AN INVESTIGATION INTO THE CHOICE OF FEMALE METHODS OF CONTRACEPTION IN INDIA

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I, **SHARMISHTHA BASU**, certify that the dissertation entitled "**AN INVESTIGATION INTO THE CHOICE OF FEMALE METHODS OF CONTRACEPTION IN INDIA**" of **MASTER OF PHILOSOPHY** is my bonafide work and may be placed before examiners for evaluation.

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Dedicated

To

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(SHARMISHTHA BASU)

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INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1 CONTRACEPTIVE BURDEN ON WOMEN

India, in its backdrop of high population growth, was the pioneer to establish a population programme. Through this the state promoted the individual regulation of fertility for achieving national goals. Looking at the temporal trends, prior to 1977 the population programme had strong motivation campaign accompanied by incentives to the acceptors and targets for programme workers and sterilization camps. Vasectomy at that time was the predominant method of acceptance. Backlash against the programme resulted in near abandoning of vasectomies and as a consequence almost the entire burden of contraception fell on women. Today India's Family Welfare programme is over dependent on female sterilization (Gulati, 1996, p. 205) – 98 percent of the sterilizations in India are tubectomies (NFHS-II, 1998-99), even among the reversible methods condom, a safe male method, is less popular than Intra Uterine Device (IUD) and Oral Contraceptive Pills (O.C.Ps) with possibilities of adverse health impact on women. A woman thus has to choose between frequent child bearing and accepting contraceptive along with its risk. The officially sponsored Family Planning Programme in India portrays the emerging gender inequalities- "There is pronounced gender bias in favour of males in the choice of method" (Raju and Bhat, 1996, p. 57). In theory, the programme relies on 'informed choice'- The National Population Policy 2000 affirms the commitment of the government towards voluntary and informed choice and consent of citizens while availing reproductive health care services. However in practice is this choice constrained by programme, cultural factors or individual characteristics? 'Woman's freedom to choose depends upon specific socio-economic relations, national policy, the political climate and culturally determined ideas regarding women' (Gupta, 2000, p. 27). Is the lack of male acceptance a consequence of patriarchy which dictates the choice suited to males? Do programme personnel accept this social structure and accordingly direct their efforts towards promoting female methods? India's national programme has had a history of emphasizing particular methods earlier IUD, then vasectomy and 'until recently the programme emphasis remains skewed towards promoting non- reversible methods, particularly female sterilization' (Santhya, 2004, p. 26). On the whole, we can say that

the present programme has shown a marked insensitivity to the lives and experiences of women concentrating mainly on filling quota. In such a social structure woman's autonomy is not an end in itself but means for attaining the end (fertility reduction). The macro level picture of contraceptive burden has a different frame from the micro level picture which is culture. Gender is an important component of culture as well. In such a scenario where culture affects decision making and behaviour of females, woman's behaviour and decision making can be guided by local reproductive culture. Women have thus become pawns in the interplay of three forces – state, culture, and policy and its administration. The policy perceives to lower population growth through propagation of contraception and culture that gives women little scope for choice. However, there is also a 'wide gap between knowledge and practice of family planning methods among the married couples' (Demographic Research Centre, Trivandrum, 1969). Thus, this study tries to capture the causes of over dependence on female methods specifically female sterilization and brings out if the population policy is gendered and also highlights the socio cultural factors which adds up for such a high tubectomy percentage in India calling for policy makers to popularize male methods along with female methods. Therefore, the contraceptive burden on women will be less if men share the responsibilities.

At the international level the prevailing picture speaks the same story. Male involvement in fertility control has decreased with the advent of the pills and as global contraceptive prevalence has soared up. The ratio of female to male sterilization is now 3 to 1 in China, 4 to 1 in Latin America and 9 to 1 in India (United Nations, 1994). The United Kingdom and the Netherlands are the only countries in the world where the percentage of vasectomised men equals or exeeds the percentage of sterilized women (Ringheim, 1996). However, if patriarchy and technological level of sterilization is common internationally, then what is unique to the Indian context?

According to Bose (2004) "surgical interventions (promotion of male sterilization by NSV technique) cannot bring about social transformation but sociocultural transformation can bring in male population of India who has walked out of Family Planning programme ever since the emergency days" (p.108). Thus for an actual Paradigm shift in the Family Welfare Programme India has a long way to tread.

1.2 INDIA'S POSITION IN THE INTERNATIONAL STERILIZATION SCENARIO

Before analyzing the overdependence on female methods of contraception in India we look at the International picture-"Reliance on methods for men has fallen off dramatically since the advent of the pill" (Ringhein, 1996, p. 89). Countries at the risk of sexually transmitted diseases has increase in number of condom users to some extent but vasectomy has lost ground in Latin America, India and elsewhere with the advent of female sterilization (Vernon, 1991).

A macro-level analysis of the International sterilization pattern has been worked out with the help of Family Planning World Wide Data sheet-2002 Population Reference Bureau. This gives us a clear picture where India stands in reference to the Developed, African, Asian and Latin American countries.

Table 1.1 shows the gender differentials in sterilization scenario world wide. Categorization of countries has been done with M/F ratio, i.e., percentage male sterilization divided by percentage female sterilization. European countries and North American countries are labeled as developed. The table speaks that a few developed countries like U.K, New Zealand and North Europe have M/F ratio of more than 1.0 indicating female sterilization lower than male sterilization. M/F ratio more than one among Asian countries is only in Bhutan but in none among African and Latin American Countries. On the other hand, most of the African and Latin American countries have M/F ratio less than 0.05. Italy, Germany, Bosnia, Slovenia and Central America fall within this group. Some of the Asian Countries like Philippines, Palestine, Syria, Turkey, Kazakhstan, Pakistan, and Laos also fall in the Group of M/F ratio ≤ 0.05. This reveals the extreme skewness of female sterilization. India has a ratio ranging between 0.05-0.1 along with other Asian countries like Thailand, Bangladesh, Vietnam, Korea, and Uzbekistan. Latin American countries like Brazil, Puerto Rico, Paraguay join hands with the above scenario. Thus, the picture reveals that India is not the only country where there is overdependence on female sterilization as a contraceptive method. China, the most populous country the scenario is a bit better with M/F ratio ranging from 0.2-0.5.

Some studies found that lack of training in Vasectomy surgery was limiting access to this method in Mexico however with "an increase in trained providers has facilitated an increase in the number of vasectomy acceptors in Mexico as well as in Brazil and Columbia" (Ringheim, 1996 p.91). In Turkey, training providers used to

counsel men about vasectomy, following aborting has been successful in increasing the number of acceptors to this method (Ringhein, 1996). "Machismo" was presumed to be the limiting factor in acceptance of vasectomy in Latin America, but research points instead to inadequate information, education and accessibility (Bailey *et. al.*, 1991; Vernon, 1991, Foreit, *et. al.*, 1989)

1.3 OBJECTIVES AND STUDY AREA

This study tries to examine the choice of contraception in a gender perspective and seeks to ascertain the factors controlling contraceptive choice in India. It also tries to capture the deep rooted socio cultural elements which generate such a lopsided ratio of female sterilization to male sterilization and other contraceptives. Are there regional religious and socio- economic differentials in the pattern or not? Thus we have taken up the lopsided statistics on overdependence on female methods, with the objective of investigating the factors controlling choice of female method over male method.

The overall approach adopted in this work is briefly noted below; the details of methodology are presented in a later chapter (Chapter 3). The international scenario of sterilization patterns has been worked out with the help of Family Planning World Wide Datasheet. This gives us a clear picture where India stands in reference to the Developed, African, Asian, and Latin American countries. The focus is then on India. First, the changes in the level and pattern of contraceptive acceptance and then use are discussed. Inter-state analysis to capture the macro level regional factors in choice of contraception follows. Finally, individual level analysis to assess the effect of background characteristics on choice of contraception has been carried out. This has been done for the states of Andhra Pradesh and Uttar Pradesh. Table 1.2 shows that Andhra Pradesh has the highest contraceptive prevalence rate in any modern method while Uttar Pradesh has the lowest contraceptive prevalence rate (RCH-RHS, 1998-99). To see the contrasting characteristics of contraceptive behaviour at higher and lower level we have chosen these two states. Along with this the socio-demographic and cultural differences in northern and southern states will also help us identify the factors affecting choice of a female method of contraception and also future intentions to choose a female method over male method, controlling for other variables.

Andhra Pradesh is one of the major states in India, with a population of 76, 210,007 as enumerated in 2001 census and 73 percent of its population is residing in

rural areas (Census, 2001). Hindu population in this state is quite large (86.4 percent), and has 28 percent Scheduled caste population (RCH-RHS 1998-99). RCH-RHS (1998-99) also found out that, low age at marriage and widespread illiteracy are two prominent characteristics of the eligible women interviewed. Seventy four percent of the eligible women in the state started their married life before age 18. Sixty three percent of eligible women in the state are illiterate, 23 percent have had less than 10 years of schooling and 14 percent have completed 10 or more years of schooling. Hence in general, in Andhra Pradesh, the levels of literacy among eligible women and their husband are low. Standard of living as measured by housing conditions reveals 31.7 percent of people living in Kachcha houses. The Total Fertility Rate (T.F.R) in Andhra Pradesh is 2.25 and the Infant mortality rate is quite high: 65.8 (NFHS- 1998-99). The RCH-RHS 1998-99 survey concludes that knowledge of any modern method is high (98.9 percent) but knowledge of any modern spacing method is quite low (36.8 percent). The contraceptive prevalence rate of any modern method, for the state of Andhra Pradesh is generally high (58.7), dominated by female sterilization in general (54.0 percent). Use of traditional method is very negligible.

Uttar Pradesh is also a major state of northern India with a population of 166,197, 921 as enumerated in Census 2001. It has a very low urbanization: 21 percent (Census, 2001). Like Andhra Pradesh it also has a large Hindu population (84.5 percent) and 24.2 percent of its population are scheduled caste (RCH-RHS 1998-99). Illiteracy is also quite prevalent in Uttar Pradesh with 68 percent of the eligible women turned out to be illiterates and only 12 percent of the women had 10+ schooling. Standard of living as measured by housing conditions brings forth that 38 percent of the houses were Kachha. The T.F.R in Uttar Pradesh is quite high around 4 and the infant mortality rate is 86.7 which is quite noteworthy (NFHS-II). Finally we see statistics on contraceptive knowledge from RCH-RHS 1998-99. In Uttar Pradesh knowledge of any modern method (98.9 percent) is quite high so is the knowledge of any modern spacing method (94.5 percent) which is quite different from Andhra Pradesh. Though the knowledge is high contraceptive prevalence of any modern method is quite low (21.6 percent). Female sterilization is mostly used (13.6 percent) but condom use (4.2 percent) is also higher in general and compared to Andhra Pradesh specifically.

1.4 ORGANIZATION OF CHAPTERS

Chapter – 1 starts with the objective of investigating the factors controlling choice of female method over male method at the higher and lower contraceptive prevalence rates. Thus our study area is Andhra Pradesh and Uttar Pradesh with high and low Contraceptive prevalence rate.

Before examining the indigenous context we look at the international sterilization scenario.

Chapter – 2 is the literature review where we have strung the scattered beads of prior research in this area and has brought forth the various socio-demographic factors affecting contraceptive choice in India. However to study choice of a female method we look into various factors affecting choice in more details and their pathways affecting choice of contraception in general.

In ***chapter – 3*** we discuss the conceptual framework, methodology and data base. Our study has used RCH-RHS (phase I and II) 1998-99 because of its larger sample size than NFHS-II (1998-99). Our study has seen choice as a two step process. The woman first decides to use contraception and then chooses among the various methods available. Thus the setting stage for the study is prepared in this chapter.

Chapter-4 looks into the acceptance trend of all modern contraceptive methods and then finally examines the temporal variation in male and female sterilization from 1966-2000. The Ministry of Health and Family Welfare gives us the sterilization scenario that is couples effectively and currently protected by sterilization. In this very chapter we capture the sex- differentials in contraceptive use, couples currently and effectively protected by tubectomy and vasectomy.

Chapter -5 deals with the interstate analysis. Knowledge, an important factor in choice has been looked into over time from 1970-1988 using the All India Surveys by the Operation Research Group on family planning practices in India and NFHS-I and II and RCH-RHS 1998-99 after that.

Finally in ***chapter – 6*** we start focusing our study from International sterilization scenario to India – state and individual level. India has an overall high reliance on female methods especially tubectomy. Here we have used logistic regression to model contraceptive choice as the dependent variable is dichotomous.

Chapter-7 is the conclusions. This is the stage where we can conclude about the factors affecting choice of a female method over a male and also female sterilization over male.

Table 1.1

International Sterilization Scenario

M/F ratio	Developed	Asian	African	Latin American
>1.0	New Zealand, U.K, Northern Europe, Netherlands	Bhutan		
0.5-1.0	Oceania, Switzerland , Australia ,Spain, Belgium, S.Europe ,Canada,U.S.A ,N.America	Korea		
0.2-0.5	Western Europe , Albania,	China, East Asia,Nepal,Myanmar,Tazikisthan	Congo	
0.1-0.2	Finland, Haiti	Asia, Srilanka, Iran, S.E Asia, Japan, Indonesia, Azerbaijan	S.Africa,Bostwana.	
0.05-0.1		S.C Asia, Thailand, **INDIA**, Bangladesh, Vietnam, Korea, N.Yemen, Uzbekistan	Lesotho	Brazil, Latin America, Puerto Rico, Paraguay
<0.05	Papua New Guinea, Italy, Slovenia, Germany, Belarus, Slovakia, Bosnia, Central America.	Philippines, Palestine, Syria, Turkey, Kazakhstan, Pakisthan,Laos	Cape Verde,Namibia,Mauritius, Malawi,Zimbabwe, Uganda, Zambia, Ghana, Madagascar, Cameroon, Sudan, Rawanda, Comoros, Guinea, Mali, Niger, Sierraleon, Gambia.	Cuba, Jamaica, Peru,Nicaragua,CostaRica, Guetamala, Columbia, Carribean

Source: Computed from Family Planning World wide Datasheet; 2002 Population Reference Bureau

(**Note**: M=% vasectomy, F=% Tubectomy)

Table 1.2
Percentage of currently married women age 15-44 years using any modern contraceptive methods, India, RCH-RHS 1998-99

States	Any Modern method
Andhra Pradesh	***58.7***
Arunachal Pradesh	23.8
Assam	28.4
Bihar	23.3
Goa	38.8
Gujarat	52.0
Haryana	52.7
Himachal Pradesh	62.4
Jammu and Kashmir	47.0
Karnataka	57.9
Kerela	57.7
Madhya Pradesh	43.4
Maharashtra	58.3
Manipur	19.4
Meghalaya	13.2
Mizoram	47.5
Nagaland	21.6
Orissa	39.5
Punjab	53.6
Rajasthan	39.0
Sikkim	36.7
Tamil Nadu	49.9
Tripura	40.4
Uttar Pradesh	***21.6***
West Bengal	45.4
India	42.4

Source: Published Report of India, RCH-RHS 1998-99

CHAPTER- 2

LITERATURE REVIEW

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION TO REVIEW OF LITERATURE

India was the pioneer to adopt a national population programme and it has come a long way since 1952. The present statistics on contraception show that 98 percent (NFHS-II 1998-99) of sterilizations in India are tubectomies (I.I .P.S and ORC Macro, 2000). This lopsided pattern which puts a question mark on Family Welfare Programme in India being gendered needs to be addressed. This paper makes a move towards understanding the factors which determine the contraceptive burden on women in India. Greater reliance on female methods may be interplay of programme efforts (Visaria, 1995) and culture. Other questions which need to be answered are whether knowledge influences preference and choice and whether there is difference in knowledge, preference and actual use of contraception. Further attention is to be paid to the question why men are less likely than women to undergo sterilization or a use of male contraceptive deserves further attention. Data specifically on the use of modern male methods show that only a minor proportion of currently married couples were using such methods –Condoms 3 percent and Vasectomy 2 percent. (Santhya, 2004).

Through the literature review we try to see the path prior empirical work has taken and how the present issue is linked to it. First, a theoretical backdrop has been presented to provide a foundation of the paper.

2.2 THEORETICAL CONSIDERATIONS

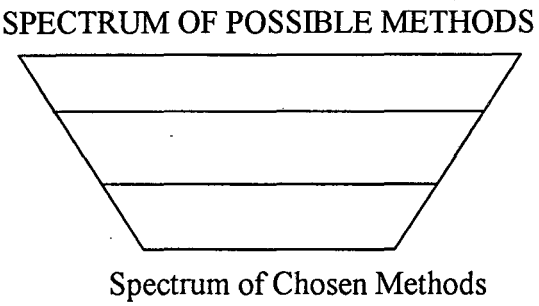
To address the issue on lopsided dependence on female methods we first need to see the factors which determine the contraceptive choice and its actual use.

Choice of Contraceptive Method:

An individual contraceptive behaviour is shaped by both own characteristics and surrounding environment along with availability, cost and quality of services and information about contraceptive methods. According to Palmore and Bulatao (1989) contraceptive choice is pictured as a funnel through which a wide range of choices is reduced to a single choice by cultural, economic, technical, psychological and other factors. Moving downward, one can divide the relevant factors into four groups:

technology and cost, contraceptive suppliers, sociocultural factors, and personal preferences. Technological developments broaden the basket of choice of methods as well as make some methods obsolete. Economic costs influences decisions on whether a method will be mass produced, just as it influences decisions on whether a method will be filtered out at other stages. Contraceptive suppliers determine whether technically feasible methods become accessible to individuals. On the other hand sociocultural factors partly determine which contraceptive methods, among those actually within reach of the ultimate consumer, are chosen.

A model of factors in Contraceptive method Choice (Palmore and Bulatao, 1989)



Progressively narrowed by:
Technology and Cost

Contraceptive suppliers
Sociocultural factors

Personal Preferences

Fig 2.1

Davidson in 1972 has interpreted choice with reference to personal attitudes and values (Bulatao, 1989). He brings in psychology to choice where both consumers and providers are important. These are subjective expected utility models. This is an alternative to acceptability research brought forth by Freedman and Berelson's (1976) analytical framework of the determinants of contraceptive choice (Bulatao, 1989). It highlights the twelve attributes that different contraceptive methods need (medical, technological, ethical, logistic, economic as well as philosophical) in order to be acceptable to potential users. However, this model does not take into account the issues of contraceptive choice in a government sponsored /promoted Family planning programme and its influence on the user's decision making process (Visaria and

Chari, 1998). Other than these there are at least three models combining perceptions and evaluations into judgments (Bulatao, 1989). However, neither of the earlier research has looked into the individual socio-economic characteristics.

The present study uses the theoretical framework suggested by Bulatao (1989) to study contraceptive method choice. According to him, contraceptive method choice is affected by four types of factors: Contraceptive goals, Contraceptive competence, Contraceptive evaluation, and Contraceptive access (Bulatao, 1989).

Contraceptive Goals involve the specific fertility effect a woman or a couple seeks to achieve through contraception. A basic distinction is between the goal of avoiding all future births or postponing the next birth. The other important aspects of goals are births to be averted or the period of postponement desired before the next birth may affect contraceptive choice.

Contraceptive competence is the ability to use a particular method effectively. Some methods require more understanding, care, and diligence than others. Characteristics of

the method, the amount of information available and individual and class differences in access to information all these are important on how well a method is understood.

Contraceptive evaluation involves judgments about the practical and moral implications of using a specific method. The concept of evaluation can, in principle, be extended to cover all relevant features of a method. "Here I use the term more narrowly to refer to aspects of use, not of access, and to side effects or side issues, not to the major goal of contraception, to avert a birth"(Bulatao, 1989, p.282). Bulatao also considers moral judgment as an aspect of evaluation.

Contraceptive access Availability is closely related to use. Promotion of a method- through the media, through face to face contacts, by program personnel, by physicians and so on – can add significantly to method choice. Providing medical advice may be considered a promotional activity. The affordability of a method to the individual is an additional issue; clearly, affordability is affected by the presence or absence of government subsidies.

Factors in contraceptive choice (Bulatao, 1989)

Contraceptive Goals • Limiting versus spacing goal • Number of births to be averted • Length of intended interval • Flexibility in goals	**Contraceptive access** • Availability • Promotion and service • Affordability
Contraceptive competence • Understanding of method • Sexual attitudes and competence • Spousal ability to cooperate	**Contraceptive Evaluation** • Practical preferences-side effects • Practical preferences - conveniences • Moral preferences

However, the present study tries to incorporate some additional variables used in other studies in the Indian context as well as it takes into account various contraceptive methods together. Thus, it aims at finding the factors which influence the choice of one contraceptive method over another in a population which is characterized by a wide choice of methods.

Factors effecting individual contraceptive behaviour are sometimes divided into demand and supply factors and sometimes into macro and micro level factors. The factors which influence demand for contraception are individual desire for additional children that is the number and timing, and sex composition of additional children desired, which in turn is influenced by individual's micro level characteristics such as age, education, work status and family living arrangements (Visaria *et. al.*, 1995). The supply side factors on the other hand cover macro level factors- such as availability, quality and cost of services, are under the control of organized family planning programmes. There may be other macro –level factors outside the control of the family planning programmes, which exert influence on an individual's contraceptive behaviour through the individual's socio- economic characteristics. Factors influencing individual contraceptive behaviour are:

1. The individual desire for additional children.

2. Micro level factors for individual's characteristics.

3. Macro level supply factors that affect availability and cost and quality of contraceptive services.

4. Macro –level demand factors that operate through individual level factors included in the first two categories.

However, the above factors have been also systematized and put into a framework by Bulatao.

2.3 STUDIES USING BULATAO'S FRAMEWORK: EVIDENCE FROM INDIA AND THE WORLD

Some of the field studies conducted in India as well as in many other countries have used Bulatao's framework for analysis. In a study conducted by Bhende *et. al.*, (1991) on determinants of contraceptive method choice, the industrial city of India, Jamshedpur`, provides an interesting contrast with all India level. In the Jamshedpur context, the multinomial logit analysis revealed Religion and caste to be important in acceptance and method choice. Muslims and Hindu Scheduled caste showed significantly lower contraceptive use than the majority population.

Muslims seems to prefer nonpermanent (condom, and natural methods) and have significantly lower use of both male and female sterilization. The authors analyzed it as their family size preferences as well as more direct religious influences. The lower contraceptive use among the Hindu scheduled caste was explained by their lower use of female sterilization, condoms and the natural methods. This study also reveals mother tongue as an important influence on contraceptive use and method choice. Husband's occupation has some influence on method choice and husband's education shows a moderate positive association with the overall use of contraception. Contraceptive evaluation, access and competence of Bulatao's Framework shape contraceptive choice in this study. Thus Jamshedpur population did exercise choice in clear patterns when real choices were made available.

A similar study in an industrial township located in Greater Bombay was conducted on contraceptive use dynamics. In this study two statistical methods- factor analysis and multinomial logit analysis are used. The study reveals that while in the selection of oral pill, contraceptive goal related factors play an important role, in case of the condom and I.U.D, contraceptive competence appears to have a more significant influence and none of the four factors mattered for rhythm method. This

may not be true in the rural areas where self motivation to accept family planning is likely to be very low. Unlike the prior study where contraceptive evaluation also determined contraceptive choice here its role is not there.

Rele *et. al.*, (1989) have looked into the determinants and consequences of contraceptive method choice in India using Bulatao's framework to make contraceptive choice operational. They have brought in program emphasis, attributes of contraceptives, motivation for contraception as well as influence of couple's background characteristics (socio-demographic factors), affecting contraceptive choice in India.

Bulatao's conceptual framework for selecting the determinants of method choice has been used in analyzing Bangladesh Demographic and Health survey data by Mannan (2002). The results of the logistic regression analysis indicate similar results as prior surveys in India. Contraceptive goal is related to choosing non terminal efficient methods such as pills, IUD, injectables.Contraceptive evaluation determine condom use. Religion has also an effect on choice of contraception. Like Indian Muslims, Muslims in Bangladesh do not prefer sterilization. This paper reveals that the programme factor significantly increased the likelihood of using the pills compared to other modern methods.

2.4 SOCIO-ECONOMIC FACTORS IN CONTRACEPTIVE CHOICE: OTHER EVIDENCES WITHOUT USING BULATAO'S FRAMEWORK

Evidences from India

Various studies have been conducted in India on the socio-economic aspects of Family Planning method choice and to determine acceptability. Phadnis (1960) conducted a study on patients who visited the Family Planning clinic in Ramdas Peth; Nagpur. This study includes both qualitative and quantitative methods of data collection. It was found that education and standard of living were the major factors motivating the people to adopt family planning. In this study an easy method, foam tablet has been found to be most acceptable as it is inexpensive and relatively effective. Cultural factors also play an important role in choosing contraception. Whether or not couples want to have additional children at a given point of time is expected to influence their decision about the adoption of contraception (Sarma and Jain, 1974). In this context a reduction in infant mortality along with other socioeconomic factors can increase acceptance of family planning method like

sterilization (Raju and Bhat, 1996; Sekhar and Reddy, 1994). In a Government Hospital in Hyderabad analysis of 4220 acceptors of different methods during 1971-72 was conducted (Rangachari *et. al.*, 1977). Similar to the prior study acceptance of any family planning method is directly related to literacy, more accurately, female literacy (Nair, 1982; Gulati, 1996). This study also shows that religion has always been important in choice of contraceptive method (Bhende *et. al.*, 1991; Rajeratnam, 2000; Raju *et. al.*, 1996; Gulati, 1996). Hindus contribute to 71 percent of sterilization cases while IUD and pills found greater acceptance among Muslims. Socio-economic groups have differed in contraceptive choice. Majority of the women from lower socioeconomic group accept sterilization and their age groups are 25-35 years, with at least 4 children. The IUD is accepted by lower middle class women and pills by middle and higher economic groups. The survey on Industrial workers (industrial units in Faridabad near Delhi) portrays that income has a strong influence on adoption of conventional family planning methods whereas impact of education was absent when all the other variables were controlled. In this paper the methodology used is path analysis (Jesudason, 1978). This contradicts the prior findings where education played an important role in contraceptive choice.

In Kerala a study done in a semi-rural squatter settlement explores the type of sterilization most acceptable among very low income households and why (Gulati, 19). The article highlights the preference noticed among Scheduled Caste for female over male sterilization. The author has explained this phenomenon by fear and suspicion that surgery on men affects their virility as well as physical strength (most of the Scheduled Caste people were engaged in wage employment involving manual work). Institutional deliveries have been linked to higher preferences for female sterilization-"where the suggestion to undergo surgery seems to come from doctor attending the women concerned while she is in hospital for deliveries or abortions" (Gulati, 1979:1186).

Surveys conducted by the Operation Research Group, Baroda on Family planning bring out the reasons for preferring or rejection of family planning method. The KAP study of 3,806 currently married males randomly selected from villages of seven districts of Gujarat and the study on contraceptive behaviour of 4000 male industrial workers selected from ten industries of India (four of these industries were in Western India and remaining in the Eastern Zones) brings out the reasons for preferring a particular method of family planning over another (Khan, 1977). In this area rural

people preferred vasectomy because they perceived it as simpler whereas in urban setting bad health of wife and fear of side effects of tubectomy was the reason cited. Reasons for preferring tubectomy over vasectomy in rural areas were husbands' dislike for vasectomy, fear of side effects and also cash incentive offered for tubectomy camps, on the other hand in urban areas fear of side effects and willingness of wife to undergo tubectomy was given as a reason. Overall preference for sterilization over non-terminal methods was due to lack of faith in it, contrarily non-terminal methods were preferred over sterilization due to various side effects and desire for more children or desire for a son as well as satisfaction with non –terminal methods.

A research in Andhra Pradesh on the determinants of permanent contraceptive methods with the help of NSSO -42nd Round data bring in a new dimension (Sekhar and Reddy, 1994). It is interesting to note that the use of spacing method was quite high (higher than state average) in coastal regions. Sterilization as a permanent method of family planning was prevalent in both urban and rural areas with urban couples opting for higher sterilization percentages. Female sterilization was the predominant method of choice between the male and female operations in rural areas whereas condom was more popular in urban areas. A review of the empirical studies with the help of logit analysis suggests that the variables that are closely associated with family planning acceptance are: education of wife, caste and religion, number of living children, number of sons living, duration of marriage and economic characteristic of household. Gulati (1996) has studied contraceptive methods and choice in Kerala and Uttar Pradesh with the help of multinomial logit analysis of NFHS data. Religion was found to have played an important role in method choice, a similar conclusion was also arrived at by Rangachari *et. al.*, (1977). Use of terminal methods of sterilization is almost negligible amongst Muslims. Tubectomy was rated as the most popular in the study by Raju and Bhat (1996) in Mandya district of Karnataka. This study highlights the strong gender bias in favour of males in a welfare programme like family planning. A higher proportion is aware of female methods and 95 percent of all acceptors are female. The Forum for Woman's Health in World Conference on Women, Beijing (1995), also spoke on similar lines of gender bias in contraceptive choice. The supply side factors (discussed in the framework) like the community based distribution programme as well as Maternal and Child Health Services influence contraceptive choice in India (Rao, 1997). A case

study in Goa and Kerala also attempted to assess the contribution of selected socio-cultural factors in contraceptive method choice through multinomial logit regression of the NFHS data (Rajaretnam, 2000). Similar to the prior studies education of women and religion play a major role in use of traditional and temporary methods whereas economic factors are not much important. Further, urban residence also plays an important role in choice of traditional methods in Goa. The study highlights that in both the states, the choice of sterilization depends largely on the sex composition of the living children and not only on couples' sociocultural and economic conditions.- "in case of sterilization, a strong programme factor operates" (Rajaretnam, 2000, p.11). Other authors like Visaria *et. al.*, (1995) in a case study of Gujarat also bring out programme factor in contraceptive use.

Decision making also plays an important role in contraceptive method use. Decision making process is influenced by socio- economic factors like place of residence, family size and, source of information and types of families like nuclear families and consanguineous family. A study was conducted in G.S.V.M Medical College, Kanpur during 1975-76 with tubectomy acceptors (Misra *et. al.*, 1977) on decision making for tubectomy as a method for family limitation. The author constructed a decisiogram based on two communication pattern of joint and nuclear families. The decisiograms shows decision making process in nuclear families is very simple as compared to complex process in joint families. Local doctors also play an important part in programme. On the other hand in joint families there is direct and indirect communication as well as numerous agencies. So social worker can play a vital role in channelizing the options in favour of females. Strong association between nuclear family and acceptance of family planning methods has been highlighted in studies in the state of Karnataka (Raju and Bhat, 1994).

Saha (1981) has made an attempt to study the socio-demographic characteristics of tubectomy acceptors in a rural community of West Bengal from 1960-1976. Average family size of tubectomy acceptors was higher than the national average. Proportionately less number of Muslims accepted the method. Compared to earlier years, higher proportion of scheduled caste/tribe population accepted the method in recent years. In India female sterilization continues to be the preferred method of permanent birth control. This is followed by IUD which is also for women thus women continues to disproportionately bear the responsibility of contraception in India (Chacko, 2001). To address this skewness it's imperative that the factors that

influence woman's use of family Planning services be fully understood. In the four villages of rural West Bengal, the majority factors that influence contraceptive use are – age of women, the number of sons she has, her religion and village of residence (Chacko, 2001).

Evidences from out side India:

Information on the determinants of contraceptive choice is also available from studies outside India. Like India, in U.S men are less likely than women to seek sterilization. A 1991 National Survey of Men which tries to answer why men are less likely than female to undergo sterilization (Forste, *et. al.*, 1995). The findings are as follows: the male sterilization was somewhat common in older ages. Male Sterilization was also relatively less common if the husband or the wife had less than college education. Race observed strong effect in both bivariate and multivariate contexts as well. Whereas education and religion had weak effects on the choice of the male procedures over the female procedures.

Results from the 1989 Bangladesh Fertility Survey show that education and decision-making influence contraceptive use (Ullah and Chakraborty, 1993). The other significant factors are desire for additional children, visit of family planning workers, sex composition and residence. However the demographic and socio-economic factors, the number of living children, the religion of the respondent and education of husband were not found to have any significant net effect. Conversely surveys in India show strong effect of religion on contraceptive use.

Fertility and Birth Control Survey of China conducted by the State Family Planning Commission of China in 1988 was used to assess the patterns of contraceptive use in China. The study reflects that the most and the least developed provinces of China have similar contraceptive patterns, characterized by a high proportion of IUD and low sterilization, whereas, the middle level has high proportion of sterilization followed by IUDs. Like the Chinese the Vietnamese also rely on a modern method, i.e., IUD. The 1988 Demographic and Health Survey of Vietnam was used in the study to examine the effect of factors that may have played roles in determining contraceptive use and method choice in Vietnam (Dang, 1995). Logistic regression results on predictors of method choice which in the Vietnamese context is mainly between the IUD and traditional methods, shows that husbands' education and number of living children and sexes of children were significantly related to modern method uses. Preference for a traditional birth control method were related to desire

for more sons. Similar studies in urban slums of Bangladesh speak on the similar lines i.e. economic status, woman's education, religious affiliation, age, number of living children, son preference all these strongly shape contraceptive choice. Knowledge, awareness and programme factors also shape contraceptive choice (Barkat *et. al.*, 1997). Similarly a study on female personnel working in Cameroon's Palm Oil Company observed that the key determinants of contraceptive choice were number of surviving children and woman's education (Bessala *et. al.*, 1998).

A study using DHS data from 1990-'96 in 18 developing countries (13 in Sub-Saharan Africa, two each in North Africa and Asia and one in Latin America) on contraceptive decision making reveals interesting results. Contraceptive knowledge is high among husbands and wives in the 18 countries. On the other hand, husbands are more likely than wives to report modern method use (Bankole and Singh, 1998). Uniquely this study highlights reporting of contraceptive use adopting measure on the reporting of both partners as there has been a female only approach to family planning in most of the developing countries. A report on contraceptive dynamics in Guatemala highlights the demand factor which includes a series of demographic and socio-economic variables (age, employment, education, rural- urban residence and ownership of television and radio) as well as ethnicity. The importance of female education is seen here as seen in India (Bertrand *et. al.*, 2001). Ringheim (1996) has given a global perspective on determinants of use of contraceptive methods for men. According to him human factors inhibiting contraceptive use were not always recognized. Policy makers and service providers determine acceptability to some extent. Similar to earlier studies this paper also brings out the demographic, religious or cultural factors influencing contraceptive practice. Along with this safety and efficacy are the major concerns. Supporting the earlier findings a study examining some of the socio- cultural factors affecting practice of contraception of a group of currently married fecund women in Metropolitan Dacca (Chaudhury, 1979) again brings forth the importance of female education. However conjugal role relationship, son preference, religiosity, exposure to mass media and work experience also follow.

Ross *et. al.*, (2002) have scrutinized how contraceptive access affects choice in developing countries. They have cited that temporal information is needed on how access changes over time and its affect on contraceptive choice. A study using data from1989, 1993, and 1998 Kenya Demographic and Health Surveys to examine trends and determinants of contraceptive method choice in Kenya shows how over

time, the use of modern contraceptive methods is higher in urban than in rural areas and the dramatic rise in use of injectibles (Magadi and Curtis, 2003).

2.5 GENDER AND POPULATION POLICY

Gender analysis of the present population policies in India brings forth a highly skewed picture. "The change in nomenclature from family planning to family welfare was deliberate" (Mukherjee, 2002, p. 71). After twenty -five years also nothing has changed, only women are now the "prime targets of India's population control programme facilitated by merging of Maternal and Child Health with Family Welfare '' (Mukherjee, 2002, p. 71). Rizwana (1992) in the paper has highlighted the gender sensitive approach to Family Planning Programme in India. According to her "wife willingly or unwillingly spoils her system with pills and pessaries, bears the bleeding and discomforts of the IUDs and even takes the extreme measures of getting herself sterilized simply because it is ultimately she who has to carry through the pregnancy and child rearing" (Rizwana, 1992, p. 667). Moreover, the linkage between Family Planning and Maternal and Child Health has also brought the overdependence on female methods (Rizwana, 1992; Mukherjee, 2002) of contraception. This indicates "government perspective of looking only at women as agents who can reduce population growth" (Hussain, 2003 p.48). Rizwana (1992) calls for dispelling the prejudice against vasectomy and condoms and equal involvement of men and women in family planning. However, one cannot assess the potential acceptability of modern methods for men without fully engaging the male partners in Family planning (Ringheim, 1996). Current male methods are not comparable to existing methods for women and development of new reversible methods for men will offer comparability to methods available to women. Contrastingly Hussain (2003) in her paper shows that vasectomy an available method for men was not preferred over tubal- litigation for females because it affects man's virility and their masculinity, they are the bread winners and cannot afford to be weakened and their prospects of remarriage would be reduced. Thus, method availability is not a cause for overdependence on female methods. Her field evidences from the study of two religious communities of Delhi slums also shows that religion is a less influential factor than male dominance and cultural norms. She also brings forth that the entire reproduction process is controlled and shaped by traditional gender roles and gender relations within larger social structure through which patriarchy operates. Thus brings forth the patriarchal thrust in

policies. Similarly the paper by Gangoli (1998) talks on the lines of politics of Family Planning Programme. Other than highlighting the insensitivity of popular policies to the lives and experiences of women, concentrating mainly on filling quotas she also brings in the issue of empowerment of women projected as means to ultimate end of population reduction. Gangoli (1998) brings in a feminist edge and questions the male responsibility towards contraception and also health of women.

A case study spanning five generations of a South Indian Family examines features of male involvement in contraceptive use and decision making (Karra *et. al.*, 1997). The Study highlights that male involvement in contraception is not dependent upon change in gender relations but it may lead to changes in these relations over time as female education increases. Another phenomenon which is clear is that male acceptances of family planning need not occur in a context of woman's empowerment, but can result in greater empowerment for women. Overall motivation campaign therefore becomes particularly important for increasing contraceptive acceptance. However, one shortcoming of the study is that it only involves one middle class Brahmin Family.

Another study of male involvement in family planning was carried on in Alwar district of Rajasthan (Sharma, 2003). The study demonstrates that overdependence on female sterilization has led both men and women to assume that contraception is only for women. Moreover non-availability of condoms in the villages can also be a factor in less involvement. This study also calls forth changes in knowledge and behaviour level. On similar notes Bose (2004) calls for social transformation for paradigm shift.

A KABP report (Population Council) India (Khan and Patel, 1997) conducted with rural males shows various findings. There is overdependence on sterilization due to no 'Choice' for contraceptive methods. Moreover, preference was for tubectomy over vasectomy due to several beliefs like 'vasectomy makes men weak and less productive, which they cannot afford since they are the main breadwinners in the family' (women also felt the same way). Vasectomy demands rest for several days, women do not do hard work and tubectomy is easier than vasectomy (Khan and Patel, 1997). This study also revealed that men believed that the 'shift from vasectomy to tubectomy has taken place largely because of the side-effects of vasectomy and the availability of similar and easy tubectomy methods such as laproscopy' (Khan and Patel, 1997 p.3).

Karkal (1998) has raised the curtain on another facet of population policy. In her view 'Government policies and their functioning strengthen the patriarchal attitudes and traditions that oppress women' (p.175). She also shows the over emphasis on female methods of contraception,-"the government's patriarchal attitude which treats women as the targets of the policy of population control" (p.175) is also clear from the paper. Contraceptive technologies like the Norplant (a sub dermal implant) injection and anti fertility vaccine has always violated, the proper functioning of woman's body (Lingam, 1998; Gupta, 2001).

Another paper brings out the importance of gender inequality in determining reproductive choice (Mukhopadhyay and Savithri, 1998). Woman's health movement in South Asia has been primarily concerned with problems of demographic targeting, coercion and promotion of sterilization, and long acting hormonal contraceptives (Petchesky, 2003). One example is China where "coerced abortion, sterilization and contraception persist on women (Xiaorong, 1995). Apart from Asia, female sterilization has been the leading method of contraception in Brazil (Caetano *et. al.*, 2004).

Roberts (1981) has brought forth that family planning is a world wide institution dominated by the interest of the males and their implication on women. Women are in a disadvantaged position because of the limited choice "Thus men, without actually having the power to reproduce themselves, have direct power over means of reproduction" (p.7).

A survey on man's knowledge of and attitude towards birth spacing and contraceptive use in Jordan clearly shows "nearly one third indicate a willingness to use male contraceptives and half believe that man's contraceptive use increase if services were designed specially for them" (Nustas, 1999, p.12). Furthermore, it also brings forth the effect of education and religion. Though 74 percent of the respondents reported that they discuss issues regarding family planning with their wives, it cannot be concluded that couples reach decision together as in Jordan men are seen as main decision makers in family. A limitation of the study is that men were interviewed but not their wives.

Another example of male involvement in Family Planning Programme was taken up by International Planned Parenthood Federation, South Asian region – Experts meeting on "Sexual Males and Responsible Ties" 6-7 September 1996, Bombay, India. A paper gives examples of three male involvement initiatives which have

proved to be successful (Kapoor *et. al.*, 1996). For example, in Bangladesh, religious opposition was the greatest barrier against the use of family planning; however, religious leaders and opinion leaders have been used to give information on family planning. The second example came from Columbia where the barrier was seeded in machismo-culture. Thus, services were accordingly tailored to cope with the people's need. Finally, in Zimbabwe, male motivation campaign succeeded in increasing both man's and woman's knowledge of long term contraceptive method and awareness of male responsibility. Santhya (2004) has called for "promoting shared responsibility and active involvement of men and to re-popularize vasectomy, including information, education and communication campaigns and training surgeons in no-scalpel vasectomy" (p.33). She has also commented that even today gender inequality is plaguing our population program.

Thus, examples from within India and outside India reveal that population policies are gendered and targeting only the female population. However, to increase male participation proper need assessment has to be done with males and service delivery systems have to be equipped to cater to the male needs and the practices and beliefs that family planning is a female activity has to be broken to move forward towards gender equity.

2.6 KNOWLEDGE AND PRACTICE OF CONTRACEPTIVES

Knowledge and use of contraception are the indicators most frequently used by national and international organizations, to assess the success of the Family Planning Programmes.However in the present scenario of over dependence on female methods we want to see if knowledge plays a role in it. We also need to ascertain if there is actual difference between knowledge and use.

Since the 1960, hundreds of fertility surveys and studies of contraceptive knowledge, attitude and practice (KAP studies) have been undertaken worldwide (Rutenberg *et. al.*, 1991). A study carried out by the Demographic Research Centre, Trivandrum, on knowledge and practice of family planning in rural Kerala among currently married males below 35 years throws light on the awareness and knowledge about specific methods of family Planning (D.R.C, Trivandrum, 1969). The Influence of age, religion, education and occupation is also proposed to be studied. The results show that about 67 percent of the Hindus are aware of family planning methods, 76 percent Christians and 65 percent Muslims are aware of family planning methods.

Age and education have a positive correlation with awareness of family planning. Knowledge of sterilization is the highest and that of diaphragm is the least irrespective of religion, age and education.

However, there is a wide gap between knowledge and practice of sterilization. In the Muslims the practice of sterilization is the lowest compared to Hindus and Christians. On the other hand, condom method is found to be more prevalent among the educated persons. This study was conducted only with married males, females were not interviewed. On similar lines the Demographic Research Centre, (1958, 1959) conducted a pilot survey in Trivandrum city on attitudes to family planning of both males and females. Of the persons contacted only 8 percent males and 2 percent females had sufficiently good knowledge of family planning methods. Income and education are important correlates of knowledge as seen in this paper (Shastri, 1977).

Another survey on the attitudes of couples towards family planning in Putupakham area of the city of Madras was conducted by the Institute of Population Studies, Madras. A sample of couples with at least two children was interviewed. Education was a significant factor affecting knowledge. Knowledge of vasectomy was quite widespread and couples were in favour of sterilization. "Also the emphasis on this particular method of limiting family planning programme which preceded the survey might be an important additional factor" (Raman, 1963, p: 92).

Similar studies were carried out by Bhatia, in Pakhowal Community Development Block of Ludhiana district with the main purpose of studying the knowledge and attitudes of rural males towards family planning (Bhatia, 1970). The study reveals that more than half of the respondents had specific knowledge of methods of Family Planning. However there was a gap between knowledge and practice.

A macro International comparison on Knowledge and use of Contraception, conducted by the Institute for Resource Development highlights interesting findings (Rutenberg *et. al.,* 1991). In the countries in which DHS surveys were conducted, knowledge of at least one family planning method is extensive: in 17 of the 25 countries, over 90 percent of the women had heard of at least one method. The percentage of married women knowing five or more contraceptive methods is between 50 percent -80 percent in Botswana, Kenya, Togo and Zimbabwe all of the North American and Asian countries, and in Ecuador and Peru .Similar to earlier surveys this report also brings forth a positive co-relation between contraceptive

knowledge and education with greatest differentials occurring in countries where the overall level of knowledge is less than 90 percent.

The literature and the surveys give a picture of the demographic, social and economic characteristics of the people with contraceptive knowledge. It also gives evidence from India about the gap between contraceptive knowledge and practice. However, these studies do not bring into the fact if knowledge shapes preference or overdependence on female methods, i.e., is it knowledge of specific contraceptive methods which shapes the contraceptive burden on women. Moreover, it also does not bring forth the reasons why there is a gap between knowledge and practice.

2.7 INDIA'S FAMILY PLANNING PROGRAM: PAST AND PRESENT

When India launched its Family Planning programme in 1952 it was first embraced by men. Vasectomy and condoms dominated the programme and many men voluntarily and willingly adopted both. In the mid 1960s Lippe's Loop, an intra uterine device (IUD) was introduced. After the sixties oral pills were also introduced. However, after the vasectomy scandals in 1976 women form the prime targets for population control and contraceptives and the contraceptive available for in the Family Welfare Programme are women centered (Mukherjee, 2002). Harmful hormonal contraceptives tested on women also need mention like the injectables-Depo-Provera and Net-en or the implants like Norplants. Thus the state is oblivious of the ill-effects of contraception on woman's health (Fazalbhoy, 1988; Rao, 2001; Eschen *et. al.*, 1993).

2.8 CONCLUSIONS

The literature review was conducted to address the question why there is over dependence on female methods of contraception in India. Is it because of cultural factors, programme effort or differences in knowledge? Hence one needs to know the factors effecting contraceptive choice in India. Plausibly religion, caste, occupation, education, contraceptive goal, decision making, standard of living, play an important role in contraceptive choice. The review has extensively brought forth the socio-demographic factors influencing contraceptive choice. Only two articles have highlighted the role of programme factor and role of policy makers or service providers in influencing contraceptive choice-studies have shown that providers have a distinct bias towards sterilization. In a qualitative study of rural Karnataka medical

officers were biased towards sterilization (Visaria, 2000). However, the actual mechanism of the programme factors or the provider's bias has not been studied in details. Thus, this area needs further research. Hence, it must be noted that the demand side factors as well as the supply side factors of contraceptive choice have to be looked into to reach a conclusion on contraceptive burden on women in India. Though some authors have addressed the issue of gendered population policy, making women as the target but they have not gone into the depths of posing a question why or tracing its reasons. Only backlash against the post vasectomy scandals has been referred, perhaps to put forth some reasons. Combining Maternal and Child Health Programme with Family Planning Programme has been cited as a reason for overdependence on female methods of contraception at present. The earlier surveys have also neglected the role of culture, patriarchy, and woman's autonomy. Male involvement in family planning can throw some light on the contraceptive burden on women. For some researchers male involvement is not dependent on changes in gender relations but it can lead to changes in gender relations and women empowerment. In a paper it was revealed that male involvement was low because availability of male methods was not there. Thus, the supply side is also important. However, the proper mechanism of male involvement and contraceptive choice was not understood through this literature review.

Coming to the issue of knowledge influencing a particular method choice we can see that the literature has addressed only the socio-economic factors influencing knowledge and practice. However, the family planning programme talks about "informed choice" which has not been looked into. The literature review reveals that there exists a wide gap between knowledge and practice but does not go for the factors or reasons behind it. Thus to look into the reasons of overdependence on female methods the specified questions need to be addressed are:

Does the programme factor play a role in contraceptive choice in India?

What is the role of patriarchy, culture and knowledge on overdependence on female methods?

What is the role of individual background characteristics and preference?

CHAPTER- 3

CONCEPTUAL FRAMEWORK & METHODOLOGY

CHAPTER 3

CONCEPTUAL FRAMEWORK AND METHODOLOGY

3.1 ANALYTICAL FRAMEWORK

The previous chapter on literature review has aligned the loose thoughts in a proper direction bringing up a more detailed insight into choice of a contraceptive method. This chapter presents the conceptual framework and methodology used in the study. Prior studies have shown the importance of macro level supply factors such as family planning program factors to directly and indirectly affect contraceptive choice. Individual level socio-economic and demographic factors as well as intended choice also play an important role in choosing a contraceptive method. The importance of cultural factors and technology cannot be ruled out. The conceptual framework of the paper portrays the relationship among the different factors (Fig 3.1).

Program Factors

State institutions and actors play a central role in policy formulations and implementation. Following Joel Migdal, the state is "a field of power marked by the use of threat and violence". State which is at the apex of the structure through its instrument of population policy tries to shape individual choice in achieving national goal of fertility reduction. According to Makintosh, policy is divided into policy as prescription and policy as process. Policy as prescription is just that –what the Government/State prescribes for achieving policy objectives and goals based on a set of assumptions that the state is inherently benevolent and know what is for its citizen. Policy as process seeks to explain how different institutions and actors who are involved, or affected by the policy, take a proactive stance in challenging policy. The interaction between the prescription and process is forever dynamic, where comes in coercion, disincentives and incentives to subvert efforts it perceives to be contrary to its objectives and attempts to put a brake on the process of individual self determination. It can also restrict options in the design and promotion of specific types of contraceptives.

In the studies conducted by Visaria et al., (1995) on Gujarat, programme factor affecting use of contraception has been addressed. Bulatao (1989) also supported the view and stated that "Promotion of a method by program personnel can add significantly to method choice" (Bulatao, 1989, p. 282).

Program bias on a specific method will lead to provider bias on that method. This makes the specific method readily accessible to the couples moreover the couples have awareness and knowledge about the method which ultimately leads to choosing the particular method of avoiding pregnancy. Promotion of a particular method also means making it available for choice through service delivery. The integration of Maternal and Child Health care with Family Planning has probably contributed to the program bias for female method in particular. When people come to seek maternal health care promotion through counseling of a particular contraceptive brings knowledge about the method as well as availability leading to choosing that method. Above all "even though the Indian family planning program in principle follows a cafeteria approach to method provision, in reality it has given priority to particular methods from time to time"(Rele *et. al.* 1989, p. 194). The prior survey (Second All India Survey, conducted in 1980-81 by the Operation Research Group in Baroda) has reflected the program effort through knowledge level changes as well as contraceptive prevalence rate.

Socio-economic and Demographic Factors

It is well recognized that socio-economic factors affect choice between contraception and no contraception however we try to understand their role in choice of a specific method.

The ultimate filter is the personal preference which in turn is affected by whole lot of above mentioned factors and finally a specific method of contraception is chosen at a specified time.

Age: Age of a woman influences contraceptive choice through fertility goals. Fertility goals are of spacing and limiting. When age is low and fertility goals is to space, non-terminal methods of contraception are used. Contrarily, when at a higher age with fertility goals of limiting, terminal method of contraception is chosen. Thus, age plays a significant role in contraceptive choice. Prior studies have also supported this (Rele *et. al.* 1989; Gulati, 1996).

Education of Wife: Education leads to all round development of individual. With education comes awareness of family planning methods which erases all fear and misconceptions. Moreover, education brings about higher societal positions. This increases autonomy and decision making power of women which further shapes choices of contraception methods (Nair, 1982; Gulati, 1996). Education also brings in the competence to use the contraceptive method (Bulatao, 1989). "The ORG Survey reported that among women with less education the preferred method was sterilization, followed by condom, pill and IUD, but among women with more than high school education the preferred method was condom." (Rele *et. al.* 1989)

Education of Husband: India being a patriarchal society most of the decisions are taken by the husband. In this regard, husband's education is important in choosing a contraceptive method. Many studies have brought forth the role of husband's education in contraceptive choice.

Religion: Religion is a very important social variable as each religion has its unique set of beliefs and customs. This has a strong influence on individual behaviour i.e. the customs and beliefs either restrict or promote a particular contraceptive method leading to choice of that method. Prior findings show that in India Hindus go for surgical methods like sterilization whereas Muslims prefer pills and condoms. Thus, religion plays an important role in contraceptive choice.

Caste: A study conducted by Rajaretnam (2000) on Kerela and Goa with NFHS-I (1992-93) data show the effect of caste on contraceptive choice. Raju and Bhat (1996) also in their study on Mandya district cite the independent effect of caste on contraceptive choice of Family Planning. In another study on currently married men in United States, race shows significance in choosing sterilization (Forste *et. al.* 1995).

Standard of Living: Standard of Living brings in the income effect which has been proved by earlier studies to be significantly related to contraceptive choice. Income increases or decreases the availability of a particular contraceptive method thus directly affecting choice. Indirectly income can affect choice by education, workstatus and interspousal communication. Prior examination has portrayed that lower socio-economic groups accept sterilization, Intra Uterine Device by lower middle class women and pills by middle and higher economic groups.

Place of Residence: The place of residence whether rural or urban plays an important role in contraceptive choice through accessibility. Visaria (2000) has concluded that the national-level surveys conducted by ORG and NFHS and smaller district level studies reveal sterilization to be more common in rural areas and the use of the reversible method in urban areas. Other studies have also highlighted place of residence's effect on choice (Rele *et. al.* 1989; Manman, 2002).

Cultural Factors: Culture another factor contributing to contraceptive choice is defined by Murphy as a set of values and norms that constrain and permit action by establishing ideological parameters, offering reference points for rational decision making and providing cultural resources- values, norms and beliefs.

Gender is an important component of culture. It refers to the way in which biological differences between sexes are used in classifying, valorizing and also making meaningful

social relationships between human beings. Son preference is an aspect of culture in Indian society. Dang (1995) in his study on Vietnam has found choice for a traditional birth control to be related to a desire for another son. Another study on Bangladesh has shown " As the number of living male children increases, couples are significantly more likely to use permanent methods and are significantly less likely to use the pill" (Mannan, 2002, p.360)

FRAMEWORK FOR CONTRACEPTIVE CHOICE

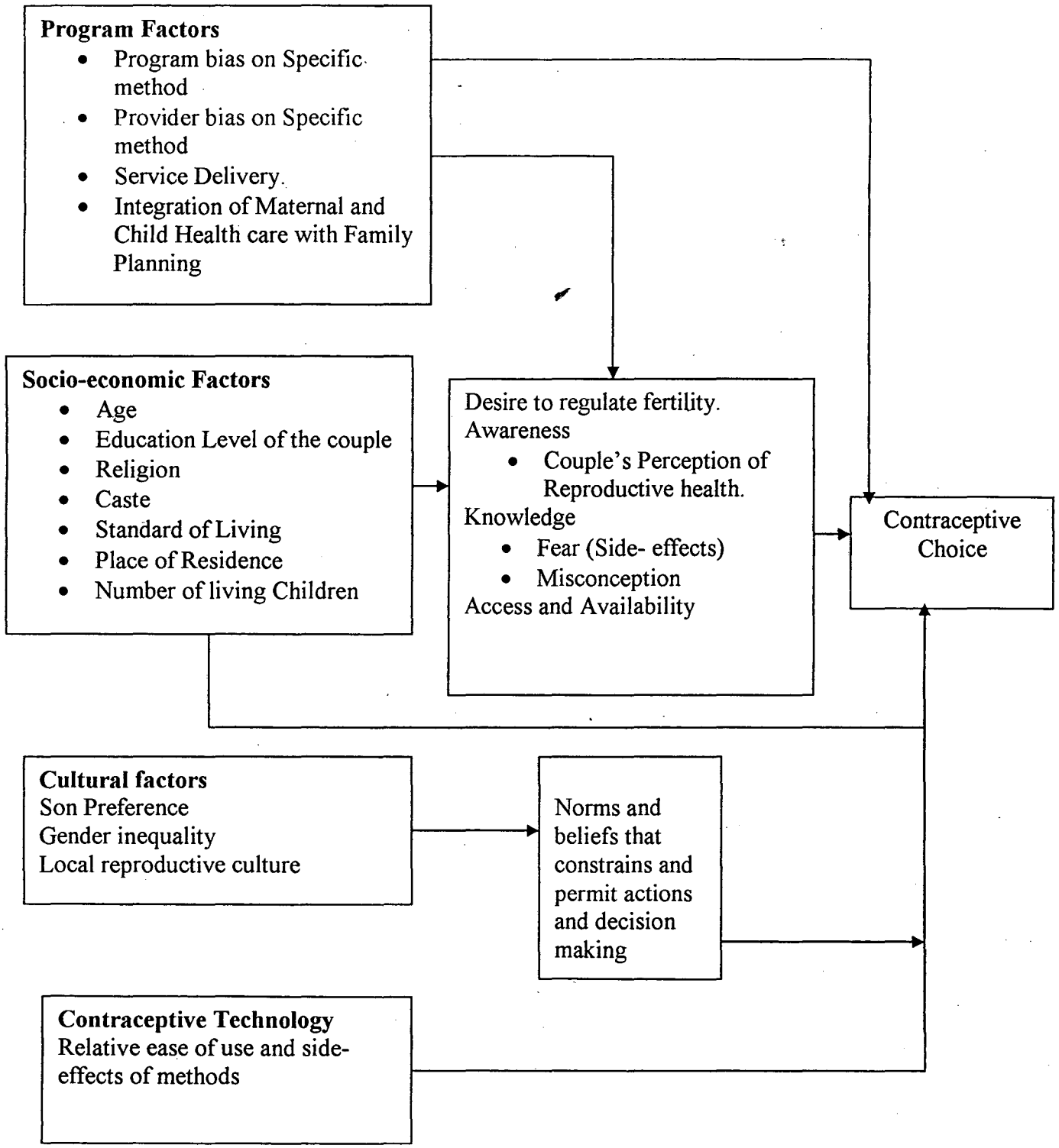


Fig-3.1

In the previous chapter the models by Palmore and Bulatao (1989) and Bulatao (1989) were discussed. According to Bulatao (1989) contraceptive method choice is affected by four types of factors: Contraceptive goals, Contraceptive competence, Contraceptive evaluation, and Contraceptive access. However, the model used here tries to incorporate some additional variables used in other studies in the Indian context as well as it takes into account various contraceptive methods together. Thus, it aims at finding the factors which influence the choice of one contraceptive method over another in a population which is characterized by a wide choice of methods. The *variables used* to assess the four factors of contraceptive choice are:

Contraceptive Goal

1) Age – Dang (1995) in his study on Vietnam has used age as one of the independent variable affecting choice. The choice of contraceptive changes from non-permanent to permanent with increase in age (Rele *et. al.*, 1989).

2) *Number and sex of Living Children* (Bhende *et. al.*, 1991) – Earlier studies (Kulkarni, 1999) have brought in gender preference contraceptive use. However, in this study we try to see whether sex composition effect choice of contraceptive methods. We have used this variable to make choice of contraception operational. This has not been used in the original framework of choice developed by Bulatao. Mannan (2002) in his study on Bangladesh has taken number of living children and number of living sons. Rele *et. al.*, (1989) has concluded that contraceptive choices vary with number of living children. Raju and Bhat (1996) in their study on Mandya district has broadly taken up gender issues like sex of living children and also number in choice of family planning. Gulati (1996) as well has explored number of living children as an independent variable to test its effect on choice of contraceptive in Kerala and Uttar Pradesh.

3) *Outcome of Last Pregnancy*- Bhende et al. (1991) has used this indicator in their study as "whether last child died". Gulati (1996) has cited the variable affecting choice in Kerala and Uttar Pradesh.

Contraceptive Competence

1) *Knowledge of Family Planning Methods*- For effective use of a contraceptive method, knowledge about the contraceptive is needed. According to Ringheim (1993, p. 91) "If a person does not know of a method, or has heard of it but does not have enough information to use it, that method is not an option". Nustas (1999) has also supported his views. Verma and Baburajan (1994) have also used this in their study on India.

2) Wife's education- Most of the studies have taken into account woman's education (Bhende *et al.*, 1991; Verma and Baburajan, 1994; Sekhar and Reddy 1994; Mannan, 2002). Our study also utilizes this variable as wife's education. Barkat *et. al.*, 1997 in their study on urban slums of Bangladesh has seen the effect of wife's education on choice. As shown in the conceptual framework education brings in more competence to use contraceptive methods.

Contraceptive Evaluation

This relates to the judgments about the practical and moral implications of Family Planning methods. Our study incorporates religion, caste and side –effects. The study by Bhende et al., (1991) uses only religion and ethnicity on the other hand Verma and Baburajan (1994) has taken side – effects to be the only factor assessing the couple's evaluation aspect of contraception. Mannan (2002) has taken religion, side-effects with other variables for contraceptive evaluation. Rele *et. al.*, (1989) has cited attributes of contraceptive (side-effects) to be affecting choice. In a study on two localities in Delhi (Gautampuri and Zaffrabad of Sultanpur constituency) by Hussain (2003) attempted to bring in religion to evaluate contraceptive choice.

Contraceptive Access

It is the availability and affordability of contraceptive methods. In this study, affordability which is measured in economic status has been captured through these variables.

1) *Standard of Living-* Verma and Baburajan (1994) have put it as monthly income whereas Bhende *et al.*, (1991) has brought into Husband's occupation. Gulati (1979) has explored the contraceptive choice in the very low income households of semi- rural squatter settlements of Kerala. Further, Rajaretnam (2000) in his paper on Goa and Kerala has attempted to study the income effect as measured by standard of living index affecting choice of contraception.

Bulatao in his Framework has talked about promotion and service –this is where the Family Planning Program effort comes in. In this study a variable has been specially used to capture Program for a particular method leading to a specific choice (motivation to use a particular method). "Couples' motivations for using contraception play a significant role in their choice of methods" (Rele *et. al.*, 1989).

In Bangladesh study by Mannan (2002, p. 359) place of residence is found to be "significant in most of the initial models even after controlling for factors such as accessibility to current methods, cost of current methods, Wife's education and husband's education". Magadi and Curtis (2003, p. 149) shows that in Kenya "over time the use of

modern contraceptive methods, especially long term, is higher in urban than in rural area, where as the pattern is reverse in rural areas." In this study also Place of Residence has been used to assess the accessibility of contraceptive methods.

Various studies using Bulatao's Framework have incorporated many other variables to capture Contraceptive Goal, Competence, Evaluation and Access. This study also modified Bulatao's Frame-work and includes and drops various variables used by him in his original framework.

Independent variables for Bulatao's framework used in this Paper to make contraceptive choice operational are:

Contraceptive Goals	**Contraceptive Evaluation**
• Age of Wife • Desire for more children (Used only in the intended choice analysis) • Number and sex of the Living Children. • Outcome of last pregnancy.	• Ethnicity • Religion • Side-effects
Contraceptive competence	**Contraceptive Access**
• Knowledge of Family Planning Methods • Education Level a)Husband's education b)Wife's education	• Standard of living • Place of Residence • Family Planning Program effort

3.2 RESEARCH QUESTIONS

In order to explore the issues of contraceptive choice in India, a number of research questions as noted below, need to be answered.

Is the greater reliance on female methods contributed by difference in knowledge and preference?

Is there a difference between knowledge, preference, and actual use of a particular method?

Is the gender bias in contraceptive use because of patriarchy?

Are the programme efforts promoting skewed non-reversible methods, particularly female sterilization?

Does choice of contraceptive method vary by region and level of contraceptive prevalence?

What role do socio-economic, background characteristics play in contraceptive choice?

3.3 RESEARCH DESIGN AND DATA

The analytical framework described above guides the approach to research in this study. It must be noted that set of analysis would be required to meet the objective of the study. There are certain questions that can be analyzed on the basis of data on individual couple's contraceptive choice and practice but certain issues call for macro level analysis.

First, changes in pattern of acceptance over time need to be analyzed. This will inform us on whether the pattern has remained unchanged, and if not, points of break. This analysis could be linked to available information on developments in contraceptive technology and changes in program strategies. Chapter 4 addresses this issue. For this purpose, trends in method wise acceptance taken from statistics provided by the department of Family Welfare. Contraceptive Prevalence Rates have been computed from the acceptance data following demographic techniques. Details of the sources and quality of data the, the demographic techniques and the validity tests are provided in Chapter 4.

Also of importance is the question on regional variations in the acceptance pattern given the diversity in India in socio-economic conditions, one would expect certain variations across states or regions of India. These could conceivably be on account of socio-economic variations, cultural differences, and program factors. Therefore an analysis of acceptance pattern across states has been carried out to see first, whether the pattern vary substantially, and subsequently, to examine if the differences are accounted for by socio-economic factors. These aspects are covered in Chapter 5.

Finally the Bulatao model as well as the framework developed here looks at the choice of an individual. Determinants of individual choice are examined employing multivariate analysis in Chapter 6. This analysis looks both at the choice who have used a method and the preference of those who intend to use a method.

The principle source of data for the analysis of choice, both the interstate and the individual analysis the RCH-RHS 1998-99. Reproductive and Child Health-Rapid Household Survey (RCH-RHS) conducted in two phases (Phase-1 in 1998 and phase-2 in 1999).

Reproductive and Child Health-Rapid Household Survey (RCH-RHS 1and 2):

These surveys were conducted in two phases. The International Institute of Population Science (I I P S, Mumbai, 2001) was designated as the nodal agency for carrying out the surveys. The first round was conducted during May 1998 to November 1998 in 252 districts from 25 states and five Union Territories (excluding Lakshadweep Islands and Dadra and Nagar Haveli) of the country. The second round was conducted during 1999 in the remaining 225 districts from 25 states and Union Territories (excluding Delhi and Chandigarh). The focus of the survey was on the

a) Coverage of Ante Natal Care and immunization services
b) Extent of safe deliveries
c) Contraceptive prevalence
d) Unmet need of family planning,
e) Awareness about RTI/STI and HIV/AIDS
f) Utilization of the government health services and users' satisfaction

The study included a total of 529, 817 households which included 474, 463 eligible women (currently married women in the age group15-44 who are usual residents of the surveyed Households) and 198, 566 men in the age group 20-54 were interviewed.

The RCH-RHS has used two types of questionnaires, 1) **the household questionnaire** and 2) **the women's questionnaire.** The household schedule contains one section on background of the household, vital events and morbidity. The household questionnaire also include information on male in the age group of 20-54, this has information on respondent's background and awareness about RTI/STI and HIV/ AIDS as well as preference of contraceptive methods and reasons for preferring a particular method. The woman's questionnaire has the following four sections: woman's characteristics and summary of fertility history, contraception, utilization of government health services and client's satisfaction and awareness about RTI/STI and HIV/AIDS.

The RCH –RHS 1 and 2 has specific information on male preference and programme efforts for choosing a contraceptive method so it is used in this study in preference to the more commonly used NFHS.

The Reproductive and Child Health Survey was conducted in two phases in Andhra Pradesh as well as in Uttar Pradesh. The other details are as follows:

Sl. No.	Name of the State	Name of the Agency conducting the survey	Household Surveyed	Eligible women* interviewed	Men** Interviewed
1.	Andhra Pradesh	PRC,Vishakapatnam	24,034	22,387	10,128
2.	Uttar Pradesh	MODE, New Delhi and PRC, IEG, New Delhi.	72,262	69,337	37,731

*Currently married women of age 15-44, whose marriage is consumated and are usual residents of the surveyed households.

** Men age 20-54 who are usual residents of the surveyed households.

As mentioned in the study area we have chosen these two states for our individual level analysis to capture a differential picture in contraceptive choice behaviour. Andhra Pradesh has the highest contraceptive prevalence rate in any modern method while Uttar Pradesh has the lowest contraceptive prevalence rate (RCH-RHS, 1998-99). To see the contrasting characteristics of contraceptive behaviour at higher and lower level we have taken these two states. Along with this the socio-demographic and cultural differences in northern and southern states will also help us identify the factors affecting choice of a female method of contraception and also future intentions to choose a female method over male method, controlling for other variables.

3.4 METHODOLOGY

An individual contraceptive behaviour is shaped by both own characteristics and surrounding environment along with availability cost and quality of services and information about contraceptive methods. To capture the macro level factors we have taken up state level analysis for factors controlling contraceptive choice. Multiple Regressions has been used to capture the effect of independent variables on the dependent variable (Rao and Miller 1971; Retherford and Choe, 1993). Multiple regression analysis is done and the equation is represented in the linear form i.e.

$$Y=\alpha + \beta 1x1+ \beta 2x2 + \beta 3x3 +.....+ e$$

Where Y is the dependent variable and '*x*' is the independent variable. α and β are the interception and slope of the straight line and e is the error term. The specific variables used are given in Chapter 5 that presents the analysis.

Finally we have taken up individual level analysis to capture the effect of individual characteristics on contraceptive choice for the states of Andhra Pradesh and Uttar Pradesh. In our study choosing a contraceptive method is a one step process where couple chooses male sterilization or female sterilization, male methods or female methods of contraception. Overall the women face the choice of male method, female method and no method.

Thus the first part of the analysis can be modeled by a binary logit model as the dependent variables are dichotomous. Multiple regressions cannot be used as it cannot predict the values of a dichotomous dependent variable. This is because when we try to predict the values of a variable coded say 0 or 1 we can consider the predicted values to be probabilities that is, the probability of obtaining a predicted value of 1. In a multiple regression with a straight line fit to the data it is often the case that values less than 0 or greater than one are predicted. Logistic regression is designed to use a mix of continuous and categorical predictor variable to predict a categorical outcome. It is often seen as an alternative to discriminant analysis.

The Logistic Function: The basic form of the logistic function is

$$P = 1/(1+e^{-z})$$

Where Z is the predictor variable and e is the base of the natural logarithms, equal to 2.71828 and P is an estimated probability (Retherford and Choe, 1993). The Logit of P is derived from the logistic Function which is

$$\text{Log } [P/(1-P)] = Z$$

The quantity P/1-P is called the odds, denoted more concisely as Ω (upper case omega) and the quantity **Log [P/ (1-P)]** is called the log odds or the logit of P.

Thus

$$\text{Odds} \equiv P/1-P \equiv \Omega$$

And

$$\text{Logit } P \equiv \log [P/(1-P)] \equiv \log\Omega$$

In case an explanatory variable is categorized, the reference category is specified. In such cases the ratio term exp ($B_{k)}$ for a particular category is the odds ratio, that is, the ratio of odds for the category K to the odds for the reference category. The variables used in the analysis are described in Chapter 6.

CHAPTER- 4

TRENDS IN CONTRACEPTIVE ACCEPTANCE AND PREVALENCE

CHAPTER 4

TRENDS IN CONTRACEPTIVE ACCEPTANCE AND PREVALENCE

4.1 TRENDS IN CONTRACEPTIVE ACCEPTANCE

With this chapter we start focusing on our objectives. The fact that today female use dominates the overall contraceptive prevalence in India as in many other countries is quite noteworthy. However, we must see whether this has always been the case overtime or not. Contraceptive acceptance data from program are available over time from various Year Books (India, Department of Family Welfare) from 1960s onwards to 2001.

Table 4.1 shows the acceptors of contraception in India from 1956-2001. Until 1976-77 vasectomy acceptors were more than tubectomy acceptors. Though in 1976-77 we see a jump in number of acceptors of both tubectomy and vasectomy, vasectomy still shows a higher trend than tubectomy. However, after 1977, which marks the backlash against the compulsory sterilization during the emergency, there has been a sharp fall in both vasectomy acceptors as well as tubectomy for the immediate year 1977-78. After that there has been a steady rise in tubectomy acceptors even till date. For the reversible method we see that consistent rise has started from the year 1983-84 to 2001.

Acceptance figures provided by the program are not reliable as these include only those where service is directly provided by program or reported to the program (Rajaretnam, 1998) Besides many a times there is "mis-reporting by health workers of non- acceptors women as acceptors" (Visaria *et. al.*, 1995 p. 104). However, it has been observed that while misreporting for the acceptance of reversible methods is large, for sterilization this is not the case (Visaria *et. al.*, 1995). Besides the reversible method the effect is only during use, but sterilization has a long term effect. Hence though number of acceptors of reversible methods may be large they have been playing a very small role in impact.

The data on condom and pills are not the number of couples who accepted this but equivalent couple years of use computed based on distribution of number of pieces of condom and oral pills. In this chapter we concentrate on sterilization users only because it is the most favored method of contraception in India and also has a long term effect on fertility. Thus, we calculate CPR separately for vasectomy and tubectomy from acceptance data.

4.2 COUPLES CURRENTLY AND EFFECTIVELY PROTECTED DUE TO TUBECTOMY AND VASECTOMY

The Ministry of Health and Family Welfare gives us the sterilization scenario that is couples effectively and currently protected by sterilization. However, this does not capture the sex differentials in contraceptive use. To capture the sex differentials in contraceptive use, couples currently and effectively protected by Tubectomy and Vasectomy have to be computed separately and examined. The data base and methodology used to calculate the couples currently and effectively protected by tubectomy and vasectomy are given below:

Data Base

The total number of acceptors for each year starting from 1960-2001 is provided by the service statistics. The percentage acceptors of vasectomy and tubectomy are taken from Family Welfare Program of India Year Book (1960-2001). The life expectancy is taken from estimates provided by the Registrar General from the Census data up to 1971 and by the Sample Registration System after that. This has been interpolated to give life expectancy for each year from 1960-2000. The male female survival rates are taken from U.N Model Life Tables, South Asian Pattern, corresponding to the specified life expectancies.

Methodology

The assumptions used in this calculation are that: fertility is within marriage and husbands are on an average five years older than wives. The percentage acceptors of tubectomy age wise i.e. 15-19, 20-24 up to 45 along with the total tubectomy acceptors of that specific year gives the age wise distribution of tubectomy acceptors for that year. First, five-year survival ratios probabilities of wife and her husband remaining alive are calculated either from life tables for the population covered or from model life tables believed to be representative of that population. The survival

probabilities for wives should be arrayed by standard five-year age categories (15-19 to 20-24, 20-24 to25-29, etc.). The husbands' survival rates are obtained for different five-year categories, taking into account the mean age difference between husbands and wives. Thus as husbands are assumed to be five years older than wives on an average, husbands' survival rates are computed for the 20-24 to 25-29, 25-29 to 30-34; etc. age categories (Laing, 1982). The corresponding survival rates for wives and husbands should then be multiplied together to yield age-specific joint survival rates. Table 4.2 shows the steps.

With the help of Joint survival rates the number of acceptors is projected for every five years till all the acceptors of that specific year phase out of child bearing ages. This calculation is done for each year of acceptance from 1960-2001 for both vasectomy and tubectomy. Thus we get the total number of couples protected for each year's acceptance from 1960-2000 for both vasectomy and tubectomy at five year intervals. We interpolate and get the point data for each year for a specific year's use. From each of these tables of acceptance year from 1960-2000 we take up the totals for age wise break ups for each year of users. Consequently we get the year wise couples currently and effectively protected by vasectomy and tubectomy separately (Table 4.3) from 1960-2000.

Finally the Contraceptive Prevalence Rates are calculated separately for tubectomy and vasectomy with the help of estimated number of couples in the reproductive age group from Family Welfare Year Book for the years 1960-2000. Table 4.4 provides the results.

4.3 COMPARISON OF METHODOLOGY WITH MINISTRY OF HEALTH AND FAMILY WELFARE

The Year Books of Family Welfare Program gives couples effectively and currently protected by sterilization. The results obtained above show some discrepancies with the Ministry results (given for vasectomy and Tubectomy pooled) as the methodology is different. The Ministry of Health and Family Welfare has used a constant attrition rate for vasectomy and tubectomy acceptors:

Method /period	1st Five Years	2nd Five Years	3rd Five years	4th five Years	5th five Years
Vasectomy	4.11%	7.14%	13.04	18.74	33.50
Tubectomy	2.72%	6.20%	13.52%	28.65%	53.89%

Source: Year book of Family Welfare Program, 1998.

This is an approximate method of calculation. The methodology used in this study is more appropriate as it follows the method of projection. This methodology is stated in the U. N manual IX and is the most widely used method. It can be seen from Table 4.5 that the prevalence rates computed here are very close to the estimates by independent surveys, that is, NFHS-2 and RCH-RHS, for the year 1998-99. This raises confidence in the rates computed in this chapter.

Interpretation:

Table 4.3 represents the Couples currently and effectively protected by tubectomy, vasectomy and sterilization in India from 1960-2000. This table illustrates that till 1977 couples protected by vasectomy had a rising trend. Moreover, from 1956 to the early eighties, couples effectively and currently protected by male sterilization was higher as compared to female sterilization. The year 1976-77 is marked with the peak in couples protected due to vasectomy, however after that there has been a steady fall in couples protected due to vasectomy. On the other hand, from the year 1980s there has been a consistent rise in the couples protected by tubectomy till date.

Similar to Table 4.3 we see that CPR for vasectomy (Table 4.4) has its crest during the year 1976-77 for India. This coincides with the emergency and compulsory sterilization years. From Table 4.1 we see that the number of acceptors of vasectomy was also higher during this year. However, after that there has been a steady fall from 15.1 to 2.2 during the year 1999-2000. Antithetically, tubectomy has steadily risen even though CPR was lower than vasectomy till the eighties. However, there has been an increasing trend in tubectomy users since then and now i.e. 2000, 94 percent of the couples are effectively and currently protected by Tubectomy among couples protected by sterilization (Table 4.6).The line graph (Fig 4.1) also illustrates the statement. The line graph shows that till 1967 there has been a low level of tubectomy users with some crests and troughs but after emergency, that is after 1976, there has been a steady increase in the number of tubectomy users till date.

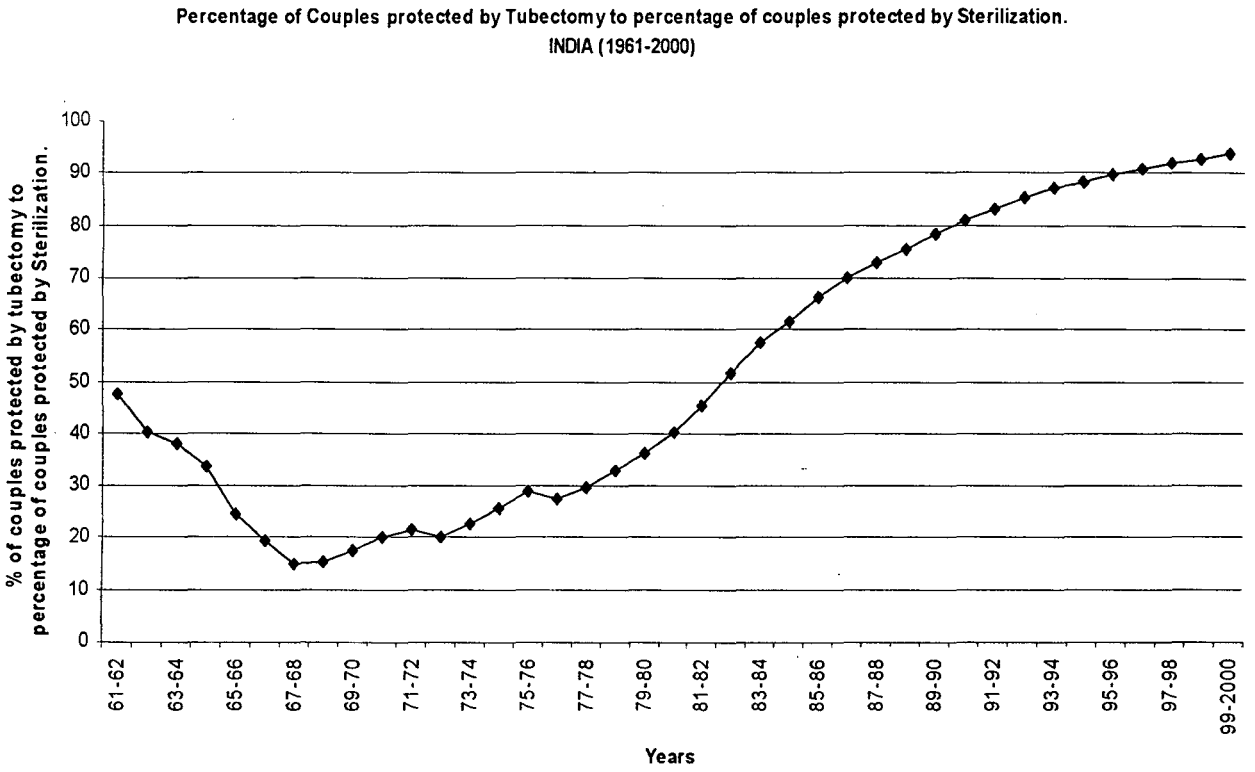


Fig 4.1

This skewness calls for an investigation into factors affecting choice of a contraceptive method and also the temporal change in knowledge/awareness of contraceptive methods.

This chapter throws light on the trend of vasectomies and tubectomies over time. It is interesting to note that prior 1977 vasectomies were higher in India however after it there has been a gradual increase in tubectomies. Thus, we want to investigate into the factors affecting overdependence on sterilization mainly female sterilization in India. First we look into the macro level interstate factors followed by the individual level factors.

Table 4.1
Number of Acceptors of Contraception in India, 1956-2001, (in thousands)

Year	Sterilisation			IUD	CC	OP	Total
	V	T	Total				
1956 to 1961	135	122	257				257
1962	112	46	158				158
1963	115	56	170		298		468
1964	201	68	270		439		709
1965-66	577	94	671	813	582		2066
1966-67	785	102	887	910	465		2262
1967-68	1648	192	1840	669	475		2984
1968-69	1383	282	1665	479	961		3105
1969-70	1056	366	1422	459	1509		3390
1970-71	879	451	1330	476	1963		3769
1971-72	1620	567	2187	488	2354		5029
1972-73	2613	509	3122	355	2398		5875
1973-74	403	539	942	372	3010		4324
1974-75	612	742	1354	433	2521		4308
1975-76	1438	1230	2669	607	3495	32	6804
1976-77	6199	2062	8261	581	3634	58	12534
1977-78	188	761	949	326	3175	78	4528
1978-79	391	1093	1484	552	3387	82	5505
1979-80	473	1305	1778	635	2987	82	5482
1980-81	439	1614	2053	628	3718	91	6490
1981-82	573	2219	2792	751	4439	120	8102
1982-83	585	3398	3983	1097	5765	183	11028
1983-84	661	3871	4532	2134	7661	720	15056
1984-85	550	3535	4085	2562	8505	1290	16442
1985-86	639	4262	4902	3274	9387	1358	18920
1986-87	810	4233	5043	3935	9825	1829	20632
1987-88	754	4186	4940	4356	11342	2064	22702
1988-89	617	4061	4678	4851	12422	2416	24368
1989-90	341	3840	4181	4937	14186	2740	26044
1990-91	255	3871	4126	5370	14735	3125	27356
1991-92	174	3916	4090	4386	13875	3366	25717
1992-93	151	4136	4286	4740	15004	3001	27031
1993-94	150	4347	4497	6017	17283	4302	32099
1994-95	144	4436	4580	6702	17707	4873	33862
1995-96	124	4299	4422	6858	17297	5091	33668
1996-97	72	3798	3870	5681	17214	5250	32015
1997-98	71	4167	4239	6173	16795	6395	33602
1998-99	103	4104	4207	6083	17448	6944	34682
1999-00	87	4509	4595	6200	18135	7747	36678
2000-01	110	4625	4735	6046	18202	7640	36623

Note: V: Vasectomy, T: Tubectomy; IUD: Intra-uterine device;
CC: Equivalent conventional contraceptive users; OP: Equivalent Oral Pill users.
Source: India, Department of Family Welfare (various years)

Table 4.2

An illustration of Computation of Couples Protected for Tubectomy Acceptors 1973-74

			Five-year Survival Ratio			
Age groups		73-74	Female	Male*	Joint	78-79
(Wife)	%Acc	No. of acc	e_o° = 50.55	e_o° =51.46	survival	No. of Users
15-19	0.15	676	0.98465	0.987276	0.972121	
20-24	6.96	31409	0.982605	0.984368	0.967245	658
25-29	30.45	137417	0.98036	0.97976	0.960518	30380
30-34	36.33	163953	0.976815	0.971598	0.949072	131992
35-39	20.68	93326	0.972315	0.9589	0.932353	155603
40-44	5.11	23060	0.96487	0.938766	0.905787	87013
45-49	0.32	1444	0.94999	0.910096	0.864582	20888
total		451290				426536

Total number of Tubectomy = 451290

*Male older than female by 5 years

% Acc = Percentage acceptors

No. of Acc = Number of acceptors.

Interpolation for Intermediate Years

YEAR OF ACCEPTANCE	YEAR OF USE				
73-74	73-74	74-75	75-76	76-77	77-78
Age groups	No. of acc	No. of users	No. of users	No. of users	No. of users
15-19	676	541	406	270	135
20-24	31409	25259	19109	12958	6808
25-29	137417	116010	94603	73195	51788
30-34	163953	157561	151169	144776	138384
35-39	93326	105782	118237	130692	143148
40-44	23060	35851	48641	61432	74222
Total	449845	441006	432166	423327	414487

Table 4.3

Couples effectively and currently protected by Sterilization

(INDIA – 1960-2000)

Year	Tubectomy	Vasectomy	Sterilization
61-62*	122000	135000	257000
62-63	163642	242177	405819
63-64	213837	348833	562670
64-65	274293	537918	812211
65-66	358666	1096842	1455508
66-67	448191	1846293	2294484
67-68	623596	3571702	4195298
68-69	882657	4830679	5713336
69-70	1216710	5719113	6935823
70-71	1624636	6395731	8020367
71-72	2135116	7774510	9909626
72-73	2569318	10077183	12646501
73-74	2927562	10039346	12966908
74-75	3537325	10195953	13733278
75-76	4374198	10818711	15192909
76-77	6178345	16230989	22409334
77-78	6585088	15645805	22230893
78-79	7468348	15266056	22734404
79-80	8524060	14926937	23450997
80-81	9855014	14516864	24371879
81-82	11732976	14192797	25925773
82-83	14695620	13714325	28409945
83-84	18068314	13257547	31325861
84-85	20292410	12675767	32968178
85-86	23886780	12162580	36049360
86-87	27344839	11790442	39135281
87-88	30616784	11355850	41972633
88-89	33621619	10883462	44505080
89-90	36264248	10068720	46332968
90-91	38802183	9236409	48038592
91-92	41240587	8376507	49617094
92-93	43754431	7599709	51354140
93-94	46294605	6846043	53140648
94-95	48281590	6304987	54586577
95-96	50431308	5744245	56175552
96-97	51899256	5142979	57042235
97-98	53603767	4683602	58287369
98-99	55084649	4257512	59342161
99-2000	56783930	3818245	60602175

**Note: Includes all sterilization from 1956-1961.*

Source: Computed from various year books of India, Depatment of Family Welfare

Table 4.4

Contraceptive Prevalence Rate (INDIA – 1966-2000)

Year	Tubectomy	Vasectomy	Sterilization
66-67	0.5	2.1	2.7
67-68	0.7	4.1	4.8
68-69	1.0	5.4	6.4
69-70	1.3	6.2	7.5
70-71	1.7	6.8	8.5
71-72	2.2	8.0	10.3
72-73	2.6	10.2	12.8
73-74	2.9	9.9	12.8
74-75	3.4	9.9	13.3
75-76	4.2	10.3	14.4
76-77	5.8	15.1	20.9
77-78	6.0	14.3	20.3
78-79	6.7	13.7	20.4
79-80	7.5	13.1	20.6
80-81	8.5	12.5	21.0
81-82	9.9	12.0	21.8
82-83	12.1	11.3	23.4
83-84	14.6	10.7	25.3
84-85	16.0	10.0	26.0
85-86	18.5	9.4	27.9
86-87	20.6	8.9	29.5
87-88	22.6	8.4	30.9
88-89	24.2	7.8	32.1
89-90	25.5	7.1	32.6
90-91	26.7	6.4	33.1
91-92	27.8	5.6	33.4
92-93	28.8	5.0	33.8
93-94	29.9	4.4	34.3
94-95	30.5	4.0	34.5
95-96	31.2	3.6	34.8
96-97	31.5	3.1	34.6
97-98	32.3	2.8	35.1
98-99	32.7	2.5	35.2
99-2000	33.2	2.2	35.4

Source: Computed from various year books of India, Depatment of Family Welfare

Table 4.5

A Comparative view of CPR calculated from Service Statistics and Survey data 1998-99

Sources	Tubectomy	Vasectomy	Sterilization
NFHS-II 1998-99	34.0	2.0	36.0
RCH-RHS 1998-99	33.5	1.5	35.0
Table-4.3 (Computed)	33.0	2.5	35.5
Ministry of Health and family Welfare	-	-	29.1

Table 4.6
Percentage of couples Protected by Tubectomy to percentage of couples protected by Sterilizations (INDIA 1961-2000)

Years	Percentage
61-62	47.5
62-63	40.3
63-64	38.0
64-65	33.8
65-66	24.6
66-67	19.5
67-68	14.9
68-69	15.4
69-70	17.5
70-71	20.3
71-72	21.5
72-73	20.3
73-74	22.6
74-75	25.8
75-76	28.8
76-77	27.6
77-78	29.6
78-79	32.9
79-80	36.3
80-81	40.4
81-82	45.3
82-83	51.7
83-84	57.7
84-85	61.6
85-86	66.3
86-87	69.9
87-88	72.9
88-89	75.5
89-90	78.3
90-91	80.8
91-92	83.1
92-93	85.2
93-94	87.1
94-95	88.4
95-96	89.8
96-97	91.0
97-98	92.0
98-99	92.8
99-2000	93.7

CHAPTER- 5

INTERSTATE ANALYSIS ON CHOOSING A FEMALE METHOD OF CONTRACEPTIVE

CHAPTER 5

INTERSTATE ANALYSIS ON CHOOSING A FEMALE METHOD OF CONTRACEPTIVE

5.1 KNOWLEDGE ABOUT CONTRACEPTIVES

For a couple to make a contraceptive method choice they should have knowledge about the method. Knowledge means awareness about the method and also enough information to use it. "If a person does not know of a method, or has heard of it but does not have enough information to use it, that method is not an option" (Ringheim, 1993, p. 91). During the early 1970s about 80 percent of all sterilizations were vasectomies, while in a matter of 30years i.e. during the year 2000 more than 90 percent of sterilizations are tubectomies. To see the temporal change in the sterilization scenario we have probed into awareness level changes from 1970 to 1998.

The all India surveys by the Operation Research Group (ORG) on family planning practices in India gives the awareness level statistics for 1970 (First All India survey), 1980 (Second All India survey), 1988 Third all India survey). Regional variation through time can also be captured through these surveys. NFHS-I gives estimates for 1992-93 and NFHS-II as well as RCH-RHS 1998 as well as NFHS - II report for 1998 statistics. The graph (Fig. 5.1) portrays the awareness level changes of each of the modern contraceptive methods. Table 5.1 shows that awareness about vasectomy was higher than tubectomy in 1970. However, after ten years, knowledge level of tubectomy rose and also vasectomy and both were almost the same. In 1980, awareness about tubectomy was slightly higher than vasectomy and this trend continued to 1998. For other modern methods like Intra Uterine Device (IUD), Condom, and Oral Contraceptive Pills (OCPs), knowledge level shows an increasing trend but these are lower than sterilization. Awareness about female spacing methods like IUD and OCPs is more than the male method, condom, even today.

Coming to the regional variations in knowledge of contraception, we see very interesting statistics. In 1970 the survey done by ORG on Family Planning practices in India brings out that knowledge about terminal methods was higher than spacing methods. Kerala ranked first, being the most developed state with higher literacy rates, in knowledge of all modern contraceptive methods whereas Madhya Pradesh

ranked the last in it (Table 5.2A and B). After about 28-29 years the regional knowledge level changes are noteworthy.

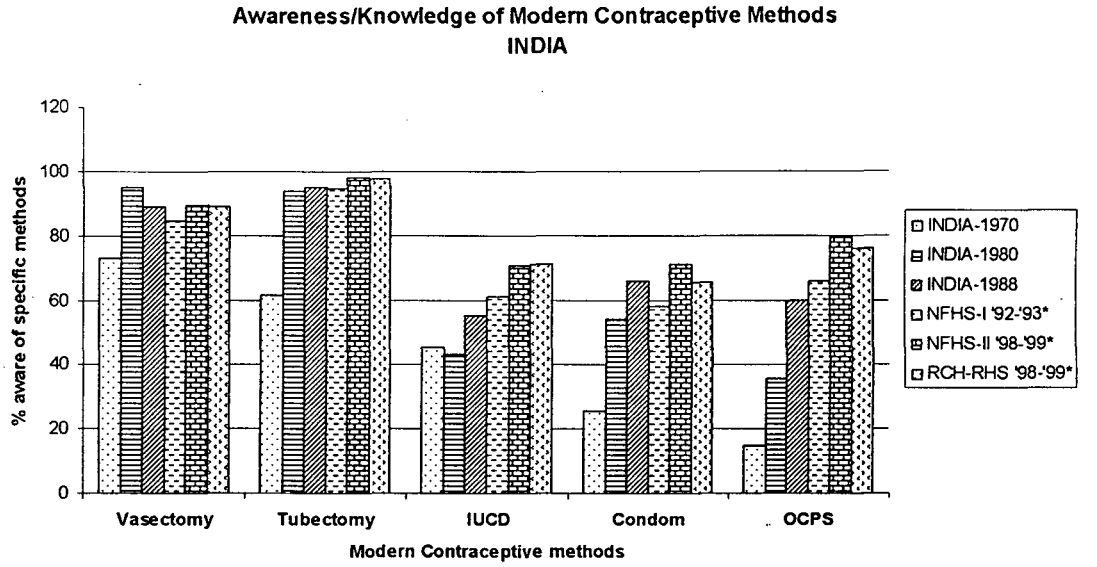


Fig 5.1

The RCH-RHS survey conducted among currently married women of age 15-44 years in 1998-99 still reveals the dominance of terminal methods. However, we do not see a fixed pattern. Knowledge of male sterilization is the highest in Himachal Pradesh (Table 5.3) and the lowest in Meghalaya and of female sterilization is the highest in Tamil Nadu and the lowest in Meghalaya. The highest percentages of currently married women of age 15-44 years knowing about IUD and pills are seen in Punjab and West Bengal respectively. On the other hand, the lowest is seen in Andhra Pradesh. Knowledge of Condom is also the lowest in Andhra Pradesh but it is the highest in Punjab. Table 5.4 on knowledge of all modern method by selected background characteristics shows variation in knowledge by residence, caste, education and standard of living (housing conditions). As expected the variation in knowledge level changes by education.

5.2 INFORMATION ABOUT SIDE-EFFECTS

Information about side-effects is important in contraceptive choice behaviour. "Informed choice" was an important facet of International Conference on Population and Development (ICPD), Cairo conference. National population policy 2000 also "affirms the commitment of government towards voluntary and informed choice". "Family Planning Programs have long endorsed the principle of informed choice however little is known if clients take informed decisions" (Kim *et.al.*, 1998). The RCH-RHS (Phase I and II), 1998-99 survey shows (Table 5.5) that the southern states of Andhra Pradesh (69.3 percent) and Tamil Nadu (50.6 percent) as well as the north–eastern states of Manipur (52.6 percent), Meghalaya (52.0 percent) and Nagaland (51.9 percent) have high percentages of women who were informed about side-effects. Quite interestingly in Kerala only 13.1 percent of women are informed about side-effects. This needs to be probed into further. Goa (18.4 percent), Madhya Pradesh (19.3 percent), Tripura 19.5 and Uttar Pradesh (22.2 percent) also have a lower 'informed choice' of contraception.

5.3 MALE CHOICE OF CONTRACEPTIVE METHOD FOR LIMITING

In RCH-RHS all male respondents were asked "Which family planning method do you think that couples who want no more children should adopt?" The respondents who stated female methods were asked the reasons for not preferring male methods. Table 5.6 gives the reasons for not preferring male methods. Among all the respondents, 71 percent reported fear of weakness as the reason for not preferring a male method. This is quite high and this actually shows the myths related to a male method and the consensus among people all over about using female sterilization. Filtering the statistics through the filter of gender we can say that they are gendered. The proportion reporting fear of weakness is low in Meghalaya (26 percent), Mizoram (22 percent). Fear of method failure and fear of operation was reported by 6 percent and 13 percent respectively at the all India level. Preference for female method is lowest in Meghalaya (38.8 percent). Whereas on the other side more than 80 percent of males reportedly preferred a female method in Andhra Pradesh (88 percent), Bihar (80 percent), Karnataka (86 percent), Mizoram (84 percent) and Tamil Nadu (83 percent).

5.4 INTER-STATE VARIATION IN CONTRACEPTIVE CHOICE- A STUDY WITH RCH DATA

The available data review that though overall the use is dominated by female methods especially tubectomy there are notable interstate variations. Table 5.7 shows that certain states Punjab, Jammu and Kashmir, Haryana, Himachal have relatively high prevalence of condom though even in these states female method dominate. Further there is clear evidence of variation in pattern by socio-economic background factors as can be seen from Table 5.8. It is possible that the interstate variations may, inpart, be attributable to socio-economic factors.

The data base is the RCH-RHS (Phase I and II) for twenty-five states. To capture the gender differential in contraceptive choice behaviour we have computed *two dependent variables*.

1. Percentage of modern female method users/Percentage of modern contraceptive method users. Table 5.7 and Fig 5.2 show that the southern states like Karnataka, Tamil Nadu, Andhra Pradesh, and eastern states like Orissa and Bihar has higher proportion of female method users as compared to Jammu and Kashmir, Punjab, Haryana and Uttar Pradesh. Fig 5.3 shows the distribution of different modern contraceptive method over the state in India.
2. Percentage of female sterilization users/Percentage of terminal method users (Table 5.7)

The *independent variables* identified on the basis of the conceptual framework described earlier, used in the regression are given below: Here information about side-effect, knowledge about condom, pill and IUD as well as literacy are awareness variables. Whereas Pucca house is taken as a proxy for standard of living.

Codes of variables	Variables
INF_SE	Percentage of women who were informed about side-effects.
LIT_WE	Percentage of women who are literate.
URB	Percentage of Urban population.
MUSL	Percentage of Muslim population.
S.C	Percentage of scheduled caste population.
S.T	Percentage of scheduled tribe population.
PUCCA	Percentage of people residing in pucca houses.

KNWIUD	Percentage of women knowing about Intra Uterine Devices.
KNWPill	Percentage of women knowing about pills.
KNCOND	Percentage of women knowing about condoms.
FM_U*	Percentage of modern female method users/Percentage of modern contraceptive method users.
FS_S*	Percentage of Female sterilization users/Percentage of terminal method users

* *Dependent Variable*

Interpretation

Before going to our regression results, a picture of contraceptive method use by selected background characteristics of India can give us a broad overview. Table 5.8 shows that the level of female sterilization is generally high at all background characteristics. Here we see that in India couples in urban areas, others, higher educated and higher standard of living (housing conditions) use more of non-terminal methods. But among non-terminal method, male method like condom use is generally higher in urban areas, among non- SC/STs, among higher standard of living people and higher educated currently married women. One noteworthy result is that among higher educated couples condom use is higher but sterilization use is lower as compared to illiterate couples.

The correlation matrix of the variables used in the analysis is given in Table 5.9 and the regression results in Table 5.10. We see that the effects of macro level factors are not clear and largely insignificant. Only knowledge about condom is significantly (at 2 percent level of significance) related to choosing a female method among total users. However, the relationship is negative, i.e., as knowledge of condom rises couples are less likely to go for female methods. This is quite true as knowledge about a method gives competence to use a method properly which is needed in case of a non-terminal male method like condom. Religion, ethnicity, income and even female literacy show no significant effect on choice of female contraceptive method among total users of contraceptive in the interstate analysis with multiple regressions. Coming to the next analysis to assess the effect of independent variables on choice of female method (tubectomy) for sterilization, we see a very peculiar relationship. Our analysis reveals that urbanization has a significant positive effect on choice of female

INTERSTATE VARIATION IN CHOICE OF FEMALE CONTRACEPTIVE METHODS INDIA RCH-RHS 1998-99

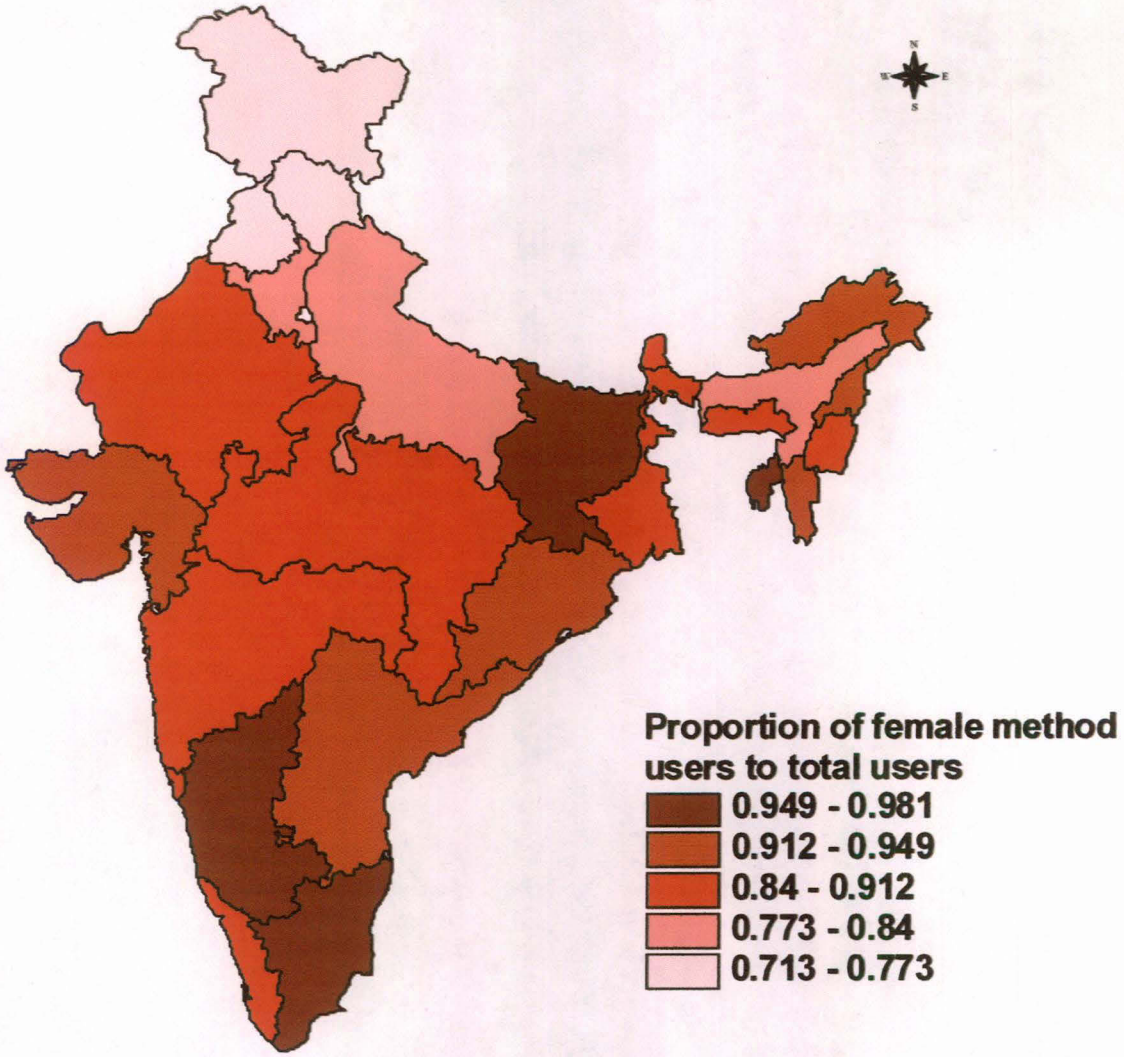


Fig 5.2

Map not to scale

DISTRIBUTION OF CONTRACEPTIVE USE
RCH-RHS 1998-99

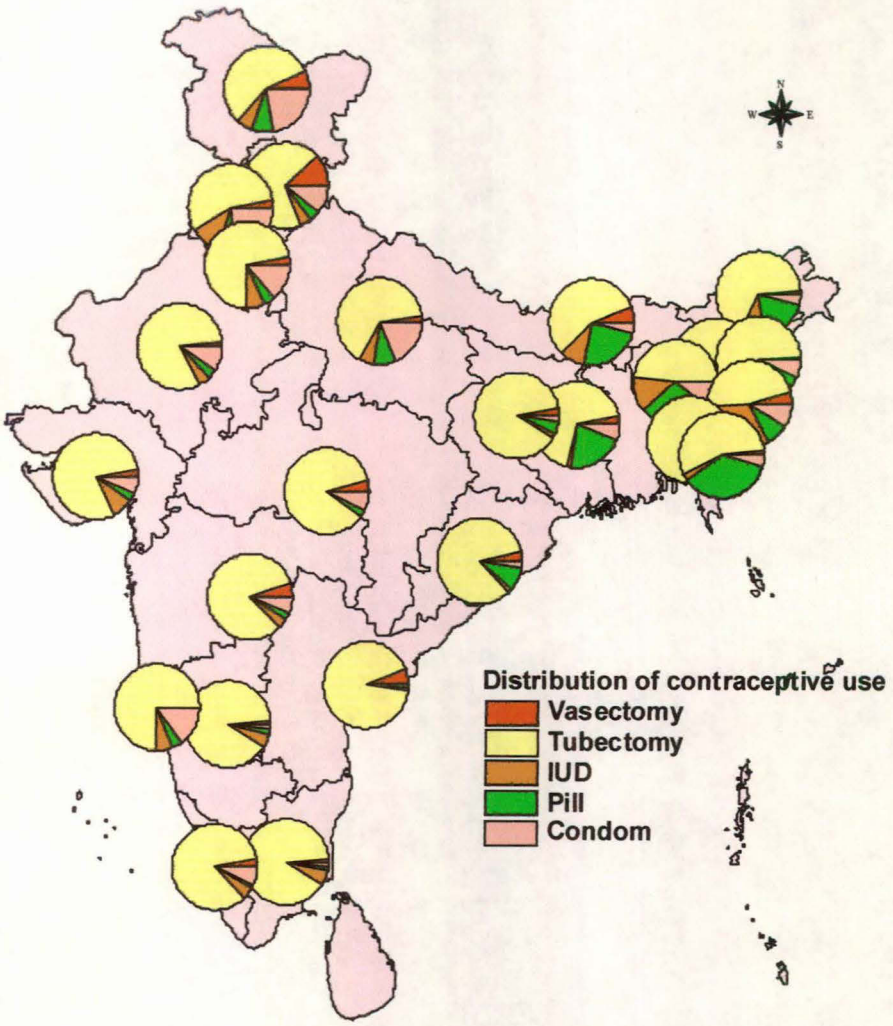


Fig 5.3

Map not to scale

sterilization over male. Thus with increase in urbanization there is higher female sterilization. This can be explained by the fact that overall the effect of higher CPR in urban areas may be the cause; this nullifies the urbanization effect on choice at an interstate level. In this regression analysis also none of the other variables come out to be significant.

One drawback of this analysis is that the number of observations (states) is too small to examine the influences of a large number of variables. Besides, the variables are aggregated at the state level. These areas need to be probed into more deeply. According to Bulatao and Palmore (1989) choosing a contraceptive method is like a funnel and at its end after socio-cultural macro level filter is the individual preference. This calls for an analysis of choice at the individual level, carried out in the next chapter.

Table 5.1

Percentage of couples aware of modern contraceptive method

Years	Vasectomy	Tubectomy	IUCD	Condom	OCPS
INDIA-1970 (ORG)	73	62	46	26	15
INDIA-1980 (ORG)	95	94	43	54	36
INDIA-1988 (ORG)	89	95	55	66	60
NFHS-I '92-93	85	95	61	58	66
NFHS-II '98-'99*	89	98	71	71	80
RCH-RHS '98-'99*	89	98	71	66	76

Table 5.2A
Percentage of Couples aware of Modern Contraceptive methods, ORG Survey, 1970

Name of the States	Vasectomy	Tubectomy	IUCD	Condom	OCPS
Delhi/Punjab/Haryana	81.0	73.5	64.9	45.4	11.9
Rajasthan	81.3	72.4	49.7	21.3	6.9
Uttar Pradesh	79.7	48.1	48.4	20.1	10.1
Assam	52.9	53.3	43.3	13.8	27.7
Bihar	67.1	58.2	42.5	15.7	9.4
Orissa	65.7	36.7	29.5	19.9	11.6
West Bengal	77.4	71.5	66.3	42.5	28.0
Gujarat	75.7	77.0	53.7	31.9	14.0
Madhya Pradesh	53.9	44.3	31.0	11.0	6.3
Maharashtra	79.6	80.0	58.5	36.9	19.1
Andhra Pradesh	81.8	83.4	28.7	15.0	10.6
Kerala	86.9	81.7	84.4	56.6	42.4
Mysore	60.1	57.4	27.7	23.5	13.2
Tamil Nadu	68.7	48.4	26.3	25.4	19.8
India	73.0	61.6	45.6	25.7	15.0

Source: *Family Planning Practices in India, The first All- India Survey Report.ORG, Baroda.*

Table 5.2B
Percentage of Wives aware of modern contraceptive methods, ORG Survey, 1970.

Name of the States	Vasectomy	Tubectomy	IUCD	Condom	OCPS
Delhi/Punjab/Haryana	67.3	59.7	61.7	37.6	9.9
Rajasthan	76.0	76.1	40.4	15.5	5.6
Uttar Pradesh	71.3	48.9	43.6	13.4	8.8
Assam	51.5	55.0	44.3	13.0	37.0
Bihar	60.4	61.8	43.6	10.5	10.9
Orissa	50.8	30.1	28.1	8.3	5.1
West Bengal	75.2	71.3	65.3	35.5	26.1
Gujarat	70.6	77.5	49.6	22.7	11.1
Madhya Pradesh	44.8	38.7	25.3	4.7	4.4
Maharashtra	71.5	78.1	53.7	25.3	19.3
Andhra Pradesh	76.7	81.1	32.8	8.3	8.4
Kerala	85.5	87.1	78.0	39.2	42.6
Mysore	53.1	53.9	26.5	12.1	13.9
Tamil Nadu	59.5	51.3	27.2	9.8	18.3
India	66.0	60.9	43.6	17.2	14.0

Source: *Family Planning Practices in India, The first All- India Survey Report.ORG, Baroda.*

Table 5.3
Percentage of currently married women of age 15-44 knowing of contraceptive methods RCH-RHS 1998-99

States	Vasectomy	Tubectomy	IUCD	OCPs	Condom
Andhra Pradesh	97.0	98.6	30.6	31.4	24.4
Arunachal Pradesh	49.8	85.9	61.1	70.5	47.5
Assam	66.3	88.3	60.8	75.2	54.0
Bihar	93.3	98.8	52.6	69.6	49.1
Goa	75.8	98.8	83.6	86.1	78.0
Gujarat	85.4	98.9	81.7	79.9	69.6
Haryana	92.7	98.1	80.5	80.7	75.7
Himachal Pradesh	98.3	99.0	80.9	83.1	82.1
Jammu&Kashmir	84.2	96.9	46.5	64.0	67.0
Karnataka	69.5	99.2	74.6	69.1	49.7
Kerela	90.5	99.1	91.8	89.1	90.5
Madhya Pradesh	78.2	96.0	46.7	54.7	40.3
Maharashtra	88.0	98.0	76.9	77.8	68.2
Manipur	77.8	82.4	80.9	74.7	66.6
Meghalaya	35.5	56.0	36.2	52.8	37.4
Mizoram	63.7	93.6	76.3	79.6	77.7
Nagaland	35.9	76.9	53.8	44.6	41.7
Orissa	91.5	99.6	65	78.4	54.7
Punjab	96.4	99.4	93.3	92.6	91.6
Rajasthan	88.0	96.5	73	77.3	68.5
Sikkim	72.8	91.9	73.0	79.9	46.9
Tamil Nadu	88.6	99.9	87.4	84.2	73.6
Tripura	87.2	98.1	65.8	93.9	70.1
Uttar Pradesh	96.1	98.3	84.9	91.0	86.6
West Bengal	92.2	98.7	84.2	95.0	85.1
A &N Islands	71.2	88.8	66.4	62.9	54.9
Chandigarh	77.4	84.1	74.5	77.4	79.3
Dadra &Nagar Haveli	95.2	99.3	79.3	77.8	57
Daman & Diu	82.0	99.8	78.8	77.9	70.1
Delhi	82.2	94.0	91.8	84.7	88.1
Lakshdeep	91.4	95.0	86.6	83.6	87.8
Pondicherry	98.0	100.0	96.5	92.5	94.3
India	88.9	97.9	71.1	76.1	65.6

Source: ***RCH-RHH (Phase I & II) 1998-99, IIPS, Mumbai.***

Table- 5.4

Percentage of currently married women age 15-44 years knowing all *modern methods by selected background characteristics and by State, India, RCH Phase I and II

States	Residence			Caste		Education			Type of House		
	Total	**Rural**	**Urban**	**SC/ST**	**Others**	**Illiterates**	**0-9@ Years**	**10 years and above**	**Kachcha**	**Semi Pucca**	**Pucca**
Andhra Pradesh	20.1	14.1	36.3	14.2	22.1	7.0	28.8	64.2	8.8	16.1	32.8
Arunachal Pradesh	31.0	25.7	45.8	26.6	52.2	19.3	46.0	70.3	23.2	51.8	50.2
Assam	42.6	39.9	63.2	38.2	44.4	27.3	48.5	64.4	37.7	51.6	60.0
Bihar	38.7	35.3	64.7	23.4	43.7	27.6	60.5	85.6	26.1	51.1	66.9
Goa	61.4	56.7	68.1	52.9	62.0	32.0	57.0	84.8	49.9	57.3	74.7
Gujarat	64.4	54.8	83.8	48.4	72.3	45.8	75.5	90.8	40.0	57.0	78.8
Haryana	69.0	63.8	86.3	59.1	71.7	57.6	77.9	90.2	46.3	62.4	80.5
Himachal Pradesh	76.6	75.5	88.0	71.4	78.1	59.3	79.6	91.9	67.8	75.8	83.6
Jammu and Kashmir	31.2	31.3	0.0	15.2	35.7	26.1	28.3	67.9	18.4	35.1	43.6
Karnataka	42.0	35.0	58.0	27.2	46.7	23.1	53.1	79.1	27.0	38.5	64.2
Kerela	79.9	80.4	78.0	66.4	83.3	50.1	75.9	87.9	67.5	77.5	83.3
Madhya Pradesh	33.6	26.0	59.3	21.2	41.5	22.9	46.6	74.1	23.4	44.2	58.7
Maharashtra	62.6	52.1	79.5	51.7	66.9	41.0	72.0	87.0	42.7	65.0	77.6
Manipur	58.4	53.6	73.4	34.1	72.7	40.7	59.2	84.1	56.7	58.4	77.6
Meghalaya	20.7	18.2	32.8	19.2	40.3	13.2	20.5	43.7	22.5	12.8	36.0
Mizoram	54.1	44.0	66.0	54.5	28.0	2.1	56.5	75.7	47.2'	62.2	54.6
Nagaland	24.6	21.6	35.2	24.7	19.0	5.4	21.9	48.5	10.3	30.0	40.4
Orissa	48.3	43.8	76.6	32.1	58.9	31.0	69.4	91.2	38.9	60.5	78.6
Punjab	86.0	83.4	93.0	79.0	89.0	74.4	92.2	96.9	64.0	82.4	92.9
Rajasthan	61.3	56.3	78.8	50.4	65.7	53.3	81.3	92.1	52.6	54.7	68.2
Sikkim	40.0	33.3	82.8	40.5	40.2	23.2	49.6	74.6	21.4	42.5	64.2
Tamil Nadu	67.6	60.2	80.9	54.9	71.6	48.7	75.0	92.4	54.1	65.0	80.9
Tripura	55.3	53.2	78.6	49.0	58.1	35.4	60.0	79.1	55.2	61.7	68.2
Uttar Pradesh	77.8	75.5	88.1	71.4	79.8	72.8	86.7	93.9	69.6	79.2	85.8
West Bengal	76.0	71.7	88.5	68.1	80.5	65.3	83.3	94.8	71.2	83.1	87.6
India	57.8	52.3	74.8	45.5	62.5	44.0	69.3	86.0	43.2	59.9	73.3

@ Literate women with no schooling are included here * female sterilization, male sterilization, IUD/loop, pills, condom

Source: ***RCH-RHH (Phase I & II) 1998-99, IIPS, Mumbai.***

Table 5.5
Percentage of women who were informed about side-effects. India, RCH, 1998-99

States	Informed about side-effects
Andhra Pradesh	69.3
Arunachal Pradesh	30.6
Assam	33.9
Bihar	25.9
Goa	18.4
Gujarat	42.3
Haryana	28.3
Himachal Pradesh	35.1
Jammu&Kashmir	29.1
Karnataka	30.0
Kerela	13.1
Madhya Pradesh	19.3
Maharashtra	24.5
Manipur	52.6
Meghalaya	52.0
Mizoram	17.4
Nagaland	51.9
Orissa	35.6
Punjab	24.7
Rajasthan	27.4
Sikkim	51.1
Tamil Nadu	50.6
Tripura	19.5
Uttar Pradesh	22.2
West Bengal	24.8
A &N Islands	34.7
Chandigarh	12.8
Dadra &Nagar Haveli	44.0
Daman & Diu	44.9
Delhi	28.4
Lakshdeep	13.2
Pondicherry	53.4
INDIA	32.4

Source: ***RCH-RHH (Phase I & II) 1998-99, IIPS, Mumbai.***

Table 5.6
Percentage of men with their choice of family planning method for limiting by State, RCH-RHS 1998-99.

States	Fear of Method Failure	Fear of Operation	Fear of Weakness
Andhra Pradesh	2.6	13.7	85.5
Arunachal Pradesh	7.8	25.7	54.8
Assam	7.7	25.5	59.4
Bihar	4.3	13.6	80
Goa	3.5	11.9	57.3
Gujarat	2.3	3.2	54.6
Haryana	5	4.8	69
Himachal Pradesh	1.3	39.7	87.1
Jammu Kashmir	15.3	35.7	72.3
Karnataka	9	14.2	75.1
Kerela	5.7	3.8	56
Madhya Pradesh	5.3	9.5	68.7
Maharashtra	6.1	6.2	50.9
Manipur	4.3	19.2	61.2
Meghalaya	17	44.9	25.7
Mizoram	14	13.5	22.4
Nagaland	28.7	32.4	43.3
Orissa	6.8	16	85.5
Punjab	4.2	5.6	78.1
Rajasthan	6	9.6	70.1
Sikkim	4.6	14.2	80.8
Tamil Nadu	7.1	20.6	63.1
Tripura	13.6	22.4	67.1
Uttar Pradesh	11.2	24.3	73.9
West Bengal	8.1	9.3	80.7
India	6.3	12.9	72.0

Source: *RCH-RHH (Phase I & II) 1998-99, IIPS, Mumbai.*

Table 5.7
Percentage of currently married women age 15-44 years using contraceptive methods, India, RCH-RHS 1998-99

States	Vasectomy	Tubectomy	IUD	Pill	Condom	Fm_U	Fs_S
Andhra Pradesh	3.7	54	0.4	0.4	0.2	0.934	0.936
Arunachal Pradesh	0.3	15.8	2.4	4.2	1.1	0.941	0.981
Assam	1	12.4	2.1	8.9	3.9	0.824	0.925
Bihar	0.7	20.5	0.5	1.1	0.6	0.948	0.967
Goa	0.1	28.8	2.2	1.6	6	0.840	0.997
Gujarat	1.7	40.9	4.4	2.1	2.9	0.912	0.960
Haryana	1.6	37.7	3.9	1.9	7.5	0.825	0.959
Himachal Pradesh	7.6	43	2.6	2.3	6.9	0.768	0.850
Jammu and Kashmir	3.3	26.3	2.9	4.3	10.2	0.713	0.889
Karnataka	0.5	52.4	2.8	0.9	1.4	0.969	0.991
Kerela	1.7	48.5	3	0.6	3.8	0.903	0.966
Madhya Pradesh	1.6	36.3	0	1.4	3	0.869	0.958
Maharashtra	3.1	47.5	2.4	1.9	3.3	0.889	0.939
Manipur	0.8	9.3	5.9	1.8	1.5	0.876	0.921
Meghalaya	0	6.2	1.7	3.7	1.2	0.879	1.000
Mizoram	0.2	39.2	2.7	4.7	0.7	0.981	0.995
Nagaland	0.2	12.2	6.3	1.6	1.3	0.931	0.984
Orissa	1.4	32.5	0.7	3.6	1.1	0.932	0.959
Punjab	1.4	29.5	6.4	3.3	12.9	0.731	0.955
Rajasthan	0.9	31.5	1.6	1.5	3.4	0.887	0.972
Sikkim	2.4	20.5	3.5	9	1.1	0.899	0.895
Tamil Nadu	0.4	45	3	0.3	1.2	0.968	0.991
Tripura	0.7	22.1	1.3	14.6	1.6	0.941	0.969
Uttar Pradesh	0.4	13.6	1.3	1.8	4.2	0.773	0.971
West Bengal	1.2	30.7	0.9	9.5	2.8	0.905	0.962
India	1.5	33.5	1.9	2.4	3.1	0.891	0.957

Source: ***RCH-RHH (Phase I & II) 1998-99, IIPS, Mumbai.***

Fu_U = Percentage of modern female method users/Percentage of modern contraceptive method users.

Fs_S = Percentage of Female sterilization users/Percentage of terminal method users

Table 5.8

Percentage of currently married women age 15-44 years using contraceptive methods by background characteristics, India. RCH-RHS 1998-99

Background Characteristics	Male sterilization	Female sterilization	IUD	Pill	Condom
Residence					
Total	1.5	33.5	1.9	2.4	3.1
Rural	1.6	32.8	1.3	2.2	2.6
Urban	1.3	35.6	4.0	3.3	6.9
Caste					
SC/ST	1.9	31.8	0.9	2.0	1.7
Others	1.4	33.8	2.4	2.6	3.8
Education					
Illiterate	1.7	33.6	0.6	1.5	1.2
0-9@years	1.4	37.5	2.2	3.7	3.2
10 and above	1.1	25.9	6.1	3.7	10.3
Type of House					
Kachcha	1.4	28.7	0.6	2.5	1.1
Semi Pucca	1.6	37.3	1.9	2.2	2.6
Pucca	1.6	35.4	3.5	2.0	6.5

@Literate women with no schooling are included

Source: ***RCH-RHH (Phase I & II) 1998-99, IIPS, Mumbai***

Table 5.9

CORRELATION MATRIX

Variables	INF_SE	LIT_WE	URB	MUSL	S.C	S.T	PUCCA	KNWIUD	KNWPILL	KNCOND	FM_U	FS_S
INF_SE	1.000	-0.156	-0.110	-0.206	-0.158	0.228	-0.143	-0.413	-0.600**	-0.593**	0.191	-0.199
LIT_WE	-0.156	1.000	0.367	-0.205	-0.382	0.248	-0.016	0.372	0.284	0.384	0.133	0.125
URB	-0.110	0.367	1.000	-0.422*	-0.110	0.162	0.113	0.404*	0.102	0.203	0.399*	0.551*
MUSL	-0.206	-0.205	-0.422*	1.000	0.021	-0.299	0.156	-0.167	0.007	0.147	-0.435*	-0.319
S.C	-0.158	-0.382	-0.110	0.021	1.000	-0.70**	0.377	0.257	0.323	0.314	-0.193	-0.057
S.T	0.022	0.248	0.162	-0.299	-0.707**	1.000	-0.517*	-0.373	-0.430*	-0.394	0.393	0.325
PUCCA	-0.143	-0.016	0.113	0.156	0.377	-0.51**	1.000	0.379	0.206	0.442*	-0.353	-0.163
KNWIUD	-0.413*	0.372	0.404*	-0.167	0.257	-0.373	0.379	1.000	0.857**	0.858**	-0.128	0.037
KNWPIL	-0.600**	0.284	0.102	0.007	0.323	-0.430*	0.206	0.857**	1.000	0.861**	-0.189	-0.003
KNCOND	-0.593**	0.384	0.203	0.147	0.314	-0.394	0.442*	0.858	0.861**	1.000	-0.395	-0.044
FM_U	0.191	0.133	0.399*	-0.435*	-0.193	0.343	-0.353	-0.128	-0.189	-0.395	1.000	0.535**
FS_S	-0.199	0.125	0.551**	-0.319	-0.057	0.325	-0.163	-0.037	-0.003	-0.044	0.535**	1.000

Table 5.10

Results of multiple regression analysis

Independent variables	Dependent variables	
	FM_U	FS_S
INF_SE	-0.00012	+0.00066
LIT_WE	+0.00131	+0.00007
URB	+0.00309	+0.00218*
MUSL	+0.00098	+0.00023
S.C	+0.00346	+0.00799
S.T	+0.00865	+0.00063
PUCCA	+0.00020	+0.00017
KNWIUD	+0.00109	-0.00056
KNWPill	+0.00382	+0.00130
KNCOND	-0.00634*	-0.00180
Constant	0.699	0.888
Adjusted R^2	0.340	0.217
R^2	0.615	0.54
n	25	25

** Significant at 1% level of significance. * Significant at 5 % level of significance.

CHAPTER- 6

AN ANALYSIS O F CONTRACEPTIVE CHOICE AT AN INDIVIDUAL LEVEL IN ANDHRA PRADESH AND UTTAR PRADESH

CHAPTER 6

AN ANALYSIS OF CONTRACEPTIVE CHOICE AT AN INDIVIDUAL LEVEL IN ANDHRA PRADESH AND UTTAR PRADESH

6.1 ANDHRA PRADESH AND UTTAR PRADESH

The interstate analysis in the previous chapter examined macro – level regional factor in choosing a contraceptive method: female over male. This chapter proceeds to bring forth the individual factors in choosing a contraceptive method, examining the effect of each of the predictor variables controlling for other variables. The analysis has been done with the individual level RCH-RHS (1998-99) data for the states of Andhra Pradesh and Uttar Pradesh. Andhra Pradesh has the highest contraceptive prevalence rate of any modern method while Uttar Pradesh has the lowest contraceptive prevalence rate (RCH-RHS, 1998-99). To see the contrasting characteristics of contraceptive behaviour at higher and lower level we have chosen these two states. Along with this, the socio-demographic and cultural differences in northern and southern states will also help us identify the factors affecting choice of a female method of contraception and also future intentions to choose a female method over male method, controlling for other variables.

Before we proceed we first present a comparative pattern of contraceptive use in the two states Andhra Pradesh and Uttar Pradesh. As noted earlier, the contraceptive prevalence rate is high in Andhra Pradesh, 58.7 percent according to RCH-RHS 1998-99 and low in Uttar Pradesh, 21.6 percentage (RCH-RHS 1998-99). In Andhra Pradesh knowledge of all non- terminal method is the lowest so is the Contraceptive Prevalence Rate (CPR) of IUD, Pills and condoms. However, though knowledge of male and female sterilization is high, CPR of female sterilization is predominant. Here there is a stark difference in knowledge and actual practice.

Table 5.3 shows that Uttar Pradesh has a generally higher knowledge of both male-female terminal and non-terminal methods. On the other hand, the CPR is the lowest. In Uttar Pradesh, female sterilization percentages are much lower than Andhra Pradesh but the non- terminal methods like IUD, Pills and Condom have higher CPR than in Andhra Pradesh. Condom use is higher than pills and IUD as compared to Andhra Pradesh where condom use is lower than IUD and Pills (Table 5.7). These observations draw a line between Andhra Pradesh and Uttar Pradesh in knowledge and practice.

Looking into the background characteristics we see almost expected results. Knowledge of all modern methods is lower in rural, SC/ST, illiterates and people living in both Kachcha houses (housing condition is used as a proxy for standard of living here since the RCH-RHS did not collect data on income or consumption or assets) as compared to urban, others, higher education and people living in semi pucca and pucca houses of both Andhra Pradesh and Uttar Pradesh (Table 5.4). Similar is the CPR – only Andhra Pradesh is at a higher level and Uttar Pradesh is at a lower level of CPR (Table 5.7). When we look at CPR by selected demographic characteristics (Table 6.1) we see that CPR is higher among age 30 and above, 1+ surviving sons, 1+ surviving daughters and 3+ surviving children in both Andhra Pradesh and Uttar Pradesh. Uttar Pradesh has a higher T.F.R and strong son preference so we see that at 1+ living son CPR is 27.0 percentages as compared to Andhra Pradesh which is 72.6 percentages. Along with this we see that at 3+ surviving children Andhra Pradesh has 83.1 percent CPR where as Uttar Pradesh has only 29.4 percent. This overview further helps in our individual level analysis.

6.2 ANALYTICAL FRAMEWORK

In this study we see choosing a contraceptive method to be a two step process where a woman first decides to use a contraceptive and then chooses among the available methods. The second step can be modeled by binary logit model as the dependent variable is dichotomous that is contraceptive choice between modern female method and modern male method (modern female method includes Intra Uterine Device (IUD), pills and female sterilization and modern male method includes condom and male sterilization.) Besides, since the contraceptive use in India is dominated by terminal methods, choice between female and male sterilization is also examined. Multiple linear regressions cannot be used as it cannot predict the value of a dichotomous dependent variable. The variables used in this study are given in Table 6.2.

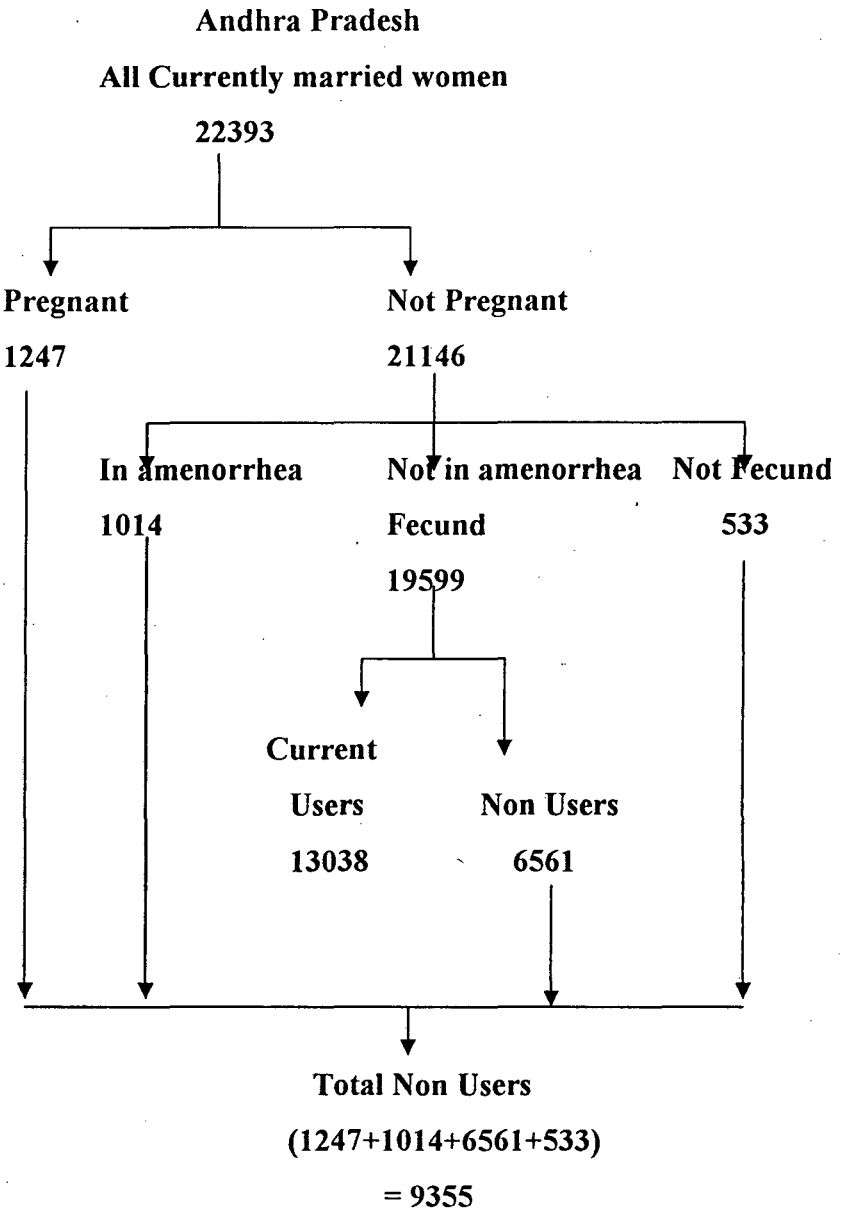
The analysis has been first done with the current users (to assess influence of factors that led to choosing a female method of contraceptive male method and choosing tubectomy over vasectomy) and then the non-users (excluding the pregnant women and non-fecund) for the future intentions to use female method over male method.

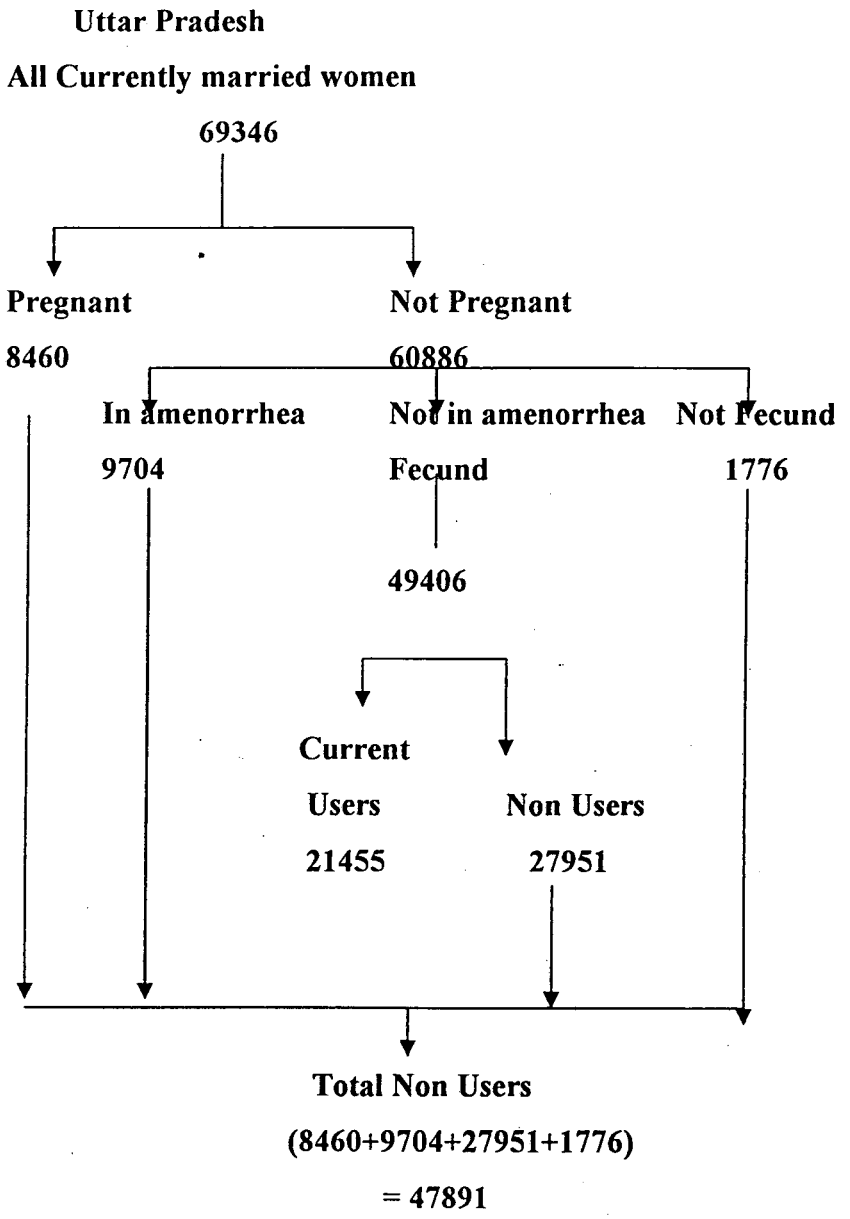
The conceptual frame work brings in the fact that, method choice varies by acceptors number of living children (Rele *et. al.* 1989). Since choices presumably depends on number of living children, logistic regression analysis has been carried separately for

couples with one, two and three or more number of living children. At one living child we have seen choice of female method over male method as women with one child are less likely to go for female sterilization and male sterilization. For others we have looked into both users choosing male method and female method and terminal method acceptors choosing tubectomy over vasectomy.

Data Used

Before going to the analysis of logistic regression we first see the absolute numbers of contraceptive users and non-users in the chart below for Andhra Pradesh and Uttar Pradesh for the individual RCH-RHS data of these two states. The RCH-RHS 1998-99 survey has interviewed 22,393 currently married women of age 15-44 for the state of Andhra Pradesh. Among them 1247 women are pregnant and the rest, not pregnant. The non-pregnant women are further divided into: women in amenorrhea, not in amenorrhea, fecund and not fecund. Amongst the fecund women who are not in amenorrhea some are current users (13038) of contraceptive methods and others are non-uses (6561). For our analysis on investigations into choosing a female method over male we have used these 13038 currently married women (in fact, couples) who are current contraceptive users. For the second analysis on intended choice, of the remaining non-users those who are intending to use any contraceptive method in future have been used. Similarly for the state of Uttar Pradesh 69346 currently married women of age 15-44 have been interviewed of them 21,455 are current users of contraceptives and 18405 are non-users intending to use any contraception.


Andhra Pradesh
All Currently married women
22393
Pregnant
1247
Not Pregnant
21146
In amenorrhea
1014
Not in amenorrhea
Fecund
19599
Not Fecund
533
Current
Users
13038
Non Users
6561
Total Non Users
(1247+1014+6561+533)
= 9355


Uttar Pradesh
All Currently married women
69346
Pregnant
8460
Not Pregnant
60886
In amenorrhea
9704
Not in amenorrhea
Fecund
49406
Not Fecund
1776
Current
Users
21455
Non Users
27951
Total Non Users
(8460+9704+27951+1776)
= 47891

6.3 ANALYSIS OF THE LOGISTIC REGRESSION RESULTS

Andhra Pradesh and Uttar Pradesh

The results of Logistic Regression are given in Table 6.3 and Table 6.4. Table 6.3 presents the regression co-efficient of choosing female method over male method and choosing a female sterilization over vasectomy. Table 6.4, portrays an analysis of intended choice, to use either a female method or a male method for the states of Andhra Pradesh and Uttar Pradesh.

Contraceptive goal and Method Choice (Wife's Age, Number of Boys, Outcome of last pregnancy)

The contraceptive goal is the ultimate fertility desire a couple tries to achieve through contraception. At one living child the couple's fertility desires are not achieved so people are less likely to choose a permanent method so we consider a combination of both (temporary and permanent) methods : female and male (modern female method includes Intra Uterine Device (IUD), Pills and female sterilization and modern male method includes condom and male sterilization.). On the other hand, with number of children equal to two and three or more we consider choice of modern female method and male method as well as vasectomy and tubectomy. Age of the women, when controlled for other variables, affects contraceptive choice as depicted in the conceptual framework through fertility goals. Interestingly, with increase in age (34-44 Years) in Andhra Pradesh women with one child are less likely to choose a female method over male method. Similarly, when number of children increases from one to two the pattern is the same for choosing female method over male method. This can be explained by the fact that in Andhra Pradesh women go for female sterilization at a younger age, shortening the lifespan of child bearing. Over and above this association may not be an age effect as such since couples of age 34-44 years may have chosen the method earlier when male method especially vasectomy was more common than tubectomy. However, overtime, it has become less important as compared to female method of sterilization. On the other hand, when number of living children is three or more, middle aged women very obviously have higher probability of going for female method over male method as well as female sterilization over male sterilization. At three or more children the family size desires are often complete so people are more likely to go for contraceptives and as in Andhra Pradesh female sterilization dominates the contraception scenario so women are more likely to choose a tubectomy over vasectomy which also explains here choosing a female

method over male method. Like Andhra Pradesh, in Uttar Pradesh also age is quite significantly related to method choice. However, quite contrastingly in Uttar Pradesh, the probability of choosing a female method increases with age. At one living child the odds ratio for age 34-44 years is 3.6 which decreases to 2.5 at two living children and further drops to 1.4 at three or more living children. In Uttar Pradesh, the age group 15-24 years is dropped from the analysis of sterilization as number of people going for male sterilization at this age is zero. After excluding the age group we find women with age 34-45 years have a lower tendency to choose female sterilization over male sterilization at two children as well as three as compared to age group 25-34 years. This is quite similar to Andhra Pradesh but here in Uttar Pradesh, which is at a lower level of contraceptive prevalence rate, female sterilization is not very predominant like Andhra Pradesh. Non-terminal female method use like pills and IUD is higher in Uttar Pradesh in comparison to Andhra Pradesh. Though choice of female method is higher over male method of contraception but not female sterilization over male sterilization, as compared to younger age groups. This is quite an interesting finding delineating the higher and lower levels of contraceptive choice behaviour and the effect of age on it.

Number of living sons has also a significant association only with women having three children or more. Quite interestingly in Andhra Pradesh for women with one son the odds ratio for choosing a female method over male method and tubectomy over vasectomy are lower as compared to women with three or more sons. Thus, women with one son are less likely to choose female method or tubectomy over male method and vasectomy as their desire for more son is not complete. This depicts the son preference in Indian society (Sharma and Jain, 1974; Arnold *et. al.*, 1998). In Uttar Pradesh, the number of sons is important in choosing a female method over a male at two living children. This was not so in Andhra Pradesh. However, in Uttar Pradesh the odds for choosing a female method over male as well as choosing tubectomy over vasectomy are lower at zero or one son. This case is also true when the analysis is done for three or more living children. Son preference is very important all over India but in Uttar Pradesh it is much more predominant.

Experience of still birth or abortion has no significant effect on choosing a female method over male method in Andhra Pradesh. Contrastingly, in Uttar Pradesh women who have experienced still birth and abortion have lower probability of choosing a female

method over male at three or more as compared to women who has not experienced abortion or still birth.

Contraceptive competence and method choice (Knowledge of Family Planning Methods, Wife's education)

The ability to use a particular method effectively is associated with education and contraceptive knowledge. Prior studies have shown knowledge as a significant variable in contraceptive choice (Ringhein, 1993; Nustas, 1999; Hussain, 2003). In this area contraceptive knowledge has very mild effect on choice, only when a woman has three or more children. Contrastingly, women with one and two children show an association between contraceptive knowledge and choosing female method. Women who have higher knowledge of condom are less likely to choose a female method over male method or tubectomy over vasectomy, compared to women with no knowledge. However, contraceptive knowledge has come out to be significant in choosing a female method at one living child and also at two and three or more living children, in Uttar Pradesh. This association of knowledge in choosing tubectomy over vasectomy is only seen at three or more living children in Uttar Pradesh. In Uttar Pradesh women with one, two, three or more living children show lower tendency to choose a female method if they have knowledge about condoms as compared to women who have no knowledge of condoms. At three or more children women in Uttar Pradesh have higher odds of choosing female method over male method and female sterilization over male sterilization if they have knowledge of pills.

Wife's education has a consistent effect on choice in Andhra Pradesh as well as in Uttar Pradesh. Women with one child having higher education has lower propensity to choose a female method over male method as compared to illiterate women having one child. In Andhra Pradesh however when number of living children increases to two, primary education and higher education both are significantly associated with contraceptive choice but in a different manner. With primary education, odds ratio to choose a female method over male method as well as tubectomy over vasectomy increases. Quite antithetically women with higher education have lower probability to choose a female method or tubectomy over male method and vasectomy as compared to illiterate women with two children. Wife's education remains important when number of living children is three or more. With middle and higher education probability of choosing

a female method over male method and tubectomy over vasectomy lessens. This behaviour can be explained by the education effect. With middle and higher education there is empowerment, spousal communication, awareness, decision making and negotiation power and along with these competence to use non- terminal male methods like condom. This is because condom is a method which demands spousal co-operation and efficiency on the part of the users (Verma and Baburajan, 1994). In Uttar Pradesh at higher and middle education of women the probability of choosing a female method over male method is lower as compared to the illiterates. This behaviour is quite similar to women with higher education in Andhra Pradesh. One result which needs to be researched further is; at two children, middle education leads to higher odds for choosing tubectomy over vasectomy. Quite expectedly at three or more children choosing female or male sterilization has no significant association with education of women.

Contraceptive Evaluation and method Choice (Ethnicity, Religion, Information about Side-effects)

The conceptual framework shows the pathway of ethnicity and contraceptive choice. Our study reveals that ethnicity does not have a consistent or contrasting effect on choice in our study areas. Only tribes in Andhra Pradesh have a lower probability of choosing a female method as well as choosing female sterilization over male method and male sterilization as compared to other castes. The Scheduled Tribes have their unique religious practices as well as socio-cultural norms. Moreover, the tribes being concentrated mostly in the areas of less accessibility it makes them oblivious of modern contraceptive method availability thus restricting their choice of both male method and female methods of contraception. In Uttar Pradesh, the observations for Scheduled Tribe using modern contraceptive methods is very low so Scheduled Tribe category has been dropped from the analysis at one, two, and three or more living children.

Each religion has its own doctrines and practices which encourages or discourages certain contraceptive use, which is thought to be an artificial way of regulating natural fertility. With women having one child religion variable is dropped as the number of Muslims using any contraceptive method is very low. However, as the number of living children increases from one to two or three or more, the results show a significant association between religion and choosing a female method over male method and tubectomy over vasectomy as well. The results are noteworthy. Muslims show a

significantly higher female method choice as well as tubectomy as compared to the Hindus. This result can be explained by higher Intra Uterine Device (IUD) use among Muslims as compared to the Hindus in Andhra Pradesh. However, very interestingly, in Andhra Pradesh the odds for choosing tubectomy among Muslims is also high compared to Hindus. This contravenes with the belief of less terminal method use among the Muslims (religious doctrine opposes use of terminal methods). Comparatively, In Uttar Pradesh religion has milder affect overall than Andhra Pradesh. At one living child religion does not affect choice of a contraceptive method. On the other hand, at two and three or more living children we see that Muslims have lower tendency to choose a female method over male method. This lower tendency may be actual religion effect as Muslims do not prefer terminal method like female sterilization and thus go for non-terminal male methods like condom. This finding clashes with the contraceptive choice behaviour among Muslim women in Andhra Pradesh. This contrasting behaviour may be an outcome of contraceptive prevalence rate which is the highest in Andhra Pradesh and the lowest in Uttar Pradesh, or bring in the region effect as well.

Information about side-effects by the doctor/ nurse or A.N.M does not have a clear consistent effect in Andhra Pradesh and is seen only among women with two children. Women with information about side-effects are more likely to choose a female method over male method and tubectomy over vasectomy as compared to women with no information about side-effects. On the other hand, our analysis on Uttar Pradesh reveals a consistent effect of this variable. Women who have been informed about side-effects have higher probability of choosing female method over male method as well as tubectomy over vasectomy. Hence information about side-effects is important in choosing a female method of contraception. Our study brings forth that in Uttar Pradesh 'informed choice' is present.

Contraceptive access and Method choice: (Standard of living, Place of Residence, Family Planning Program effort)

Economic as well as physical access of contraceptive is conducive to choosing a contraceptive method. However, in our study the effect of place of residence is not very clear and consistent. In Andhra Pradesh, urban people with two living children show relatively higher preference for male method and male sterilization. Similarly, in Uttar Pradesh urbanization is a criterion for using male method; condom, only at two and three

or more living children. Standard of Living (housing conditions) shows no clear effect on contraceptive choice in either Andhra Pradesh or Uttar Pradesh.

Motivation by the husband shows overall significant effect on choice of contraception in our study area. However, motivation by A.N.M (seen as program effort in choosing a contraceptive method) shows no consistent effect on contraceptive choice behaviour in this study. In Uttar Pradesh motivation by husband shows importance in choosing a female method over male method as well as female sterilization over male sterilization as compared to motivation by self. The results are quite interesting; we see that motivation by husband lowers the odds for choosing either female method over male method or female sterilization over male sterilization. ANM's motivation is important only at three or more children in choosing female method over male method. On the other hand, motivation is not that important a factor in choosing a female method or female sterilization over male method or male sterilization in Andhra Pradesh which has higher contraceptive prevalence rate as compared to Uttar Pradesh. Only at three or more children in Andhra Pradesh we see that motivation by ANM lowers the probability of choosing a female method over male method as compared to self. In quite contrast to our normal ideas that A.N.M promotes female method, in Andhra Pradesh and Uttar Pradesh motivation by A.N.M decreases probability of choosing female method and tubectomy over male method and vasectomy as compared to motivation by self. This brings to light the fact that though motivation by A.N.M is significant in method choice, this program factor in these two states does not promote only female method of contraception.

Future Intention to choose Female Methods of Contraception

An analysis on intended choice of contraception can give a better understanding in our investigations into choosing a female method of contraception. Thus, after looking at the individual level contraceptive choice behaviour we look at the future intentions of the non-users who intend to use contraception in future to choose a specific contraceptive method. In Andhra Pradesh future intentions to use a female method is significantly higher in urban areas as compared to rural areas when controlled for other socio-economic variables. Contrastingly in Uttar Pradesh urban areas have significantly lower odds for future intention to use a female method as compared to rural areas. The difference can be explained as in Andhra Pradesh since there is a predominance of female sterilization the future intention to use can be affected by this typical characteristic of the state.

Whatsoever it is, type of residence (i.e. Rural or Urban) is important in future intentions to use a female method when controlled for other variables. The religion factor is not significantly related to preference for a female method in future in Andhra Pradesh. On the other hand in Uttar Pradesh religion is an important variable shaping future intentions to use a female method of contraception. Interestingly, in Uttar Pradesh Muslims have a very low future intention to use a female method compared to the Hindus. Ethnicity plays a differential role at two levels that is- higher levels of contraceptive prevalence (Andhra Pradesh) and lower level of contraceptive prevalence. In Uttar Pradesh the influence of caste is totally insignificant but the caste factor has significant relationship with future preference to use female methods of contraception in Andhra Pradesh. Other backward classes have lower probability of using a female method in future compared to the others. Economic variable, i.e., type of house (proxy for standard of living) as well as knowledge about a particular contraceptive method do not significantly effect the future intention to use a female method in Andhra Pradesh on the other side knowledge plays an active role in future intentions to use a female method of contraception in Uttar Pradesh. The results show that those who are not aware of female methods like pills and IUDs generally have less probability of going for a female method in future. Likewise, those who are unaware of male methods like condoms have significantly higher odds of preferring a female method in future in Uttar Pradesh. Interestingly, age also plays a passive role in future intention to use contraceptives in both Andhra Pradesh and Uttar Pradesh. Woman's education as seen in the prior analysis is a very important variable. In Andhra Pradesh as in Uttar Pradesh with middle and higher education odds of future preference to use a female method are lower than that of illiterate women. With education couples, have better communication and efficiency to use condoms. Earlier analysis in this paper also supports the view. Experience of abortion or still birth is insignificant in our study on Andhra Pradesh as well as in Uttar Pradesh. In Andhra Pradesh advise by ANM/health worker is important in future intentions to use a female methods as for those who have not been advised the probability of intending to use female method in future is lower than those who are advised. Contrastingly, our earlier analysis reveals that ANM does not always motivate to choose a female method. Advice by ANM or health worker gives information about female methods but in practice the behaviour is different in Andhra Pradesh. In Uttar Pradesh, the results speak differently. Motivation by health worker or ANM is not significantly affecting the future intention to use a female method of contraception.

However, we see that among those who want no more children fewer intend to use a female method of contraception than those who want more children in both Andhra Pradesh and Uttar Pradesh. This is interesting, however, this behaviour of future intention to use contraception needs to be probed into more thoroughly.

6.4 DISCUSSION

Andhra Pradesh has a higher contraceptive prevalence rate among any modern method use: 58.7 percent and Uttar Pradesh has the lowest: 21.6 percent. In Andhra Pradesh a very high percentage (54.0 percent) of couple go for female sterilization and this constitutes about 90% of any modern method use in Andhra Pradesh. However, on the other hand, in Uttar Pradesh at a lower contraceptive prevalence rate female sterilization constitutes about 60 percent and other methods are also used like condom followed by pills and IUD. This paper aims to capture the determinants and the differentials in contraceptive choice behaviour at two levels of contraceptive prevalence and also its gender implications. Though contraceptive choice depends on individual factors, there is a marked regional pattern corresponding to the two levels of contraceptive prevalence. The process of choosing a contraceptive has been pictured by Bulatao and Palmore (1989) as a funnel: moving downwards a wide range of possible methods is gradually reduced to a small selection and eventually to a single method choice by technology and cost, contraceptive suppliers, socio-cultural factors and personal preferences. "Such factors as education and income have been shown to affect choice between contraception and no contraception" (Palmore and Bulatao, 1989, p. 5). This paper tries to investigate for their effect on choice of female method or tubectomy over male method or vasectomy at two levels of contraceptive prevalence.

The result illustrates that choosing a female method over male method is significantly affected by demographic, socio-cultural and economic factors. However, these factors act differently at one, two and three or more children as well as in the two states, Andhra Pradesh and Uttar Pradesh, which are different in both socio-cultural parameters as well as contraceptive prevalence rate of modern methods. The demographic variable of age quite clearly differentiates Andhra Pradesh and Uttar Pradesh's contraceptive choice behaviour. Other interesting revelations in this paper are higher education of women in both Andhra Pradesh and Uttar Pradesh show significantly lower female method choice. Income effect is not clear and only seen in Uttar Pradesh at three or more children. Religion effects are

consistent and contrasting in Uttar Pradesh and Andhra Pradesh. This is very important and brings in the regional effect as well as effect of contraceptive prevalence rate at two levels: lower and higher. Muslims in Andhra Pradesh have a higher probability of choosing female method over male method as well as choosing female sterilization over male sterilization as compared to the Hindus. Peculiarly their counter parts in Uttar Pradesh have a different behaviour. Their odds of choosing female method are significantly lower. These findings clash with many of the earlier findings and stereotype belief that religious prescriptions forbid or are against sterilization or contraception as compared to Hindus. This brings out the fact that contraceptive choice behaviour takes place in a socio- cultural setting shaped by regional contraceptive culture.

When looking at the gender perspective of contraceptive choice behaviour we see that female method is favourite among all irrespective of region or religion. Many qualitative surveys have brought out the various altruistic reasons given by women for accepting female method like tubectomy over male method like vasectomy. Rele *et.al.* (1989) pointed out that "A study done in the districts of Srikakulam, Andhra Pradesh in 1982-83 by Population Research Centre (PRC) of Waltair, gave as the chief reason for tubectomy acceptance that the husband was the family's main breadwinner and that the operation could be performed easily at the time of a delivery". Similar findings were seen in a study in Orissa's Puri district in 1979-80, conducted by PRC Bhubaneshwar, found wives concerns that vasectomy would interfere with their husband's ability to work or support their families as main reason for preferring tubectomy.

A study conducted by Hussain (2003) during the year 1999-2001 among men of two religious communities, living in two localities of Delhi – Gautampuri and Zaffarabad of Sulampur assembly constituency showed quite interesting results. "None of the men from either communities favoured vasectomy because

a) It affects men's virility and masculinity (*mardangi*) is challenged (Caldwell *et.al.* 1987)

b) They are the bread winners and cannot afford to be weakened.

c) Their prospect of re-marriage would be reduced" (Hussain, 2003, p. 56)

Another KABP study of Agra district (Khan and Patel, 1997) revealed similar findings. Another thing which this study brought to light was failure of vasectomy and its social consequences of allegation on wife being unfaithful. A statement from the study showed how ingrained is female sterilization in today's custom- "It is now become a custom that only women undergo sterilization. Now if I adopt vasectomy, people will laugh at me." (p.

21). Hence we see that over time a consensus has developed and it has become custom to adopt female method or more specifically female sterilization. Today's women are going for female methods because of social structure. Moreover, overall contraceptive choice is gender-driven and not based on advantages, disadvantage, safety and efficacy.

Education of wife as well as contraceptive knowledge does make a difference as with higher education and proper knowledge about male methods, both in Uttar Pradesh and Andhra Pradesh, there is relatively lesser female method use.

To some extent the future intentions can be used to explain the existing choice for a contraceptive method. In Andhra Pradesh and Uttar Pradesh, the non- users were asked about their future preference about a method. The analysis shows that at higher education the odds of future intentions to use a female methods or female sterilization are lower. Thus we see that irrespective of region, religion, caste, income contraceptive choice in these two states is the outcome of 'traditional gender roles and gender relations within the larger social structure through which patriarchy operates'(Hussain, 2003, p.71). The previous chapter discusses about male preference for a female method and its reasons. This captures to some extent the reasons for gender bias in choice of contraception and the misconceptions related to a method. The RCH-RHS 1998-99 shows that among all the male respondents, 71 percent preferred a female method. Among the remaining 29 percent, 72 percent reported fear of weakness as the reason for not preferring a male method. In Andhra Pradesh, 88 percent males reportedly preferred a female method. In India, both men and women believe that vasectomy brings in weakness and affect men's virility which makes female sterilization most preferred though it has adverse effect on health of women. Interestingly, vasectomy was the most practiced method in India during the early 70s. However, with emergency and compulsory sterilization vasectomy has become a sensitive issue after the emergency.

Table 6.1

Percentage of currently married women age 15-44 years using modern contraceptive methods by selected demographic variables by state, India, RCH-RHS 1998-99

States	Total	Age		Number of Surviving sons		Number of surviving Daughters		Number of Surviving children		
		< 30 Yrs	30 & >	0	1+	0	1+	0-1	2	3+
Andhra Pradesh	58.7	40.7	78.1	23.8	72.6	34.7	70.5	10.5	71.5	83.1
Arunachal Pradesh	23.8	17.2	28.9	8.4	27.7	17.2	25.8	8.1	23.4	29.6
Assam	28.4	20.8	34.3	14.6	32.8	20.5	31.7	15.8	32.5	33.6
Bihar	23.3	9.6	35.6	2.3	30.7	13.6	27.6	2.4	21.6	34.5
Goa	38.8	25.0	47.0	13.0	50.4	23.1	46.9	11.0	37.4	67.1
Gujarat	52.0	31.2	70.2	12.7	63.5	38.6	58.2	14.6	57.3	69.3
Haryana	52.7	33.6	70.3	9.0	63.6	40.5	58.2	12.6	58.0	67.9
Himachal Pradesh	62.4	39.6	80.9	16.7	74.6	46.3	70.1	18.1	69.4	81.0
Jammu and Kashmir	47.0	26.5	55.8	17.9	52.3	29.4	51.8	15.1	42.6	56.9
Karnataka	57.9	43.1	72.7	22.1	70.5	37.3	67.1	15.5	67.3	80.7
Kerela	57.7	38.1	71.6	35.4	67.6	36.7	67.6	17.0	71.8	79.2
Madhya Pradesh	43.4	23.4	61.9	8.8	53.9	28.7	49.7	9.6	42.6	59.4
Maharashtra	58.3	38.4	77.0	15.1	71.5	39.6	67.0	14.2	61.7	79.6
Manipur	19.4	11.8	24.6	6.9	23.1	12.6	21.9	7.4	20.7	24.6
Meghalaya	13.2	10.3	15.7	9.1	14.1	10.2	13.8	8.5	14.1	14.6
Mizoram	47.5	26.7	62.6	20.9	54.9	28.2	53.4	17.2	38.0	63.2
Nagaland	21.6	14.1	25.5	10.3	23.1	12.0	23.4	9.4	23.9	23.7
Orissa	39.5	23.9	55.3	9.7	50.5	27.0	45.6	9.5	43.5	56.0
Punjab	53.6	38.7	64.2	14.0	62.9	42.4	58.7	20.9	56.5	57.8
Rajasthan	39.0	21.9	55.6	6.2	48.5	25.7	44.8	7.3	38.5	53.4
Sikkim	36.7	29.6	42.2	17.4	41.8	26.9	40.1	15.6	42.4	43.2
Tamil Nadu	49.9	34.6	63.3	22.2	62.1	30.6	60.5	13.0	63.9	71.8
Tripura	40.4	31.6	48.5	20.5	48.2	27.7	46.7	20.2	46.6	52.4
Uttar Pradesh	21.6	11.4	32.1	4.3	27.0	13.1	25.0	4.5	21.7	29.4
West Bengal	45.4	36.5	55.7	21.7	54.3	33.2	51.7	19.3	53.3	50.3
India	42.4	27.1	57.1	14.0	52.1	28.6	48.9	11.2	51.1	55.8

Source: *RCH-RHH (Phase I & II) 1998-99, IIPS, Mumbai.*

Table 6.2

List of variables used in Logistic Analysis

Explanatory Variables	Categories	Reference Category
Type of Locality	Rural Urban	Rural
Religion	Hindu Muslims	Hindu
Ethnicity	Other Caste O.B.C S.T S.C	Other Caste
Type of House	Pucca Semi Pucca Kachcha	Pucca
Age of respondent	15-24 25-34 35-44	15-24years
Education of Respondent	Illiterate Primary Middle Higher	Illiterate
Experience of Still birth or Abortion	Yes No	Yes
Number of Sons	0 1 2 3 and more	Highest number of son/sons
Awareness of Copper-T/Loop	Yes No	Yes
Awareness of Pills	Yes No	Yes
Awareness of Condom	Yes No	Yes
Motivation to use contraception	Self Husband Relatives/Friends ANM/Doctor/Health worker	Self
Information about possible health problems by the Doctor/nurse/ ANM	Yes No	Yes
ANM/Health worker ever advised to adopt any Family planning method	Yes No	Yes
Would like to have children	Want more children Want no more child	Want more children

Dependent variables		
Current Contraceptive users **Current Contraceptive users (among sterilized couples)**	Female Modern Method Male Modern Method Female Sterilization Male Sterilization	
Intention to use any method of Family Planning at any time in future (Intended Choice)	Female Modern Method Male Modern Method	

Table 6.3

Results of Logistic Regression analysis for choosing female method over male method and female sterilization over male sterilization (RCH-RHS-1998-99) in Andhra Pradesh and Uttar Pradesh

Variables	Number of living children									
	1 child		2 children				3 or more children			
	Female Method over Male Method		Female Method over Male Method		Female sterilization over male sterilization		Female Method over Male Method		Female sterilization over male sterilization	
	Andhra Pradesh	Uttar Pradesh	Andhra Pradesh	Uttar Pradesh	Andhra Pradesh	Uttar Pradesh	Andhra Pradesh	Uttar Pradesh	Andhra Pradesh	Uttar Pradesh
Goal	*Odds Ratio*									
Age										
15-24[RC]						≠				≠
25-34 RC for UP (STERILIZATION)	0.463	1.317	1.242	1.542**	0.296		1.635*	1.065	1.595*	
35-44	0.266*	3.690**	0.550**	2.498**	0.513**	0.272**	1.036	1.475*	1.009	0.349**
Experience of Still Birth or Abortion										
Yes	2.251	1.254	1.158	0.781*	1.139	1.455	1.104	0.730**	1.074	1.279
No[RC]										
Number of Sons										
0	1.009	0.886	0.866	0.516**	0.872	1.100	0.761	0.376**	0.740	0.747
1					0.913	0.571*	0.745*	0.660**	0.748*	0.758
2			0.938	0.583**			1.232	0.913	1.206	0.832
3 and more										
* *Highest number of son is the RC at 1,2*										
Competence										
Wife's Education										
Illiterate[RC]										
Primary	0.685	0.798	1.823*	0.823	1.802*	0.627	1.134	0.763**	1.123	0.978
Middle	0.379	0.968	0.830	0.641**	0.835	2.306*	0.660*	0.678**	0.673*	1.019
Higher	0.122**	0.389**	0.491**	0.378**	0.517**	2.847	0.292**	0.362**	0.310**	0.934
Contraceptive Knowledge										
On IUD										
Yes	0.473	0.726	1.083	1.124	1.111	0.996	0.915	0.999	0.886	1.550*
No[RC]										
Pills										
Yes	3.554	3.126	1.261	1.946	1.175	2.719	0.824	1.497*	0.827	1.645*
No[RC]										
Condom										
Yes	0.245*	0.139**	0.604*	0.167**	0.517**	0.309	1.082	0.383**	1.125	0.736
No[RC]										

Evaluation										
Religion										
Hindu[RC]										
Muslims	#	0.383**	2.471*	0.312	2.771*	0.410	2.049**	0.213**	2.045**	1.748
Ethnicity										
Others[RC]										
OBC	0.643	0.941	0.920	0.850	0.928	2.102	0.941	1.003	0.993	2.669**
S.T	0.148**	##	0.362**	##	0.357**	##	0.447**	##	0.445**	##
S.C	0.421	1.638	0.865	0.640*	0.859	0.590	1.365	0.785*	1.362	1.348*
Information about Side-Effects										
Yes	0.819	2.853**	1.377*	3.295**	1.330*	0.908	1.223	3.213**	1.205	1.339*
No[RC]										
Access										
Type of Residence										
Rural[RC]										
Urban	0.776	0.735	0.658**	0.463**	0.684*	0.750	1.206	0.822**	1.196	1.268
Type of House										
Pucca[RC]										
Semi Pucca	0.526	1.217	0.744	1.106	0.730*	1.283	0.907	1.044	0.898	1.232
Kachcha	0.601	0.659	0.816	1.358	0.814	1.648	0.838	1.394**	0.832	1.768**
Program Effort(Motivation)										
Self[RC]										
Husband	0.333**	0.128**	1.040	0.112**	1.105	0.197**	1.205	0.140**	1.199	0.279**
Relatives/Friends	0.442	0.653	1.030	0.441*	1.027	0.500	1.225	0.458**	1.211	0.236**
ANM/Doctors/Health Worker	0.342	1.348	0.743	1.208	0.730	0.534	0.552**	0.535**	0.547**	0.654
Constant	311.115	7.844	22.077	29.077	23.547	94.144	14.329	27.683	15.310	32.418
-2Log likelihood	308.427	750.764	2008.95	2406.41	1942.99	479.19	2994.13	8200.56	2962.30	2811.60
Nagelkerke R^2	0.218	0.399	0.066	0.427	0.064	0.206	0.015	0.300	0.049	0.126
n	574	732	4354	2738	4293	1299	7220	11845	7179	8829

[RC] = Reference Category, **Significant at 1percent level of confidence, *Significant at 5 percent Level of Confidence.

[#] Religion has been dropped as male sterilization for Muslims at one child is zero.

[##] Scheduled Tribes has been dropped from all analysis in Uttar Pradesh as the observations are too low and Male sterilization is zero.

≠ Age group 15-24years has been dropped in Sterilization runs as male sterilization at this age is zero.

Table 6.4

Logistic Regression Results - Future intention to use a Female method over Male method. (RCH-RHS-1998-99)

Variables	**Andhra Pradesh**	**Uttar Pradesh**
	Female Method over Male Method	Female Method over Male Method
	Odds Ratio	
• Age		
15-24[RC]		
25-34	1.032	1.198
35-44	0.830	1.011
• Experience of Still Birth or Abortion		
Yes[RC]		
No	1.370	1.068
• Wife's Education		
Illiterate[RC]		
Primary	1.007	0.769*
Middle	0.651*	0.687**
Higher	0.238**	0.395**
Contraceptive Knowledge		
➢ On IUD		
Yes[RC]		
No	0.571*	0.866
➢ Pills		
Yes[RC]		
No	1.324	0.579**
➢ Condom		
Yes[RC]		
No	0.913	2.347**

• Religion		
Hindu[RC]		
Muslims	1.486	0.253**
• Ethnicity		
Others[RC]		
OBC	0.596*	1.036
S.T	0.364**	1.559
S.C	0.661	1.117
• Type of Residence		
Rural[RC]		
Urban	1.935**	0.804*
• Type of House		
Pucca[RC]		
Semi Pucca	1.115	1.174
Kachcha	1.254	1.477**
• ANM/Health worker advised to adopt any Family planning method		
Yes[RC]		
No	0.643*	1.129
• Would like to have children		
Want more children[RC]		
Want no more child	0.267**	0.819*
-2Log likelihood	1401.312	7946.020
Nagelkerke R^2	0.070	0.080
n	4255	18226

[RC] = Reference Category, **Significant at 1percent level of confidence, *Significant at 5 percent Level of Confidence

CHAPTER- 7

CONCLUSIONS

CHAPTER 7

CONCLUSIONS

7.1 THE ISSUE OF CHOOSING A FEMALE METHOD OF CONTRACEPTION

Today in India 98 percent of the sterilizations are tubectomies (NFHS-II, 98-99), and even among the reversible methods condom, a safe male method, is less popular than Intra uterine device (IUD) and Oral Contraceptive Pills with possibilities of adverse health impact on women. Therefore we have taken up the issue of overdependence on female methods, with the objective of investigating the factors controlling choice of female method over male method. Before examining the indigenous context we look at the International sterilization scenario. We have taken up sterilization as it has long term effect and in many places the most preferred method of contraception. The male female sterilization ratio delineated the position of India with reference to developed American and European countries, and African, Asian, and Latin American countries. It is seen that most of the African and Latin American countries have a very high percentage of female sterilizations. Most of the Asian countries are also following the same line. Some of the developed countries in Central America, Germany and Italy also have higher female sterilizations than male. On the other hand, New Zealand, United Kingdoms, Netherlands have higher male sterilizations than female. India with its patriarchal setting is not the only country with high female sterilization over male. This has been a much debated topic. In this paper we have not made any comparative study but we have looked into the international scenario only to place India in it.

The literature review has brought forth the various socio-demographic factors affecting contraceptive choice in India. However, to study choice of a female method we look into various factors affecting choice in more details and the pathways affecting choice of contraception in general. We have looked into program factors, socio-economic factors, cultural factors and contraceptive technology affecting choice directly and indirectly. Indirectly, through desire to regulate fertility, awareness, couple's perception of reproductive health, fear and misconception and finally access and availability. Our study has used RCH-RHS (phase I and II) 1998-99 because of its larger sample size than NFHS-II (1998-99). Moreover it also touches specific aspects of choice which NFHS-II does not look into.

7.2 SUMMARY OF RESULTS

Our study has examined choice as a two step process. The woman first decides to use contraception and then chooses among the various methods available. Thus the setting stage for the study is prepared. We then look at the temporal variation in male and female sterilization from 1966-2000. The Ministry of Health and Family Welfare gives us the sterilization scenario that is couples effectively and currently protected by sterilization. However, to capture the sex- differentials in contraceptive use, couples currently and effectively protected by tubectomy and vasectomy have to be examined. To this end the number of acceptors by age is projected for every five-year till all the acceptors of that year phase out. This calculation is done for each year of acceptance from the 1960s to 2001 for both vasectomy and tubectomy. From couples currently and effectively protected by vasectomy and tubectomy separately we calculate CPR for tubectomy and vasectomy for the year 1960-2001. The line graph on percentage of couples protected by tubectomy to percentage of couples protected by sterilization illustrates that till 1967 there has been a low level of tubectomy users with some crest and troughs but after emergency that is after 1976 there has been a steady increase in number of tubectomy users till date. This shift from vasectomy to tubectomy over time calls for investigations into factors affecting contraceptive choice at present.

Knowledge an important factor in choice has been looked into over time from 1970-1988 using the All India Surveys by the Operation Research Group on family planning practices in India. The all India surveys by the Operation Research Group on family planning practices in India give the awareness level statistics for 1970s (First All India survey), 1980 (second All India survey), 1990 (Third All India Survey). The RCH-RHS has been used as well as NFHS report for 1998 statistics. The graph portrays the awareness level changes of each of the modern contraceptive methods. Table 5.2A shows that the awareness about vasectomy was higher than tubectomy in the 70s. However, after ten years knowledge level of tubectomy rose and also vasectomy and both were almost the same. In 1980s awareness about tubectomy was slightly higher than vasectomy; this trend continued till 1998. For other modern methods like Intra Uterine Device (IUD), Condom, and Oral Contraceptive Pills (OCPs) knowledge level shows an increasing trend but these are lower than sterilization. However, awareness levels about female spacing methods like IUD and OCPs are higher than condom even today.

The trends on percentage of couples protected by sterilization to percentage of couples protected by sterilization shows the share of tubectomy ever rising. Further, the

knowledge of tubectomy has also shown a rising trend from 1970. However, we can say that the knowledge of vasectomy in India is also high even though the reliance on female sterilization is high.

Thus, we start focusing our study from international sterilization scenario to India – state and individual level. India has an overall high reliance on female methods especially tubectomy. Within each state also tubectomy predominates. In this backdrop to assess the macro level factors in choosing a female method over male we have modeled it with multiple regression equation. The dependent variable is percentage of female method users among percentage total users and percentage of tubectomy among percentage sterilized. This actually captures the aspects of choice of contraception. Socio – economic and cultural variables are taken as predictor variables. Among the macro level (interstate analysis) factors only urbanization and knowledge of condom shows a significant positive and negative effect respectively on choosing a female method of contraceptive. This calls for individual level analysis. Here we have used logistic regression to model contraceptive choice as the dependent variable is dichotomous. Modeling contraceptive choice behaviour and generalizing it is in itself a difficult task. However, in this study we have used Bulatao's framework to make contraceptive choice operational.

The logistic regressions are used at one, two and three or more living children for the states of Andhra Pradesh and Uttar Pradesh to capture the contraceptive choice behaviour at higher and lower levels of contraceptive prevalence rate respectively. Moreover, the north-south delineation of the states as well as the socio-cultural differences adds certain facets to the investigations into choosing a female method and female sterilization over male method and male sterilizations.

Andhra Pradesh at a higher CPR of modern methods (58.7 percent) shows a dominance of female sterilization in the contraceptive scenario. However, on the other side Uttar Pradesh though at a lower CPR (21.6 percent), female sterilization constitutes about 60 percent and other methods are also used like condom followed by pills and IUD.

Our findings shows that though contraceptive choice depends on individuals, there is a marked regional pattern as well as pattern at two levels of contraceptive prevalence which Bulatao (1989, p.278) puts it as "factors important in choice vary from place to place, person to person, and time to time." This paper shows that choosing a female method over male method or female sterilization over male sterilization is significantly effected by demographic, socio-cultural and economic factors which do not operate in

isolation but tend to interact with or reinforce one another. However these factors act differently at one, two and three or more living children as well as at regional level.

The demographic variable of age quite clearly differentiates Andhra Pradesh and Uttar Pradesh's contraceptive choice behaviour. Other interesting revelation in this analysis is that higher education of women in both Andhra Pradesh and Uttar Pradesh shows significant odds in lower female method choice. Religion effects are different in Uttar Pradesh and Andhra Pradesh. This is very important and brings in the regional effect or possibly effect of contraceptive prevalence rate at two levels: lower and higher. Muslims in Andhra Pradesh have a higher probability of choosing female method over male method as well as choosing female sterilization over male sterilization as compared to the Hindus. Peculiarly their counter parts in Uttar Pradesh have a different behaviour. Their odds of choosing female method are significantly lower. These findings clash with many of the earlier findings and stereotype belief that religious prescriptions among Muslims forbid or are against sterilization or contraception as compared to Hindus. This brings out the fact that contraceptive choice behaviour takes place in a socio- cultural setting shaped by regional contraceptive culture. When looking at the gender perspective of contraceptive choice behaviour we see that female method is favoured among all irrespective of region or religion, though the degree of preference varies.

To some extent the future intentions can be used to explain the existing choice for a contraceptive method. In Andhra Pradesh, the non-users were asked about their future preference about a method. The analysis shows that with higher education of wife future intentions to use a female method is lower than male method as compared to illiterates in both Uttar Pradesh and Andhra Pradesh. Type of place of residence has also significant effect but it is different for both the states. In Andhra Pradesh, urban areas have more intentions to use a female method as compared to rural but in Uttar Pradesh urban areas have lower intentions to use a female method over male as compared to rural areas. In Andhra Pradesh the CPR is higher with predominance of female sterilization as compared to Uttar Pradesh. Fertility goals are also important in lowering the future intentions to use female method over male. Hence from the empirical analysis we can conclude that with time as level of CPR raises the share of female sterilization also rises, though male methods like condom show an increasing trend. With education effect we see that as the level of education raises the share of male method rises.

Hence, higher education of the wife is the key factor in choosing a female method over male method of contraception, but not the only determinant. Age, knowledge of condom, religion and motivation by husband also shapes choice of women. Within these variables higher education, knowledge about condom and motivation by husband lowers probability of choosing a female method over male in general in both the states. On the other hand, higher age (35-44) and religion shows a contrasting effect on choice of female method over male in Andhra Pradesh and Uttar Pradesh. Possibly this may be the effect of contraceptive prevalence or region effect as such. Thus contraceptive choice behaviour is shaped by regional reproductive practices and not by religion alone. In the analysis for intended choice also higher education lowers the odds for choosing female method over male method. However, type of residence shows differential effect on intended choice for Andhra Pradesh and Uttar Pradesh.

The data used here are RCH-RHS (phase I and II) 1998-99. The RCH-RHS has specific questions for factors affecting contraceptive choice such as the program factor and male preference as well as female preference. However, it does not have the female autonomy variables. Thus the link between female autonomy and contraceptive choice was not tested empirically though the conceptual framework deals with it. Another factor is technology and choice which is not studied as technology is very difficult to measure. Supply side factors of choice also are not considered properly. The study circulates around macro and micro level choice factors but the actual and perceived attributes of each and every method, its effectiveness, convenience and side-effects has not been given much importance in its content.

7.3 CONCLUSIONS

In India both men and women believe that vasectomy brings in weakness and affect men's virility which makes female sterilization most preferred though vasectomy being a simpler procedure has a much lower risk of adverse health impact. Hence today's women are going for female methods because of social structure. Moreover, overall, contraceptive choice is gender –driven and not based on advantages, disadvantage, safety and efficacy. In India the shift in choice has been from male method to female rather than ineffective to effective methods.

Interestingly vasectomy was the most practiced method in India during the early 70s. However with emergency and compulsory sterilization, vasectomy has become a sensitive issue in today's date. The over dependence on female sterilization today may be

partly explained by the simplified laparoscopic operations, this is where technology comes in. Briefly we can observe that in India consensus about a method has developed over time and it has taken the shape of a custom in our social structure leading to changes in acceptance and use. Thus, contraceptive behaviour does not only take place in a socio-cultural setting but also in a temporal context shaped by technology.

Research into new contraceptive technologies should bring in more choices for males which should be included in the choice basket. Moreover, there should also be efforts to popularize vasectomy and bring in easy technology in male sterilization. Steps should also be taken to encourage spacing as an alternative to terminal methods, that is non-permanent methods like condom should be encouraged. Male involvement in reproductive health and contraception should be increased and maternal and child health programs should also cull out men's role in maternal and child health. There should be informed choices and also efforts to free society from making gender-driven choices for contraception. Focus on general health, safety and efficacy of a contraceptive method is desirable. Increasing education among the women is also an important factor in this process.

Qualitative research in this field of choice is necessary to capture the regional level socio- cultural and reproductive practices and also the ingrained beliefs. Much research has been done on women; however, primary and secondary research involving currently married males and their future intentions and choice should be studied. Moreover, we should also have a better understanding of how women and men make choices and "negotiate trade-offs among methods" (Santhya, 2004, p. 43). The supply side factors as well as the service system and its quality should also be probed into to see the other factors affecting choice. Autonomy and contraceptive choice can also bring in the setting of power dynamics in which the couples make choices.

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AN INVESTIGATION INTO THE CHOICE OF FEMALE METHODS OF CONTRACEPTION IN INDIA

ABSTRACT

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AN INVESTIGATION INTO THE CHOICE OF FEMALE METHODS OF CONTRACEPTION IN INDIA

ABSTRACT

India, in its backdrop of high population growth, was the pioneer to establish a population programme. Through this the state promoted the individual regulation of fertility for achieving national goals. Looking at the temporal trends, prior to 1977 the population programme had strong motivation campaign accompanied by incentives to the acceptors and targets for programme workers and sterilization camps. Vasectomy at that time was the predominant method of acceptance. Backlash against the programme resulted in near abandoning of vasectomies and as a consequence almost the entire burden of contraception fell on women. Today India's Family Welfare programme is over dependent on female sterilization (Gulati, 1996, p. 205) – 98 percent of the sterilizations in India are tubectomies (NFHS-II, 1998-99), even among the reversible methods condom, a safe male method, is less popular than Intra Uterine Device (IUD) and Oral Contraceptive Pills (O.C.Ps) with possibilities of adverse health impact on women. A woman thus has to choose between frequent child bearing and accepting contraceptive along with its risk. The officially sponsored Family Planning Programme in India portrays the emerging gender inequalities- "There is pronounced gender bias in favour of males in the choice of method" (Raju and Bhat, 1996, p. 57). In theory, the programme relies on 'informed choice'- The National Population Policy 2000 affirms the commitment of the government towards voluntary and informed choice and consent of citizens while availing reproductive health care services. However in practice is this choice constrained by programme, cultural factors or individual characteristics? 'Woman's freedom to choose depends upon specific socio-economic relations, national policy, the political climate and culturally determined ideas regarding women' (Gupta, 2000, p. 27). Is the lack of male acceptance a consequence of patriarchy which dictates the choice suited to males? Do programme personnel accept this social structure and accordingly direct their efforts towards promoting female methods? India's national

programme has had a history of emphasizing particular methods earlier IUD, then vasectomy and 'until recently the programme emphasis remains skewed towards promoting non- reversible methods, particularly female sterilization' (Santhya, 2004, p. 26). The macro level picture of contraceptive burden has a different frame from the micro level picture which is culture. Gender is an important component of culture as well. In such a scenario where culture affects decision making and behaviour of females, woman's behaviour and decision making can be guided by local reproductive culture. Women have thus become pawns in the interplay of three forces – state, culture, and policy and its administration. The policy perceives to lower population growth through propagation of contraception and culture that gives women little scope for choice. However, there is also a 'wide gap between knowledge and practice of family planning methods among the married couples' (Demographic Research Centre, Trivandrum, 1969). Thus, this study tries to capture the causes of over dependence on female methods specifically female sterilization and brings out if the population policy is gendered and also highlights the socio cultural factors which adds up for such a high tubectomy percentage in India calling for policy makers to popularize male methods along with female methods.

OBJECTIVES AND STUDY AREA

This study tries to examine the choice of contraception in a gender perspective and seeks to ascertain the factors controlling contraceptive choice in India. It also tries to capture the deep rooted socio cultural elements which generate such a lopsided ratio of female sterilization to male sterilization and other contraceptives. Are there regional, religious and socio- economic differentials in the pattern or not? Thus we have taken up the lopsided statistics on overdependence on female methods, with the objective of investigating the factors controlling choice of female method over male method.

The overall approach adopted in this work is briefly noted below. The international scenario of sterilization patterns has been worked out with the help of Family Planning World Wide Datasheet. This gives us a clear picture where India stands in reference to the Developed, African, Asian, and Latin American countries. The focus is then on India. First, the changes in the level and pattern of contraceptive acceptance and then use are discussed. Inter-state analysis to capture the macro level regional factors in choice of

contraception follows. Finally, individual level analysis to assess the effect of background characteristics on choice of contraception has been carried out. This has been done for the states of Andhra Pradesh and Uttar Pradesh. Table 1.2 shows that Andhra Pradesh has the highest contraceptive prevalence rate in any modern method while Uttar Pradesh has the lowest contraceptive prevalence rate (RCH-RHS, 1998-99). To see the contrasting characteristics of contraceptive behaviour at higher and lower level we have chosen these two states. Along with this the socio-demographic and cultural differences in northern and southern states will also help us identify the factors affecting choice of a female method of contraception and also future intentions to choose a female method over male method, controlling for other variables.

ORGANIZATION OF CHAPTERS

Chapter – 1 starts with the objective of investigating the factors controlling choice of female method over male method at the higher and lower contraceptive prevalence rates. Thus our study area is Andhra Pradesh and Uttar Pradesh with high and low Contraceptive prevalence rate.

Before examining the indigenous context we look at the international sterilization scenario.

Chapter – 2 is the literature review where we have strung the scattered beads of prior research in this area and has brought forth the various socio-demographic factors affecting contraceptive choice in India. However to study choice of a female method we look into various factors affecting choice in more details and their pathways affecting choice of contraception in general.

In ***chapter – 3*** we discuss the conceptual framework, methodology and data base. Our study has used RCH-RHS (phase I and II) 1998-99 because of its larger sample size than NFHS-II (1998-99). Our study has seen choice as a two step process. The woman first decides to use contraception and then chooses among the various methods available. Thus the setting stage for the study is prepared in this chapter.

Chapter-4 looks into the acceptance trend of all modern contraceptive methods and then finally examines the temporal variation in male and female sterilization from 1966-2000. The Ministry of Health and Family Welfare gives us the sterilization scenario that is couples effectively and currently protected by sterilization. In this very chapter we

capture the sex- differentials in contraceptive use, couples currently and effectively protected by tubectomy and vasectomy.

Chapter -5 deals with the interstate analysis. Knowledge, an important factor in choice has been looked into over time from 1970-1988 using the All India Surveys by the Operation Research Group on family planning practices in India and NFHS-I and II and RCH-RHS 1998-99 after that.

Finally in ***chapter – 6*** we start focusing our study from International sterilization scenario to India – state and individual level. India has an overall high reliance on female methods especially tubectomy. Here we have used logistic regression to model contraceptive choice as the dependent variable is dichotomous.

Chapter-7 is the conclusions. This is the stage where we can conclude about the factors affecting choice of a female method over a male and also female sterilization over male.

RESEARCH QUESTIONS

In order to explore the issues of contraceptive choice in India, a number of research questions as noted below, need to be answered.

Is the greater reliance on female methods contributed by difference in knowledge and preference?

Is there a difference between knowledge, preference, and actual use of a particular method?

Is the gender bias in contraceptive use because of patriarchy?

Are the programme efforts promoting skewed non-reversible methods, particularly female sterilization?

Does choice of contraceptive method vary by region and level of contraceptive prevalence?

What role do socio-economic, background characteristics play in contraceptive choice?

RESEARCH DESIGN AND DATA

The analytical framework guides the approach to research in this study. It must be noted that set of analysis would be required to meet the objective of the study. There are certain questions that can be analyzed on the basis of data on individual couple's contraceptive choice and practice but certain issues call for macro level analysis.

First, changes in pattern of acceptance over time need to be analyzed. This will inform us on whether the pattern has remained unchanged, and if not, points of break. This analysis could be linked to available information on developments in contraceptive technology and changes in program strategies. Chapter 4 addresses this issue. For this purpose, trends in method wise acceptance taken from statistics provided by the department of Family Welfare. Contraceptive Prevalence Rates have been computed from the acceptance data following demographic techniques. Details of the sources and quality of data the, the demographic techniques and the validity tests are provided in Chapter 4.

Also of importance is the question on regional variations in the acceptance pattern given the diversity in India in socio-economic conditions, one would expect certain variations across states or regions of India. These could conceivably be on account of socio-economic variations, cultural differences, and program factors. Therefore an analysis of acceptance pattern across states has been carried out to see first, whether the pattern vary substantially, and subsequently, to examine if the differences are accounted for by socio-economic factors. These aspects are covered in Chapter 5.

Finally the Bulatao model as well as the framework developed here looks at the choice of an individual. Determinants of individual choice are examined employing multivariate analysis in Chapter 6. This analysis looks both at the choice who have used a method and the preference of those who intend to use a method.

The principle source of data for the analysis of choice, both the interstate and the individual analysis the RCH-RHS 1998-99. Reproductive and Child Health-Rapid Household Survey (RCH-RHS) conducted in two phases (Phase-1 in 1998 and phase-2 in 1999).

SUMMARY OF RESULTS

Our study has examined choice as a two step process. The woman first decides to use contraception and then chooses among the various methods available. Thus the setting stage for the study is prepared. We then look at the temporal variation in male and female sterilization from 1966-2000. The Ministry of Health and Family Welfare gives us the sterilization scenario that is couples effectively and currently protected by sterilization. However, to capture the sex- differentials in contraceptive use, couples currently and

effectively protected by tubectomy and vasectomy have to be examined. To this end the number of acceptors by age is projected for every five-year till all the acceptors of that year phase out. This calculation is done for each year of acceptance from the 1960s to 2001 for both vasectomy and tubectomy. From couples currently and effectively protected by vasectomy and tubectomy separately we calculate CPR for tubectomy and vasectomy for the year 1960-2001. The line graph on percentage of couples protected by tubectomy to percentage of couples protected by sterilization illustrates that till 1967 there has been a low level of tubectomy users with some crest and troughs but after emergency that is after 1976 there has been a steady increase in number of tubectomy users till date. This shift from vasectomy to tubectomy over time calls for investigations into factors affecting contraceptive choice at present.

Knowledge an important factor in choice has been looked into over time from 1970-1988 using the All India Surveys by the Operation Research Group on family planning practices in India. The all India surveys by the Operation Research Group on family planning practices in India give the awareness level statistics for 1970s (First All India survey), 1980 (second All India survey), 1990 (Third All India Survey). The RCH-RHS has been used as well as NFHS report for 1998 statistics. The graph portrays the awareness level changes of each of the modern contraceptive methods. Table 5.2A shows that the awareness about vasectomy was higher than tubectomy in the 70s. However, after ten years knowledge level of tubectomy rose and also vasectomy and both were almost the same. In 1980s awareness about tubectomy was slightly higher than vasectomy; this trend continued till 1998. For other modern methods like Intra Uterine Device (IUD), Condom, and Oral Contraceptive Pills (OCPs) knowledge level shows an increasing trend but these are lower than sterilization. However, awareness levels about female spacing methods like IUD and OCPs are higher than condom even today.

The trends on percentage of couples protected by sterilization to percentage of couples protected by sterilization shows the share of tubectomy ever rising. Further, the knowledge of tubectomy has also shown a rising trend from 1970. However, we can say that the knowledge of vasectomy in India is also high even though the reliance on female sterilization is high.

Thus, we start focusing our study from international sterilization scenario to India – state and individual level. India has an overall high reliance on female methods especially tubectomy. Within each state also tubectomy predominates. In this backdrop to assess the macro level factors in choosing a female method over male we have modeled it with multiple regression equation. The dependent variable is percentage of female method users among percentage total users and percentage of tubectomy among percentage sterilized. This actually captures the aspects of choice of contraception. Socio – economic and cultural variables are taken as predictor variables. Among the macro level (interstate analysis) factors only urbanization and knowledge of condom shows a significant positive and negative effect respectively on choosing a female method of contraceptive. This calls for individual level analysis. Here we have used logistic regression to model contraceptive choice as the dependent variable is dichotomous. Modeling contraceptive choice behaviour and generalizing it is in itself a difficult task. However, in this study we have used Bulatao's framework to make contraceptive choice operational.

The logistic regressions are used at one, two and three or more living children for the states of Andhra Pradesh and Uttar Pradesh to capture the contraceptive choice behaviour at higher and lower levels of contraceptive prevalence rate respectively. Moreover, the north-south delineation of the states as well as the socio-cultural differences adds certain facets to the investigations into choosing a female method and female sterilization over male method and male sterilizations.

Andhra Pradesh at a higher CPR of modern methods (58.7 percent) shows a dominance of female sterilization in the contraceptive scenario. However, on the other side Uttar Pradesh though at a lower CPR (21.6 percent), female sterilization constitutes about 60 percent and other methods are also used like condom followed by pills and IUD.

Our findings shows that though contraceptive choice depends on individuals, there is a marked regional pattern as well as pattern at two levels of contraceptive prevalence which Bulatao (1989, p.278) puts it as "factors important in choice vary from place to place, person to person, and time to time." This paper shows that choosing a female method over male method or female sterilization over male sterilization is significantly effected by demographic, socio-cultural and economic factors which do not operate in

isolation but tend to interact with or reinforce one another. However these factors act differently at one, two and three or more living children as well as at regional level.

The demographic variable of age quite clearly differentiates Andhra Pradesh and Uttar Pradesh's contraceptive choice behaviour. Other interesting revelation in this analysis is that higher education of women in both Andhra Pradesh and Uttar Pradesh shows significant odds in lower female method choice. Religion effects are different in Uttar Pradesh and Andhra Pradesh. This is very important and brings in the regional effect or possibly effect of contraceptive prevalence rate at two levels: lower and higher. Muslims in Andhra Pradesh have a higher probability of choosing female method over male method as well as choosing female sterilization over male sterilization as compared to the Hindus. Peculiarly their counter parts in Uttar Pradesh have a different behaviour. Their odds of choosing female method are significantly lower. These findings clash with many of the earlier findings and stereotype belief that religious prescriptions among Muslims forbid or are against sterilization or contraception as compared to Hindus. This brings out the fact that contraceptive choice behaviour takes place in a socio- cultural setting shaped by regional contraceptive culture. When looking at the gender perspective of contraceptive choice behaviour we see that female method is favoured among all irrespective of region or religion, though the degree of preference varies.

To some extent the future intentions can be used to explain the existing choice for a contraceptive method. In Andhra Pradesh, the non-users were asked about their future preference about a method. The analysis shows that with higher education of wife future intentions to use a female method is lower than male method as compared to illiterates in both Uttar Pradesh and Andhra Pradesh. Type of place of residence has also significant effect but it is different for both the states. In Andhra Pradesh, urban areas have more intentions to use a female method as compared to rural but in Uttar Pradesh urban areas have lower intentions to use a female method over male as compared to rural areas. In Andhra Pradesh the CPR is higher with predominance of female sterilization as compared to Uttar Pradesh. Fertility goals are also important in lowering the future intentions to use female method over male. Hence from the empirical analysis we can conclude that with time as level of CPR raises the share of female sterilization also rises, though male

methods like condom show an increasing trend. With education effect we see that as the level of education raises the share of male method rises.

Hence, higher education of the wife is the key factor in choosing a female method over male method of contraception, but not the only determinant. Age, knowledge of condom, religion and motivation by husband also shapes choice of women. Within these variables higher education, knowledge about condom and motivation by husband lowers probability of choosing a female method over male in general in both the states. On the other hand, higher age (35-44) and religion shows a contrasting effect on choice of female method over male in Andhra Pradesh and Uttar Pradesh. Possibly this may be the effect of contraceptive prevalence or region effect as such. Thus contraceptive choice behaviour is shaped by regional reproductive practices and not by religion alone. In the analysis for intended choice also higher education lowers the odds for choosing female method over male method. However, type of residence shows differential effect on intended choice for Andhra Pradesh and Uttar Pradesh.

The data used here are RCH-RHS (phase I and II) 1998-99. The RCH-RHS has specific questions for factors affecting contraceptive choice such as the program factor and male preference as well as female preference. However, it does not have the female autonomy variables. Thus the link between female autonomy and contraceptive choice was not tested empirically though the conceptual framework deals with it. Another factor is technology and choice which is not studied as technology is very difficult to measure. Supply side factors of choice also are not considered properly. The study circulates around macro and micro level choice factors but the actual and perceived attributes of each and every method, its effectiveness, convenience and side-effects has not been given much importance in its content.

CONCLUSIONS

In India both men and women believe that vasectomy brings in weakness and affect men's virility which makes female sterilization most preferred though vasectomy being a simpler procedure has a much lower risk of adverse health impact. Hence today's women are going for female methods because of social structure. Moreover, overall,

contraceptive choice is gender –driven and not based on advantages, disadvantage, safety and efficacy. In India the shift in choice has been from male method to female rather than ineffective to effective methods.

Interestingly vasectomy was the most practiced method in India during the early 70s. However with emergency and compulsory sterilization, vasectomy has become a sensitive issue in today's date. The over dependence on female sterilization today may be partly explained by the simplified laparoscopic operations, this is where technology comes in. Briefly we can observe that in India consensus about a method has developed over time and it has taken the shape of a custom in our social structure leading to changes in acceptance and use. Thus, contraceptive behaviour does not only take place in a socio-cultural setting but also in a temporal context shaped by technology.

Research into new contraceptive technologies should bring in more choices for males which should be included in the choice basket. Moreover, there should also be efforts to popularize vasectomy and bring in easy technology in male sterilization. Steps should also be taken to encourage spacing as an alternative to terminal methods, that is non-permanent methods like condom should be encouraged. Male involvement in reproductive health and contraception should be increased and maternal and child health programs should also cull out men's role in maternal and child health. There should be informed choices and also efforts to free society from making gender-driven choices for contraception. Focus on general health, safety and efficacy of a contraceptive method is desirable. Increasing education among the women is also an important factor in this process.

Qualitative research in this field of choice is necessary to capture the regional level socio- cultural and reproductive practices and also the ingrained beliefs. Much research has been done on women; however, primary and secondary research involving currently married males and their future intentions and choice should be studied. Moreover, we should also have a better understanding of how women and men make choices and "negotiate trade-offs among methods" (Santhya, 2004, p. 43). The supply side factors as well as the service system and its quality should also be probed into to see the other factors affecting choice. Autonomy and contraceptive choice can also bring in the setting of power dynamics in which the couples make choices.