FEMALE METHODS		
	Terminal Methods (in %)	Spacing Methods (in %)	Total No. of Male Methods Users	Terminal Methods (in %)	Spacing Methods (in %)	Total No. of Female Method Users
Punjab	21.6	78.4	320	78.5	21.5	1455
Kerala	68.9	31.1	374	76.8	23.2	2158
Karnataka	60.4	39.6	10 1	86.6	13.4	1873
Bihar	50.3	49.7	171	78.2	21.8	1283

Source : National Family Health Survey (1992-93), IIPS, Mumbai.

If we see the distribution of spacing and terminal methods (Table 4.2) among male and female methods users seperately, a different picture emerges. In female methods dependence of terminal method become obvious. In Karnataka, the proportion of female sterilisation is highest among selected states. In case of male methods sterilisation continues to dominate the scene in all states except Punjab. In Punjab male terminal method has been accepted by much fewer men than male spacing method. Even in other states dependence on male sterilisation is lesser when compared to female methods.

4.1.1 Socio-economic and Demographic Background of Male Contraceptive Users

Current uses of male methods differ accross socio-economic and demographic characteristics of the users. User's characteristics are also not similar for spacing and terminal methods. Table 4.3 and Table 4.4 present the distribution of male and female terminal and spacing methods according to selected Background and Behavioural Characteristic of the husbands.

Table 4.3 Percentage Distribution of Male and Female Terminal Method Users by Selected Background Characteristics of the Husbands, 1992-93

STATE	PUNJAB			KERALA			KARNATAKA			BIHAR		
Background Characterestics	Male method	Female method	Total no. of cases	Male method	Female method	Total no. of cases	Male method	Female method	Total no. of cases	Male method	Female method	Total no. of cases
Husband's age in years												
Less than 35	3.5	96.5	256	3.4	96.6	444	0.2	99.8	522	3.7	96.3	327
36-45	6.1	93.9	450	9.8	90.2	847	1.1	98.9	686	6.6	93.4	437
46 and above	13	87	254	25.7	74.3	624	10.9	89.1	475	13.8	86.2	32.6
	Chi square = 18.9544***			Chi square = 130.6128***			Chi square = 102.3989***			Chi square = 24.6468***		
Residence												
Urban	9.1	90.9	243	15.3	84.7	561	2.4	97.6	545	1.4	98.6	370
Rural	6.7	93.3	717	12.7	87.3	1354	4	96	1186	6.1	93.9	720
	Chi square = 1.6982 (NS)			Chi square = 2.3457 (NS)			Chi square 2.8802*			Chi square = 9.2348***		
Husband's level of education												
Illiterate	5.3	94.7	416	17.8	82.2	151	5	95	583	5.6	94.4	28.6
Literate but below middle	5	95	119	16.3	83.7	707	4.5	95.5	358	6	94	84
Middle but not high school	10.1	89.9	216	11.2	88.8	705	1.6	98.4	315	4.7	95.3	211
High school & above	9.1	90.9	209	10.2	898	352	2.6	97.4	427	10.8	89.2	50.9
	Chi square = 7.1148*			Chi square = 14.0286***			Chi square = 8.8582**			Chi square = 11.3433		
Religion												
Hindu	8	92	386	15.1	84.9	1234	3.7	96.3	1554	7.7	92.3	1020
Muslim/Sikh	6.6	93.4	574	8.4	91.6	287	2.3	97.7	129	5	95	40
Christian				12.2	87.8	394				22.7	77.3	30
	Chi square = .6886 (NS)			Chi square = 9.7025***			Chi square = .6747 (NS)			Chi square = 7.1835**		
Caste												
SC/ST	9.3	90.7	290	16.1	83.9	161	3.4	96.6	291	5.98	94.02	117
Others	6.3	93.7	670	13.2	86.8	1754	4.8	95.2	1392	8.1	91.9	973
	Chi square = 2.8070*			Chi square = 1.0801 (NS)			Chi square = 1.4179 (NS)			Chi square = .67318 (NS)		
Husband's occupation												
On-worker	20	80	15	29.2	70.8	154	20	80	38	7.3	92.7	41
Primary	3.5	96.5	344	16	84	422	2.4	97.6	814	5.2	94.8	382
Non-Primary	9.3	90.7	601	10.9	89.1	1339	3.5	96.5	831	9.2	90.8	667
	Chi square = 10.99***			Chi square = 25.2014***			Chi square = 0.0852 (NS)			Chgi square = 7.4625**		

*Significant at p < .10   **Significant at p < .05   *** Significant at p < .01

59

Table 4.4 Percentage Distribution of Male and Female Spacing Method Users By Selected Background and Behavioural Characteristics of the Husbands, 1992-93

STATES	PUNJAB			KERALA			KARNATAKA			BIHAR		
Background Characterestics	Male method	Female method	Total no. of cases	Male method	Female method	Total no. of cases	Male method	Female method	Total no. of cases	Male method	Female method	Total no. of cases
Husband's age in years												
Less than 35	46	.54	309	39.6	60.4	147	22.7	77.3	110	5.8	94.2	118
36-45	55.7	44.3	158	55.8	44.2	77	20.3	79.7	64	43.5	56.5	62
46 and above	75	25	28	82.4	17.6	17	12.5	87.5	16	30.8	69.2	13
	Chi square = 10.9765***			Chi square = 14.1503***			Chi square = .9108 (NS)			Chi square = 1.0771 (NS)		
Residence												
Urban	59.5	40.5	190	57.1	42.9	77	28.4	71.6	109	48.6	51.4	105
Rural	45.2	54.8	305	43.4	56.6	164	11.1	88.9	81	38.6	61.4	88
	Chi square = 9.4813***			Chi square = 3.9973**			Chi square = 3.9973**			Chi square = 1.9175 (NS)		
Husband's level of education												
Illiterate	37	63	92	25	75	4	0	100	26	38.1	61.9	21
Literate but below middle	46.3	53.7	41	36.4	63.6	21	21.2	78.8	19	22.2	77.8	9
Middle but not high school	45.2	54.8	93	46.2	53.8	104	22	78	41	39.1	60.9	23
High school & above	58	42	269	52.2	47.8	112	26	74	104	77.1	52.9	140
	Chi square = 14.1288***			Chi square = 2.9811(NS)			Chi square = 8.4611**			Chi square = 2.8113 (NS)		
Religion												
Hindu	57.8	42.2	204	48.2	51.8	139	24.4	75.6	156	42.1	57.9	160
Muslim/Sikh	45.7	54.3	291	52.3	47.7	44	5.9	94.1	34	64.7	35.3	17
Christian				43.1	56.9	58				41.7	58.3	16
	Chi square = 7.0698***			Chi square = .8780 (NS)			Chi square = 5.7339**			Chi square = 3.2308 (NS)		
Caste												
SC/ST	61.9	38.1	84	50	50	8	13.3	86.7	15	27.8	72.2	18
Others	48.4	51.6	411	47.7	52.3	233	21.7	78.3	175	45.7	54.3	175
	Chi square = 5.0751**			Chi square = .5514 (NS)			Chi square = .5838 (NS)			Chi square = 5.0160*		
Husband's occupation												
Non-worker	0	0	0	61.5	38.5	13	0	0	0	30.8	69.2	13
Primary	38.3	61.7	133	26.7	73.3	28	13.6	86.4	44	34.3	65.7	35
Non-Primary	55.2	44.8	362	50	50	200	23.3	76.7	146	47.6	52.4	145
	Chi square = 11.1177***			Chi square = 6.9079*			Chi square = 1.8948 (NS)			Chi square = 1.6564 (NS)		
Behavioural characteristics												
Discussion on FP with partners												
Never	42.4	57.6	60	62.5	37.5	20	19.4	80.6	37	38	62	50
Once/Twice	48.9	51.1	283	35.8	64.2	70	20	80	100	43.2	56.8	81
More Often	57.2	42.8	152	50.7	49.3	151	53.9	66.1	53	50	50	62
	Chi square = 4.1483*			Chi square = 6.4296**			Chi square = 1.2717 (NS)			Chgi square = 4.7298 (NS)		

*Significant at p < .10   **Significant at p < .05   *** Significant at p < .01

60

In all four states use of male terminal method increases with age of husbands. Fewer people have accepted male sterilisation before the age of thirty-five. The proportion of accepters in this category remains almost consistant in all selected states except in Karnataka, where it is almost negligible (0.2 percent). For spacing method also, use of the method increases with age in all three states except Karnataka. In Punjab and Kerala the proportion of male method users are substantial when compared to female methods in all age groups unlike in Karnataka and Bihar where female spacing method dominates.

Proportion of male spacing method users as expected, are higher in urban areas than in rural areas. Rural-urban differential is the highest in Karnataka. In case of male terminal method, proportions of users are more in urban areas than in rural areas in Punjab and Kerala. In Karnataka and Bihar on the other hand, acceptance of male terminal method is higher in rural areas. In all the four states however, rural-urban differential in male terminal method is comparatively less than that of male spacing method.

Use of male spacing method shows increase with higher level of education of husband in all four states. In case of male terminal method the distribution varies across states. In Kerala and Karnataka terminal method has been accepted more by the illiterates than the literates and proportion of users show a decline with higher level of education. In Punjab and Bihar on the other hand, with higher level of education proportion of terminal method user show a marginal increase.

When we compare use of male terminal method between Hindus and Muslims, higher proportion of Hindus have accepted it than their Muslim counterparts. In male spacing method the situation is reversed in all selected states barring Karnataka. Male terminal method has also shown lower acceptance by Sikhs (in Punjab) and Christians when compared to the Hindus. In Bihar and Karnataka lower proportion of the Chrisitans have reported use of male spacing method than the Hindus.

As far as the social group of the respondents are concerned, higher proportion of the Scheduled Castes and Scheduled Tribes are using male terminal methods than non-Scheduled Castes and Tribes except in Bihar. For male spacing method, on the contrary, higher proportion of non-Scheduled Castes and Tribes are using it in all the selected states except Punjab.

Males involved in primary sector for occupations have reported lower use of male spacing method than those in the non-primary sector. In case of male terminal method higher proportion of husbands in primary sector are using it in Kerala and Karnataka. In Bihar and Punjab, proportions of users of male terminal method are higher in non-primary sector as compared to primary sector. Proportions of terminal method users are highest in non-worker category that

includes apart from unemployeds, retired persons and students. In Punjab and Kerala non-worker category also shows high proportion of male spacing method users as compared to female spacing method.

4.1.2 Behavioural Characteristics of Male Method Users

Behavioural characteristics of the users, as mentioned earlier are considered for spacing methods only. These characteristics are related to husbands' behaviour as perceived by the wives. Among the three behavioural characteristics we have chosen for the study the distribution of approval of family planning by the husband shows very little variation in the response in all four selected states (see Appendix 2). More than 95 percent of the husbands approve family planning. For this reason we are not considering the variable for cross tabulatin and in the later analysis.

Similarly, the distribution of data related to husband's desire for children shows little variation in selected states particularly in Punjab and Karnataka where more than 90 percent husbands desire similar number of children as their wives. In Bihar and Kerala variation in distribution is marginally higher than the above mentioned states. In Bihar and Kerala husbands who desire more children than their wives are using male spacing method less than those who desires fewer or similar number of children as their wives.

The variable on spousal communication shows that couples who have never discussed family planning are using male spacing method less than those who have discussed. In Kerala however, 62.3 percent of the women who have never discussed family planning report using male method. In other three states those who have discussed family planning more often with their spouses are using male methods more than those who have discussed it once or twice.

The result of the cross-tabulation indicates that the background characteristics of the users are not similar for terminal and spacing methods. Moreover, the characteristics of the users also differ from state to state. In sum, use of male method increases with age of husbands except in Karnataka where use of male spacing method is higher among younger husbands. Urban and educated husbands and those occupied in non-primary sector are using male spacing method more than those who are illiterate, living in rural areas and occupied in primary sector. In case of male terminal method this trend is noticeable only in the North Indian states. In South Indian states of Kerala and Karnataka reverse situation is observed.

Male terminal method has attracted more Hindus than Muslims, Christians and Sikhs. In some states (Bihar, Kerala) male spacing method is more popular among Muslims then among the Hindus, though the actual number of Muslim users are very small. Similarly, male terminal method has attracted more Scheduled Castes in selected states whereas, male spacing method has attracted mainly

non-Scheduled Castes. Among the behavioural characteristics of the husbands couple communication is worth mentioning. In all selected states couples those have discussed family planning more often have reported higher usage of male spacing method.

4.2 Multivariate Analysis

In this section we discuss the results of multivariate analysis based on the framework described in chapter 3. Logistic regression analysis is performed to determine the factors that affect use of male methods. We have done two sets of regression analysis for each selected states considering male terminal method and male spacing method as response variable. As mentioned earlier, for the analysis of male spacing method we have considered both background and behavioural characteristics as predictor variables. Whereas, in the analysis for male terminal method only background characteristics are considered.

The result of regression analysis for each state is presented in tabular form. B in the table is estimated coefficient of the logistic regression model and exp (B) are odds ratios. Exp (B) represents proportional increase (if greater than 1.0) or decrease (if less than 1.0) for odds of events occuring (here it is use of male terminal or male spacing method). The significance level of the coefficient has been shown in the table (The detail tables have been presented in the appendix).

Table 4.5 : Logistic Regression Analyses for Use of Male Terminal Method in Selected States, 1992-93

STATE	PUNJAB		KERALA		KARNATAKA		BIHAR	
Variables	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age of husband	.0709	1.0735***	.0720	1.0746***	.0984	1.1034***	.0553	1.0569***
Residence								
Urban	-.0118	.9883	.2453	1.2780*	-.2885	.7494	.3081	1.3608
Rural(R)	--	--	--	--	--	--	--	--
Husband's Education								
Below middle	-.0997	.9051	.2587	1.2953	1.1506	.8601	-.1250	.8825
Middle complete not high school	.8176	2.2651***	-.0913	.9128	-1.0509	.3496**	-.3040	.7379
High school & above	.5679	1.7645*	-.3820	.6825	-.5202	.5944	.4340	1.5433
Illiterate (R)	--	--	--	--	--	--	--	--
Religion								
Muslim			-.7102	.4915***	-.3879	.6785	-.3326	.7171
Sikh	.1000	1.052	--	--	--	--	--	--
Christian	--	--	-.2263	.7975	--	--	1.1384	3.1218**
Hindu (R)	--	--	--	--	--	--	--	--
Caste								
SC/ST	.3290	1.3896	-.0763	.9265	.4304	1.5379	-.3538	.7020
Others (R)	--	--	--	--	--	--	--	--
Husband's Occupation								
Non Primary	.9094	2.4829***	-.4131	.6616***	.2762	1.3181	.3643	1.4395
Primary (R)	--	--	--	--	--	--	--	--

R = reference category   * = significant at P < .10 ** = significant at P < .05 *** = significant at P < .01

The usage of male methods should be interpreted in relation to female methods.

In the next section we move on to the interpretation of logit regression model performed for use of terminal and spacing method. First we discuss the scenario in use of male terminal method in each selected states. Models involving use of spacing method will be analysed in the following section.

4.2.1 Male Terminal Method

Punjab

The result of the logit regression analysis taking male terminal method as the response variable for Punjab indicates that use of male terminal method increases with age of husbands. The coefficient of age is .0709 and it is significant at 1 per cent level. With an increase of one year in the age of husbands the odds of using male terminal method increases by a factor of 1.07.

Educational level of husbands has also emerged as an important predictor variable for use of male terminal method in Punjab. Use of male terminal method shows increase with husbands' middle school and high school level education. The B coefficient for middle school level and high school level of education is .8176 and .5679

respectively and is significant at 1 per cent and 10 per cent level. Husbands with middle school level education are 2.26 times more likely to use male terminal method than the illiterates.

The husbands who are working in non-primary sector are more likely to use male terminal method than those working in primary sector. The coefficient for non-primary occupation is .9094 and is significant at 1 per cent level. The exponential parameter (Exp B) indicates that the odds of using male terminal method for husbands working in non-primary sector is 148 per cent higher than those working in primary sector.

Urban residence of husbands in Punjab shows a negative relationship with the use of male terminal method while Scheduled Castes shows a positive relationship. However, the odds ratio observed for these variables are not significant.

Kerala

As in Punjab in Kerala too, age of husband emerges as an important predictor variable for the use of male terminal method. The B coefficient for age of husband is .072 and is highly significant. With one year increase in age of husband the odds of using male terminal method increases by 1.07 times.

Occupation of husbands also significantly affects the use of male terminal method in Kerala. It is interesting to note that unlike Punjab, the husbands in Kerala who are working in non-primary sector are less likely to use male terminal method compared to those working in primary sector. The odds ratio observed for husbands working in non-primary sector is .6616 and is significant at 1 percent level.

Another important predictor variable that explains use of male terminal method in Kerala is religion. The Muslims in Kerala are less likely than their Hindu counterparts to use a male terminal method. The B coefficient for Muslims is -.7102 and it is significant at 1 percent level. The coefficient of middle and high school level education of husbands in Kerala shows an unexpected sign but the results are not significant.

Karnataka

Use of male terminal method in Karnataka also indicates positive relationship with the age of husband. The log odd of using male terminal method increases by .098 with one year increase in husbands' age which is highly significant.

Husband's educational level also emerges as one of the important variable determining use of male terminal method. Like Kerala in Karnataka too, educational level of husband has a negative relationship with the use of male method. The coefficient for husbands with middle school level of education is strong and negative (-1.051). The odds ratio (.349) observed is significant at less than 5 percent level.Urban residence of the couples and caste also has an inverse relationship with use of male terminal method in Karnataka. The results however are not significant.

Bihar

In Bihar age of husband and religion appear as the important predictor variables for use of male terminal method. The B coefficient of age is .055 and it is significant at 1 percent level in spite of the low magnitude of the coefficient.

The Christians in Bihar are more likely and the Muslims are less likely than their Hindu counterparts to use male sterilisation. The coefficient for Christians using male method is 1.138 and is significant at less than 5 percent level. The odds of Christians using male terminal method are 212 percent more than the Hindus. However, the actual number of Christians using terminal method being very small (see appendix 1) the finding can be ignored. Except

husband's primary and middle school level education other variables used in the analysis show expected signs though they are not statistically significant.

In sum, the age of the husband emerges as a variable of vital importance for the use of male terminal method compared to female terminal method. Age of husband is consistently coming significant in all selected states. It is wellknown that with age fertility increases and as the couples achieve their fertility goals they tend to restrict fertility by using a non-reversible method. Conversely, the probability for a young couple to accept a non-reversible method is less, as they would like to have more children.

Another reason for male terminal method being used by older couples may be due to the shift in emphasis on vasectomy in the National Family Planning Programme. The emphasis on vasectomy as a family planning method reduced after 70's and that may have resulted in lesser acceptance of this method by the younger generation.

Educational level of husband also affects the use of male terminal method but its relationship with the use is not similar in all the selected states. In Punjab the use of male sterilisation increases with husband's level of education In Karnataka and Kerala on the other hand educated husbands also prefer a female method compared male method. The reason for illiterates preferring male sterilisation more than the literates may be due to the incentives given to the vasectomy acceptors.

As far as religion is concerned a mixed picture emerges from the above analysis. Religion comes out to be an important variable only in the state of Kerala and Bihar. In Kerala the usage of male terminal method by the Muslims is significantly less than the Hindus. In case of Bihar Christians prefer male sterilisation to the Hindus.

Husbands' occupation appeared as an important variable in Punjab and Kerala. In Punjab husbands working in non-primary sector are using male spacing method significantly more than those in primary sector. In Kerala on the other hand, husbands working in primary sector prefer male terminal method. The finding is similar to that of educational level of husbands. It indicates that in Kerala male sterilisation has attracted mainly the people from lower socio-economic strata, whereas people from higher socio-economic strata have either preferred female terminal method or spacing methods.

4.2.2 Male Spacing Method

As mentioned earlier, in the analysis of male spacing method in selected states we were interested to include behavioural variables along with background variables. Unfortunately we could include only one behavioural variable i.e. discussion on family planning with partner, as the distribution of data on the other behavioural variables show no variation (See appendix no. 2). For a similar reason we have

to drop the variable Caste and Occupation for multivariate analysis in Kerala, Karnataka and Bihar. These two variables have been considered only for Punjab.

Moreover, in all the states use of spacing method is very low among the respondents with below middle school level education and for this reason we have measured the variable related to education in following manner.

$X3 = 1$ - Education level above High School

0 - Education level below high school

We have also tried logit analysis considering Husband's college level education (Model-2). In Karnataka and Bihar Muslims are fewer in number. Thus we have used a third set of regression for Bihar and Karnataka dropping the variable Religion (Model-3). In the later section we have analysed the results of logit analysis in selected states.

Table 4.6.1 : Logistic Regression Analyses for Use of Male Spacing Method in Punjab,1992-93

Variables	Model 1		Model 2	
	B	**Exp(B)**	**B**	**Exp(B)**
Age of Husband	.0257	1.0261**	.0259	1.0262**
Residence				
Urban	.3118	1.3659	.4311	1.5390*
Rural (R)	--	--	--	--
Husband's Education				
High School and above	.5230	1.6871***	--	--
College and above	--	--	-.1715	.8424
Below high school/college	--	--	--	--
Religion				
Sikh	-.1687	.8447	-.1460	.8642
Hindu (R)	--	--	--	--
Caste				
SC/ST	.5942	1.8116**	.4777	1.6123*
Others (R)	--	--	--	--
Husband's Occupation				
Non Primary	.1401	1.1504	.2991	1.3486
Primary (R)	--	--	--	--
Discussion on Family Planning				
Once or Twice	.2793	1.3222	.3776	1.4588
More often	.4682	1.5971	.5826	.7906**
Never discussed (R)	--	--	--	--

R = reference category   *   = significant at P < .10
** = significant at P < .05   *** = significant at P < .01

Punjab

The result of Logit Regression using male spacing method as response variable is presented in Table 4.6.1. Model 1 shows a strong impact of husband's high school level education on use of male spacing method. The coefficient for high school education is .5230 and it is highly significant. Husbands with high school education are 68 percent more likely than those with below high school education to use male method.

Use of male spacing method in Punjab shows an increase with age of husband. Though the magnitude of the coefficient is low (.026) the odds ratio is significant at 5 percent level. Use of male spacing method among castes gives an unexpected result. Scheduled Castes in Punjab are 81 percent more likely than the non-scheduled castes to use a male spacing method. The log odd of using male spacing method is .594 and it is significant at 2 percent level.

In Model-2 where husband's college level education has been considered couple communication emerges as an important predictor variable. Couples who have discussed family planning with their partners are in a better position to use male spacing method than a female spacing method. The log odds of using male spacing method by those who have discussed it more often with their spouses is .625 and is significant at 5 percent level. In Model-2 residence is also significant at 6 percent level. The odds of using male spacing method by urban couples are 53 percent higher than rural couples.

Surprisingly, husbands who have college level education shows a negative relationship with use of male spacing method when compared to those with below college level education. However the result is not significant.

Table 4.6.2 : Logistic Regression Analyses for Use of Male Spacing Method in Kerala,1992-93

Variables	Model 1		Model 2	
	B	Exp(B)	B	Exp(B)
Age of Husband	.0443	1.0453**	.0458	1.0468**
Residence				
Urban	.5093	1.6641	.5185	1.6794
Rural (R)	--	--	--	--
Husband's Education				
High School and above	-.1217	1.8854	--	--
College and above	--	--	.0315	1.0320
Below high school/college (R)	--	--	--	--
Religion				
Muslim	.4888	1.6304*	.4699	1.5999*
Christian	-.1949	.8229	-.1969	.8213
Hindu (R)	--	--	. --	--
Discussion on Family Planning				
Discussed more often	.4491	1.5669	.4587	1.5820
Discussed less/not discussed(R)	--	--	--	--

R = reference category   * = significant at P < .10
** = significant at P < .05   *** = significant at P < .01

Kerala

As in Punjab, in Kerala too usage of male spacing method increases with age. The B coefficient for the variable Age is .044 and it is significant at 2 percent level. The coefficient of urban residence of the users is .509. The odds of using male spacing method for the urban couples are 66 percent higher than rural couples. The result is significant only at 8 percent level.

In Model- 2, we have used husband's college level education instead of high school level education. Some changes in the result are noticeable. Discussion on family planning with spouses emerges as an important variable for use of spacing method. The log odds of using male method for those who have discussed it more often is .458 and is significant at 10 percent level. But in both these models educational level of husbands remains insignificant.

Table 4.6.3 : Logistic Regression Analysès for Use of Male Spacing Method in Karnataka, 1992-93

Variables	Model 1		Model 2		Model 3	
	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age of Husband	-.0136	.9865	1.0173	.9823	1.0228	.9775
Residence						
Urban	1.1266	.3241***	.8944	.4089**	.8171	2.2639*
Rural (R)	--	--	--	--	--	--
Husband's Education						
High School and above	.1378	1.1477	--	--	--	--
College and above	--	--	.7400	2.0960*	.9064	2.4754**
Below High school/college(R)	--	--	--	--	--	--
Religion						
Muslim	-1.6142	1.9007**	-1.4599	.2323*	--	--
Hindu (R)	--	--	--	--	--	--
Discussion on Family Planning						
Once or twice	.4915	1.6347	.4972	1.6442	.3462	1.4136
More often	.6422	1.9007	.5482	1.7301	.5526	1.4136
Never discussed (R)	--	--	--	--	--	--

R = reference category   * = significant at P < .10
** = significant at P < .05   *** = significant at P < .01

Karnataka

In Karnataka the result of logit regression shows that only two variables are important. Urban residence and Religion have emerged as the two important variables. Couples living in urban areas are more likely than the rural couples to use male spacing method compared to female spacing methods. The log odd of using male spacing method is 1.126 and is significant at 1 percent level. Muslims in Karnataka do not prefer to use male spacing method compared to the Hindus. The coefficient for Muslims is -1.614 and the odds ratio (.1990) is significant at 3 percent level.

In Model -2 we have used husband's college level education instead of high school level. The result does not vary much except for impact of educational level of husbands. The log odd of husband's college level education is .740 and is significant at 7 percent level whereas in Model-1 educational level of husbands was not significant at all.

As mentioned earlier, in Model-3 we have dropped the variable Religion. Educational level of husband emerges as the strongest variable in model 3. The log odd of education is .906 and is significant at 2 percent level. The husbands with college level education in Karnataka are 147 percent more likely to use male spacing method compared to those who do not have college level education. Unlike Punjab and Kerala, in Karnataka age of husband shows a negative relationship with use of male spacing method in all 3 models. The results of the logit regression however, are not significant.

78

Table 4.6.4 : Logistic Regression Analyses for Use of Male Spacing Method in Bihar, 1992-93

Variables	Model 1		Model 2		Model 3	
	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age of Husband	-.0100	.9901	-.0093	.9907	1.0048	.9952
Residence						
Urban	.4713	1.6021	.4926	1.6366	.3764	1.4571
Rural (R)	--	--	--	--	--	--
Husband's Education						
High School and above	.3797	1.1419	--	--	--	--
College and above	--	--	.1431	1.1539	.0802	1.0835
Below High school/college(R)	--	--	--	--	--	--
Religion						
Muslim	11.2104	3.3549**	1.1947	3.3026**	--	--
Christian	-.2247	.7987	-.1589	.8531	--	--
Hindu (R)	--	--	--	--	--	--
Discussion on Family Planning						
Once or twice	.2253	1.2527	.2543	1.2896	.2449	1.2775
More often	.4586	1.5819	.5120	1.1539	.4563	1.5782
Never discussed (R)	--	--	--	--	--	--

R   = reference category   *   = significant at P < .10
** = significant at P < .05   *** = significant at P < .01

Bihar

The only variable significant among the predictor variables in Bihar is religion. Unlike Karnataka, in Bihar Muslims have higher usage of male spacing method than the Hindus. The odds of using male spacing method by Muslims are 235 percent higher than the Hindus. The odds ratio is significant at less than 3 percent level, though the actual number of Muslims using male spacing method is small (see appendix 2). The results of logit regression for model- 2 and Model- 3 show no improvement over Model -1.

Now we sum up the result of the regression analysis using male spacing method as response variable. For spacing method as in terminal method age of husband emerges as an important variable. In Punjab and Kerala use of male spacing method increases with the age of husband. This finding is different from those in other states where with increasing age couples prefer a permanent method.

Husband's education level is another variable which explains the use of male spacing method in Punjab and Karnataka. In case of Punjab husbands with high school level education favour the use of male spacing method over female spacing methods. In Karnataka, the threshold level for using male spacing method is the college level education of the husbands.

Religious affiliation of couples also affect use of male spacing method in Karnataka and Bihar. Muslims in Karnataka use male spacing method significantly less than the Hindus. In Bihar and Kerala Muslims use it more than their Hindu counterparts. Since, in both these states actual number of Muslims using spacing method is very small, the result can be ignored.In all states couples living in urban areas are in a better position to use male spacing method than those who are living in rural areas.

Scheduled Castes in Punjab are using male spacing method more than the non- Scheduled castes. One of the reason for their higher usage of male spacing method may be related to their occupation. Scheduled castes in Punjab, who are using spacing methods are mostly engaged in non-primary sector (Transport-Production and service). 46 percent of them have education above high school level. Higher usage of male spacing method by the Scheduled Castes may be explained this reason. Discussion on family planning with spouses shows expected sign in all states. In Punjab and Kerala it has emerged as an important variable.

As mentioned earlier the actual number of couples using spacing methods are very small in all states specially in Bihar and Karnataka. The result of logit regression analysis performed for these states thus are not very satisfactory. In Punjab where proportion of male spacing method users are considerable in number the result is comparatively better and in expected direction.

4.3 Limitation of the Study

One of the major limitations of the study is paucity of data. In National Family Health Survey, the information was collected from the women. Husbands are not been included in the survey. Whereas, some of the variables like residence, religion and caste are mostly same for husbands and wives, the behavioural variably are actually wives' perception of their husbands' behaviour. For example,

husband's approval of family planning is the wife's opinion about the husband. The wives may have sure idea about husband's opinion but in a situation where couple communication is weak, chances of misperception by the wives can not be ruled out. This reason perhaps has resulted lack of variation in the distribution of behavioural variables.

Secondly, uses of male methods depend on the perception of users regarding the side effects and sexual satisfaction derived from the method. This is particularly true in case of condom. Literature on male involvement (Ringheim, 1993, Boulus, 1991) indicates user's satisfaction and complaints as one of the determining factors for acceptance or discontinuation of male methods. Unfortunately we have not been able to consider the 'method factor' for our analysis due to non- availability of the data. NFHS data on this subject is restricted to 'reasons for discontinuation' and reasons for non- use of family planning. But information regarding this was not method specific and presents the perception of the females only.

Since the national family welfare programme till recently focussed mainly on women, proper knowledge on male methods are lower than female methods among men (Khan and Patel, 1997). Information collected from men regarding their knowledge and attitude toward family planning including use of male methods would have better explained the framework described in this study.

CHAPTER - 5
CONCLUSION

Male involvement in family planning is viewed as a necessary step for betterment of overall reproductive health. Reproductive health care programmes in many countries have recognised the need to involve men in their programmes as they play a vital role in matters related to fertility and family planning. The 1994 ICPD in Cairo recommended the incorporation of males in reproductive health agenda. The need to involve men in family welfare programme has also been felt in India specially in the view of AIDS. The Reproductive and Child Health (RCH) programme which has started in October 1997 has also emphasised male involvement in family planning. In view of the above recommendations it is interesting to see the present situation of male involvement as revealed from our study in selected states of India and to understand the factors that affect the male involvement.

Our study in four selected states of India clearly shows that active participation of males in family planning is much lower when compared to female participation. The overwhelming dependence on female methods, particularly on female sterilisation is evident in all selected states. The male- female distribution of terminal method acceptors is heavily skewed and the actual number of men who have accepted male sterilisation is small.

Use of male terminal method is expected to increase with educational level of husband and urban residence. The North Indian states of Punjab and Bihar confirm this hypothesis. It is interesting to note that in the South Indian states of Kerala and Karnataka even the educated husbands prefer female sterilisation over male sterilisation. In these two states male sterilisation acceptors are mainly from lower socio-economic strata. Male sterilisation has also attracted Scheduled Castes in Punjab, Christians in Bihar (a majority of them belonged to the Scheduled Tribes). The reason for their higher usage of male sterilisation is possibly linked to its emphasis on monetary incentives given in the family planning programme. It indicates that ignorance and fear to accept male sterilisation exists even among the males belonging to higher socio-economic strata. Similarly, a negative attitude of the Muslims toward male sterilisation is also evident from our study.

The use of male spacing method is even lower compared to male terminal method. If we consider the distribution of spacing and terminal methods among the male method users, a clear dependence on terminal method is noticed. Except in Punjab where use of condom is very high compared to male sterilisation, in other states use of male spacing method takes a backseat. This makes the situation even worse as lower use of condom not only results in higher fertility but also makes a section of the society vulnerable towards the risk of STD and HIV/AIDS. Our study indicates lower use of condom among rural males, males involved in primary sector and those with below high

84

school education. Among the males who are engaged in primary sector the use of condom is negligible in three the four selected states. It points to an concerning situation as AIDS research in our country has revealed that HIV is spreading among the rural population too (NACO, 1997-98). The potential of HIV infection is strong among people from tribal and economically backward region from where male population migrate to urban areas in search of jobs. The prevalence of STD and Tuberculosis among the tribals has made the problem more serious (NACO, 1997-98). Our study reveals almost negligible use of condom among Scheduled Castes and Tribes except in Punjab.

The study also shows higher use of male methods (both terminal and spacing) with higher age of the husbands. Though it is well known that any kind of contraceptive use increases with age, the finding also points out certain facts that are important for policy considerations. firstly, there is little use of any kind of male methods among younger males. Young men may not prefer a non-reversible method but at the same time low use of spacing method indicates ignorance and lack of motivation to accept a male method. Spousal communication on family planning is also less among the younger couples and our study has pointed out that use of male spacing method is less among the couples who do not discuss family planning. The low use of condom among young men is particularly important in the view of spreading of HIV as 89 percent of the reported HIV positive cases in India are from economically active population of 15-49 and three out of four infected cases are males (NACO, 1997-98).

Secondly, the higher use of spacing method among older men in Punjab and Kerala also reveals an unmet need for limiting where motivated males are using male spacing method for limiting purpose. Both the states from where this trend has been reported are socio-demographically developed states. Though the older males in these states are motivated to actively participate in family planning they are either unaware of the advantages of vasectomy over tubectomy or the service is not widely available as family planning programme is not emphasising on this method.

As for the policy considerations, the present study points out several areas where urgent improvement is necessary. There is a serious need to promote male spacing method for the purpose of spacing as well as safe sex. The promotion of condom must include urban as well as rural population. It is necessary to find out the reasons which lead to lower use of condom in rural area. It has been mentioned in several studies (Khan and Patel, 1997, Guruswamy and Surender, 1997) rural males find it difficult to procure condom from female run family planning clinics which distribute condom free of cost. In rural areas free distribution and counselling of the males can be done by male health workers.

While promoting condom the youth should be the target. Our study has clearly pointed out that young males are in a more vulnerable position than the older males. There is a definite need to educate young men on issues related to safe sex and spacing. As discussion on these matters in our society is not common, the family planning programme has to shoulder the responsibility to educate the men along with women. Young men should be encouraged to discuss about family planning with their partners. Since many men (specially in rural areas) feel that communication on family planning among the partners should be initiated by the husbands (Khan and Patel, 1997), they should be motivated enough to take up this issue with their wives.

There is a strong need to reintroduce vasectomy in the family planning programme. Khan and Patel (1997) have pointed out that misperception regarding vasectomy among the males is widespread. Many males are scared of surgery and think female sterilisation is easier than male sterilisation. Motivational efforts used by the family welfare programme which focus on women as their target have unintendedly increased the misinformation and negative publicity on vasectomy. The reintroduction of vasectomy should not be based on incentives to attract the acceptors. Our study has pointed out that the present family welfare programme fails to motivate not only those who are socio-economically well-off but also a section of the socio-

economically backward community too. The IEC on vasectomy should be based on advantages of both male and female methods. The males should be made aware of the now available 'no-scalpel' technique of male sterilisation. The emphasis on this technique for male sterilisation hopefully will motivate many males from different socio-economic strata to accept male sterilisation.

Bibliography

Althaus F. (1998) "Monogamous and at risk of HIV". *International Family Planning Perspectives* Vol 24, 1:2-3.

Bankole, A. and Singh, Susheela (1998) "Couples Fertility and Contraceptive Decision - Making in Developing Countries : Hearing the Men's Voice". *International Family Perspectives* Vol 24, 1: 15-24.

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

Boulos, M.L. (1991) "Perception and Practices Relating to Condom Use among Urban Men in Haiti". *Studies in Family Planning* Vol. 22, 5:318-328.

Caldwell, John, Geminiratne, K.H.W., Caldwell, Pat, De-Silva, Soma, Caldwell, Bruce, Weraratne, N. and Silva, P. (1987) "The Role of Traditional Fertility Regulation in Sri Lanka". *Studies in Family Planning* Vol. 18, 6:1-21.

Dyson T. and Moore, M. (1983) "Review on Kinship Structure, Female Autonomy and Demographic Behaviour in India". *Population and Development Review* Vol. 9, 1: 35-60.

Ezeh, Alex C. (1993) "The Influence of Spouses Over Each Other's Contraceptive Attitudes in Ghana". *Studies in Family Planning* Vol. 24, 3:163-174.

Goldberg, Howard I. and Toros, Aykut (1994) "The Use of Traditional Methods of Contraception among Turkish Couples". *Studies in Family Planning* Vol. 25, 2:122-128.

Grady, W.R., Tanfer, K., Billy, J.O.G., and Lincoln Hanson, J. (1996) "Men's Perceptions of their Roles and Responsibilities regarding Sex, Contraception and Child Rearing". *Family Planning Perspectives* Vol. 24, 2:65-71.

Lasse, A. and Becker, S. (1997). "Husband-Wife Communication about Family Planning and Contraceptive Use in Kenya." *International Family Planning Perspectives* Vol. 23, 1 : 15-20.

Mahmood, N. and Ringheim, K. (1997) "Knolwedge Approval and Communication about Family Planning as Correlates of Desired Fertility among Spouses in Pakistan". *International Family Planning Perspectives* Vol. 23, 3:122-129.

Masson, K.O. and Taj, A.M. (1987) "Differences between Women's and Men's Reproductive Goals in Developing countries". *Population and Development Review* Vol. 13, 4:611-633.

Mbizvo, Michael T. and Adamchak, Donald J. (1991) "Family Planning Knowledge, Attitudes, and Practices of Men in Zimbabwe". *Studies in Family Planning* Vol. 22, 1:31-38.

McGinn, Therese, Bamba, Azana, and Balma, Moise (1989). "Male Knowledge, Use and Attitude regarding Family Planning in Burkina Faro". *International Family Planning Perspectives* Vol. 15, 3:84-87.

National AIDS Control Organisation (1994) AIDS Update. CARC Calling, Bulletin of the Centre for AIDS Research and Control, Bombay, Vol. 7, 2.

National AIDS Control Organisation Country Scenario, 1997-98. Ministry of Health and Family Welfare, Govt. of India.

Omondi-Oddiambo (1997) "Men's Participation in Family Planning Decisions in Kenya". *Population Studies* Vol. 51 : 29-40.

Population Reports, 1990 "Condoms : Now more than ever," Population Information Programs, Vol 18, 3 Centre for Communication Programme, *The John Hopkins University*, School of Public Health,USA.

Population Reports, 1998. "New Perspectives on Men's Participation". Population Information Programs, Vol 26, 2 Centre for Communication Program,*The John Hopkins University*, School of Public Health, USA.

Posner, Jill K. and Mbodji, Fara (1989). "Men's Attitude about Family Planning in Dakar, Senegal". *Journal of Bioscoial Science* Vol. 21, 279-291.

Reddy, M.Y. (1984). "Influence of Demographic Variables on Adoption of Sterilisation". *Journal of Family Welfare* Vol. 30, 3 : 46-56.

Guruswamy, M. and Surinder, S. (1997) "Conventional Contraceptives: Towards a Selective Policy of Free Distribution in India". *Journal of Family Welfare* Vol. 43, 4: 35-39.

Helzner, J.F. (1996) "Men's Involvement in Family Planning". *Reproductive Health Matters* (7): 146-154.

Isingo-Abanihe, Uche C. (1994) "Reproductive Motivation and Family-Size Preferences among Nigerian Men". *Studies in Family Planning* Vol. 25, 3:149-161.

Joesoef, Mohammad R., Baughman, Andrew L and Utomo, B. (1998) "Husband's Approval of Contraceptive Use in Metropolitan Indonesia : Program Implications". *Studies in Family Planning* Vol. 19, 3:162-168.

Jolly, K.G. (1976) "Impact of Interspousal Communication on Family Planning Adoption". *Journal of Family Welfare* Vol. 23, 1:38-44.

Jolly, K.G. (1978) "Relationship of Family Planning Acceptors with Selected Socio-economic Characteristics at District Level". *Demography India* 7, 1 & 2 : 62-80.

Karra, Mihira V., Stark, Nancy N. and Wolf, Joice (1997) "Male Involvement in Family Planning : A Case Study Spanning Five Generations of a South Indian Family". *Studies in Family Planning* Vol. 28, 1:24-34.

Khalifa, Mona A. (1988) "Attitudes of Urban Sudanese Men toward Family Planning". *Studies in Family Planning* Vol. 19, 4 : 236-234.

Khan, M.E. and Patel, B.C. (1997) *Reproductive Behaviour among Muslims in Uttar Pradesh*, New Delhi : The Population Council.

Khan, M.E. and Patel, Bella C. (1996). "How Males Think about Contraception and Family Formation". *Paper presented in National Seminar on Male Involvement in Reproductive Health and Contraception Organised by the Population Council and Ford Foundation* at Baroda on April 30 - May 2, 1997.

Knodel, J. and Pramularatana, A. (1996). "Prospects for Increased Condom Use within Marriage in Thailand". *International Family Planning Perspectives* Vol. 22, 3 : 97-102.

Retherford, R.D. and Choe, M.K. (1993) *Statistical Models of Causal Analysis*, New York : John Willey and Sons, Inc.

Riley, N.E. (1997) "Gender, Power and Population Change". *Population Bulletin* Vol. 52, 1:2-48.

Ringheim, Karin (1993) "Factors that Determine Prevalance of Use of Contraceptive Methods for Men" *Studies in Family Planning* Vol. 24 2: 87-99.

Santiso, Roberto G., Bertrand, Jane T. and Pineda, Maria A. (1983) "Voluntary Sterilisation in Guatemala: A Comparison of Men and Women". *Studies in Family Planning* Vol. 14, 3:73-82.

Santow, Gigi (1993) "Coitus Interrupters in the Twentieth Century". *Population and Development Review* Vol. 19, 4 : 767-792.

Shariff, A. (1995) "Socio-economic and Demographic Diferences between Hindus and Muslims in India". *Economic and Political Weekly* Vol. 30, 46: 2947-2953.

Sidney, R.S., Hashemi, Syed M. and Jenkins, A.H. (1995) "Bangladesh Family Planning Success Story : A Gender Perspective". *International Family Planning Perspectives* Vol. 21, 4 : 132-137.

Stover, J. and Bravo, M. (1991) "The Impact of AIDS on Knowledge and Attitude about Condom as a Contraceptive Method in Urban Mexico". *International Family Planning Perspectives* Vol. 17, 2 : 61-64.

Thompson, Barbara, MacGillivray, Ian and Fraren, Cynthia (1991) "Some Factors in the Choice of Male and Female Sterilisation in Abardeen". *Journal of Biosocial Sciences* Vol. 23, 4 : 359-363.

Vernon, R., Ojeda, G. and Vega, A. (1991) "Making Vasectomy Services More Acceptable to Men". *International Family Planning Perspectives* Vol. 17, 2 : 55-60.

Warren, Charls W. Hiyari F., Wingo, Phylles, Abdel-Aziz, A., Abdalla M. and Morris, Leo (1990) "Fertility and Family Planning in Jordon : Results from the 1985 Jordon Husbands Fertility Survey". *Studies in Family Planning* Vol. 21, 1:33-39.

Wegner, Mary N., Landry, E., Wilkinson, D and Tzanis, J (1998) "Men as Partners in Reproductive Health : From Issue to Action". *International Family Planning Perspectives* Vol. 24 38-42.

Appendix 1
Frequency Distribution of the Background Characteristics of Users :
Terminal Method

Background Characteristics	PUNJAB		KERALA		KARNATAKA		BIHAR	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Husband's age in years								
Less than 35	256	26.6	444	23.2	522	31	327	30
˙36-45	450	46.9	847	44.2	686	40.8	437	40.1
˙46 and above	254	26.5	624	32.6	475	28.2	326	29.9
Residence								
Urban	243	25.3	561	70.7	525	31.2	370	33.9
Rural	717	74.7	1354	29.3	1158	68.8	720	66.1
Husband's level of education								
Illiterate	416	43.3	151	7.9	583	34.6	286	26.2
Literate but below middle	119	12.4	707	36.9	358	21.3	84	7.7
Middle but not high school	216	22.5	705	36.8	315	18.7	211	18.4
High school & above	209	21.8	352	18.4	427	25.4	509	46.7
Religion								
Hindu	386	40.2	1234	64.4	1554	92.3	1020	93.6
Muslim/Sikh	574	59.8	287	15	129	7.7	40	3.7
Christian			394	20.6			30	2.7
Caste								
SC/ST	290	30.2	161	8.4	291	17.3	117	11.7
Others	670	69.8	1754	91.6	1392	82.7	973	89.3
Husband's occupation								
Non-worker	15	1.6	154	8	38	2.2	41	3.8
Primary	344	35.8	422	22	814	40.4	382	35
Non-Primary	601	62.6	1339	69.9	831	49.4	667	61.2

Appendix 2
Frequency Distribution of the Background and Behaviroural Variables :
Spacing Methods

Background Characteristics	PUNJAB		KERALA		KARNATAKA		BIHAR	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Husband's age in years								
Less than 35	309	62.4	147	61	110	57.9	78	61.1
36-45	158	31.9	77	32	64	33.7	62	30.2
46 and above	28	5.7	17	7	16	8.4	13	6.7
Residence								
Urban	190	38.4	77	32	81	42.6	105	54.4
Rural	350	61.6	164	68	109	57.4	38	45.6
Husband's level of education								
Illiterate	92	18.6	4	1.7	26	13.7	21	10.9
Literate but below middle	41	8.3	22	9.1	19	10	9	4.7
Middle but not high school	93	18.8	103	42.7	41	21.6	23	11.9
High school & above	269	54.3	112	46.5	104	54.7	140	72.5
Religion								
Hindu	204	41.2	139	57.7	156	82.1	164	85
Muslim/Sikh	291	58.8	44	18.3	34	17.9	17	8.8
Christian								
Caste								
SC/ST	84	17	8	3.3	15	7.9	18	9.3
Others	411	83	233	96.7	175	92.1	175	90.7
Husband's Occupation								
On-worker			13	5.4			13	6.7
Primary	133	26.9	28	11.7	44	23.2	35	18.1
Non-Primary	362	73.1	200	82.9	146	76.8	145	75.1
Behavioural Characteristics								
Discussion on Family Planning								
Never	59	11.9	24	10	37	19.5	50	25.9
Once/Twice	284	57.4	66	27.4	100	52.6	81	42
More Often	152	30.7	151	62.7	53	27.9	62	32.1
Husbands Approval								
Approve	491	99.2	234	97.1	182	95.8	184	95.3
Disapprove	4	0.8	7	2.9	8	4.2	9	4.6
Husband's Desire								
Wants same	468	94.5	208	86.3	174	91.6	152	78.8
Wants more	10	2	14	5.8	15	7.9	17	8.8
Wants few	15	3	8	3.3	-1	0.5	9	4.7
Attitude Unknown	2	0.4	11	4.6	0	0	15	7.8

Appendix 3
Logistic Regression Analysis for Use of Male Terminal Method in Punjab, 1992-93

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	.0709	.0170	17.4703	1	.0000	.1766	1.0735
X2	-.0118	.2966	.0016	1	.9682	.0000	.9883
X3a	-.0997	.4825	.0427	1	.8363	.0000	.9051
X3b	.8176	.3309	6.1037	1	.0135	.0909	2.2651
X3c	.5679	.3546	2.5647	1	.1093	.0337	1.7645
X4	.1000	.2742	.1329	1	.7154	.0000	1.052
X5	.3290	.2872	1.3126	1	.2519	.0000	1.3896
X6	.9094	.3598	6.3901	1	.0115	.0941	2.4829

Appendix 4
Logistic Regression Analysis for Use of Male Terminal Method in Kerala, 1992-93

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	.0720	.0082	76.5664	1	.0000	.2219	1.0746
X2	.2453	.1521	2.6026	1	.1067	.0200	1.2780
X3a	.2587	.2630	.9673	1	.3253	.0000	1.2953
X3b	-.0913	.2749	.1102	1	.7399	.0000	.9128
X3c	-.3820	.3069	1.5496	1	.2132	.0000	.6825
X4a	-.7102	.2396	8.7862	1	.0030	-.0670	.4915
X4b	-.2263	.1815	1.5542	1	.2125	.0000	.7975
X5	-.0763	.2542	.0901	1	.7640	.0000	.7975
X6	-.4131	.1498	7.6072	1	.0058	-.0609	.6616

Appendix 5
Logistic Regression Analysis for Use of Male Terminal Method in Karnataka,1992-93

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	.0984	.0128	58.9923	1	.0000	.3296	1.1034
X2	-.2885	.3894	.5488	1	.4588	.0000	.7494
X3a	-.1506	.3487	.1867	1	.6657	.0000	.8601
X3b	-1.0509	.5264	3.9861	1	.0459	-.0615	.3496
X3c	-.5202	.4271	1.4835	1	.2232	.0000	.5944
X4	-.3879	.6655	.3397	1	.5600	.0000	.6785
X5	-.4304	.3299	1.7018	1	.1920	.0000	1.5379
X6	.2762	.3314	.6944	1	.4047	.0000	1.3181

Appendix 6
Logistic Regression Analysis for Use of Male Terminal Method in
Bihar, 1992-93

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	.0553	0.127	19.0927	1	.0000	.1685	1.0569
X2	.3081	.2664	1.3373	1	.2475	.0000	1.3608
X3a	-.1250	.5386	.0538	1	.8165	.0000	.8825
X3b	-.3040	.4278	.5049	1	.4773	.0000	.7379
X3c	.4340	.3258	1.7742	1	.1829	.0000	1.5433
X4	-.3326	.7502	.1965	1	.6575	.0000	.7171
X5	-.3538	.4334	.6666	1	.4143	.0000	.7020
X6	.3643	.2905	1.5724	1	.2099	.0000	1.4395

Appendix 7
Logistic Regression Analyses for Use of Male Spacing Methods in Punjab, 1992-93

Model - 1

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	.0257	.0132	3.7906	1	.0515	.0477	1.0261
X2	.3118	.2296	1.8514	1	.1736	.0000	1.3659
X3	.5230	.1994	6.8783	1	.0087	.0843	1.6871
X4	-.1687	.2141	6213	1	.4306	.0000	.8447
X5	.5942	.2666	4.9667	1	.0258	.0658	1.8116
X6	.1401	.2533	.3057	1	.5803	.0000	1.504
X7a	.2793	.3046	.8406	1	.3592	.0000	1.3222
X7b	.5244	.3251	2.6016	1	.1068	.0296	1.6895

Model - 2

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	.0259	.0134	3.7364	1	.0525	.0488	1.0262
X2	.4311	.2295	3.5290	1	.0603	.0472	1.5390
X3	-.1715	2472	4809	1	.4880	.0000	.8424
X4	-.1460	.2134	.4678	1	.4940	.0000	.8642
X5	.4777	.2618	3.3291	1	.0681	.0440	1.6123
X6	.2991	.2494	1.4386	1	.2304	.0000	1.3486
X7a	.3776	.3030	1.5529	1	.2127	.0000	1.4588
X7b	.6251	.3252	3.950	1	.0516	.0497	1.8685

Appendix 8
Logistic Regression Analyses for Use of Male Spacing Methods in Kerala, 1992-93

Model - 1

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	.0443	.202	4.8127	1	.0283	.0918	1.0453
X2	.5093	.2936	3.0078	1	.0829	.0550	1.6641
X3	-.1217	.2799	1890	1	.6638	.0000	.8854
X4a	.4888	.3713	1.7326	1	.1881	.0000	1.6304
X4b	-.1949	.3238	.3623	1	.5473	.0000	.8229
X7	.4491	.2839	2.5033	1	.1136	.0388	1.5669

Model - 2

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	.0458	.0205	5.0024	1	.0253	.0949	1.0468
X2	.5185	.2977	3.0324	1	.0816	.0556	1.6794
X3	.0315	.3418	.0085	1	.9266	.0000	1.0320
X4a	.4699	.3687	1.6249	1	.2024	.0000	1.5999
X4b	-.1969	.3239	.3694	1	.5433	.0000	.8213
X7	.4587	.2837	2.6135	1	.1060	.0429	1.5820

Appendix 9
Logistic Regression Analyses for Use of Male Spacing Methods in Karnataka, 1992-93

Model - 1

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	-.0316	.0291	.2202	1	.6387	.0000	.9865
X2	1.1266	.4557	6.117	1	.0134	.1450	.3241
X3	.1378	.4265	.1043	1	.7467	.0000	1.1477
X4	-1.6142	.7742	4.3473	1	.0371	-.1096	.1990
X7a	.4915	.5374	.8365	1	.3604	.0000	1.6347
X7b	.6422	.5668	1.2837	1	.2572	.0000	1.9007

Model - 2

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	-.0173	.0300	.339	1	.5634	.0000	.0828
X2	.8944	.4558	3.8501	1	.0497	-.0973	.4089
X3	.7400	.4193	3.1151	1	.0776	.0755	2.0960
X4	-1.4599	.7789	3.5127	1	.0609	-.0879	.2323
X7a	.4972	.5423	.8406	1	.3592	.0000	1.6442
X7b	.5482	.5769	.9030	1	.3420	.0000	1.7301

Model - 3

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	-.0228	.0295	.5968	1	.4398	.0000	.09775
X2	.8171	.4487	3.3154	1	.0686	.0820	2.2639
X3	.9064	.4108	4.8689	1	.0273	.1211	2.4754
X7a	.3462	.5342	.4200	1	.5170	.0000	1.4136
X7b	.5526	.5735	.9285	1	.3353	.0000	1.7378

Appendix 10
Logistic Regression Analyses for Use of Male Spacing Methods in Bihar, 1992-93

Model - 1

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	-.0100	.0163	.3757	1	.5399	.0000	.9901
X2	.4713	.3187	2.1870	1	.1392	.0266	1.6021
X3	.3797	.3619	1.1008	1	.2941	.0000	1.4619
X4a	1.2104	.5572	4.7183	1	.0298	.1013	3.3549
X4b	-.2247	.6236	.1298	1	.7186	.0000	.7987
X7a	.2253	.3825	.3469	1	.5559	.0000	1.2527
X7b	.4586	.4035	1.2919	1	.2557	.0000	1.5819

Model - 2

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	-.0093	.0163	.3306	1	.5653	.0000	.9907
X2	.49268	.3287	2.2463	1	.1339	.0305	1.6366
X3	.1431	.3253	.1936	1	.6600	.0000	1.1539
X4a	1.1947	.5556	4.6240	1	.0315	.0995	3.3026
X4b	-.1589	.6206	.0655	1	.7979	.0000	.8531
X7a	.2543	.3800	.4478	1	.5034	.0000	1.2896
X7b	.5120	.4011	1.6298	1	.2017	.0000	1.1539

Model - 3

Variable	B	S.E.	Wald	Df	Sig	R	Exp(B)
X1	-.0048	.0155	.0967	.7558	.7558	.0000	.9952
X2	.3764	.3177	1.4044	1	.2360	.0000	1.4571
X3	.0802	.3201	.0628	1	.8022	.0000	1.0835
X7a	.2449	.3741	.4285	1	.5127	.0000	1.2775
X7b	.4563	.3955	1.3312	1	.2486	.0000	1.2775