CONTRACEPTIVE MORBIDITY AND TREATMENT SEEKING BEHAVIOR IN INDIA: AN ANALYSIS OF RCH-RHS DATA, 1998-99

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CERTIFICATE

I, PREETI LATA, certify that the dissertation entitled **"CONTRACEPTIVE MORBIDITY AND TREATMENT SEEKING BEHAVIOR IN INDIA: AN ANALYSIS OF RCH-RHS DATA, 1998-99"** for the degree of **MASTER OF PHILOSOPHY** is my bonafide work and may be placed before the examiners for evaluation.

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Dedicated

To

Maa and Papa

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

Introduction

CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION

India was the first country in the developing world to launch a national family planning program with an aim to lower fertility and curtail the growth rate. Initially, clinics were established for people to obtain contraceptive services. However, by the mid-1960s, it became obvious that a more active role had to be taken to educate the community about the importance of family planning and the availability of contraceptive services in the clinics. Contraceptive methods offered by national family planning programme include IUDs, oral contraceptives, condoms, vasectomy, and tubectomy. Government emphasis affected the acceptance of various birth control methods. During 1960s target oriented method specific approach was emphasized. As a result, an intensive programme for IUD insertions was launched, which was initially successful in recruiting acceptors, but soon showed a reverse trend. 'Careless handling of IUD insertions by paramedical staff and inadequate follow-up treatment had caused the loss of popularity', of the method (Ministry of education and social welfare, GOI, 1974, p: 26). In the 1970s there was an intensive sterilisation drive which largely obviated the client's choice and narrowed down range of services available. Since the 1980s there has been a clear shift towards propagating hormonal contraceptives, although sterilisation still remained the most widely used method. After 1977 the family planning programme became family welfare programme which currently administers maternal and child health services through various primary and community health centers and district and sub district hospitals.

Family welfare services in urban area are offered through medical college hospitals and clinics, district hospitals, and urban welfare centers. In rural areas, these services are offered by primary health centers (PHCs). A PHC caters to the health needs of about 30,000 people and has about 5-10 sub centers within its area for accessibility. According to the latest statistics, there are 22842 PHCs and 137311 sub centers in India. (MOHFW, 2003)

Although the size of the infrastructure and the extent to which it has penetrated the rural areas constitutes a remarkable organizational accomplishment, the programme as a whole has not been totally successful in achieving demographic targets. However, the population growth rate, which had accelerated during 1951 to1961, had leveled off during the years 1971 to 1981. During 1991-2001 the growth rate has lowered to 1.95 percent per annum. In addition, the percentage of couples protected by effective contraception has almost doubled in this decade (22.8 percent in 1981 to 48.2 percent in 1998-99 {NFHS-2}).

Since the International Conference on Population and Development (ICPD), 1994 an international consensus has been established on a new approach for policies to achieve population stabilization. Fertility reduction had to be addressed at the level of broad social policy, including reduction of gender discrimination in education, health care and income generation. Reproductive health programmes now focused on the needs of actual and potential clients, not only for limiting births but also for healthy sexuality and child bearing. In India the implications of reproductive health approach now shifted its focus from the use of family planning as a tool intended essentially for population stabilization, to use family planning as one among a constellation of interventions that would enable women and men to achieve their personal reproductive goals without being subjected to additional burdens of disease and death associated with their reproduction. .

Reproductive health encompasses a range of health concerns, as indicated in the consensus definition emerging from the International Conference on Population and Development (ICPD) at Cairo. Specifically, reproductive health is defined as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes (United Nations, 1994).

The major achievement of the Indian family planning programme has been that nearly half the couples in reproductive age group of 15-49 have been effectively protected against the risk of conception (IIPS, 2001; IIPS and ORC Macro, 2000). Despite the decline in fertility due to effective couple protection, the reproductive health situation in India remains poor. Maternal mortality rates remain among the highest in the

world. Moreover, two-thirds of Indian Women go through pregnancy and childbirth without seeing a trained birth attendant, and obstetric and gynecological disorders are widely prevalent and remain largely untreated and silently borne. The majority of maternal deaths and episodes of ill health (morbidity) in India are preventable given that both the knowledge and means of prevention are available.

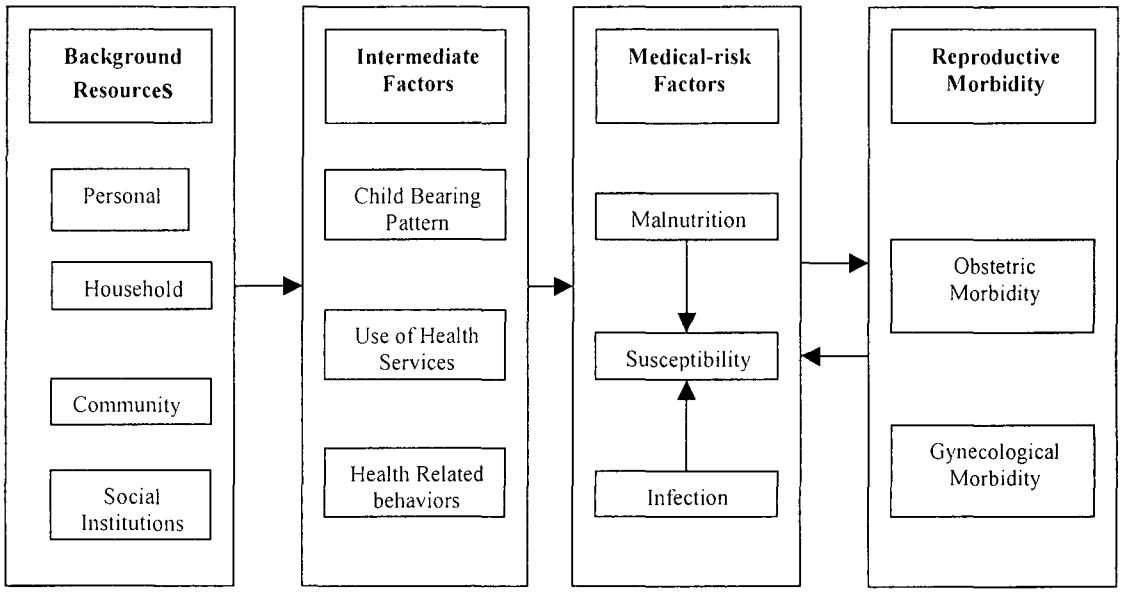
However, women's reproductive health exists within a larger socio-cultural framework that is often ignored. Maternal morbidity and reproductive morbidity in general, is an outcome of not just biological factors but of women's poverty, powerlessness and lack of control over resources as well. Malnutrition, infection, early and repeated childbearing and high fertility also plays an important role in poor maternal health conditions in India. Lack of access to health care, along with the poor quality of the delivery system and its inadequate responsiveness to women's needs, exacerbate maternal morbidity.

Reproductive morbidity is defined as any morbidity or dysfunction of the reproductive tract or any morbidity which as a consequence of reproductive behavior including pregnancy, abortions, childbirths, or sexual behavior (World Health Organization, 1990). Reproductive morbidity refers to conditions of ill health related to the reproductive process during and outside the childbearing period (Oomman, 2000a). Zurayk *et al.*, (1993) defined reproductive morbidity to encompass obstetric morbidity including conditions during pregnancy, delivery and the post partum period; and gynecological morbidity included conditions of the reproductive tract not associated with a particular pregnancy such as reproductive tract infections, cervical cell changes, prolapse and infertility. In this model (Figure 1.1) they also included the related morbidities such as conditions of urinary tract infections, anemia, high blood pressure, obesity and syphilis as a systemic condition. In the model they discussed that reproductive morbidity is affected by medical risk factors and intermediate factors. Within the purview of intermediate variables comes woman's childbearing pattern which relates to her age at childbearing episodes, the number of pregnancies and births, and the extent of birth spacing. (Zurayk *et al.*, 1993) The model does discuss the woman's childbearing pattern and
her health related behavior but does not clearly talks about the means by which she would achieve spacing in between the births. By stating the 'extent of birth spacing'

the model might be implicitly assuming the contraceptive methods used (traditional or modern), breastfeeding or postpartum abstinence. The use of contraceptive method may cause certain method specific morbidities which may be affected by the background resources. So if contraceptive use is included as intermediate variable in the model we may have another type of morbidity within the reproductive morbidity i.e., Contraceptive Morbidity.

Figure 1.1

Determinants of Reproductive Morbidity

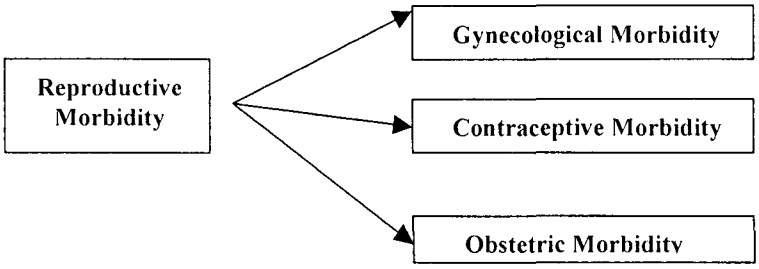


Source: Zurayk *et al.*, 1993

Thus, Reproductive morbidity can be broadly categorized into three subgroups: obstetric morbidity, gynecological morbidity and contraceptive morbidity. *Obstetric morbidity* refers to ill health in relation to pregnancy and childbirth. *Gynecological morbidity* includes health problems outside pregnancy such as RTI's, menstrual problems, cervical ectopy, infertility, cancers, prolepses and problems related to

intercourse. *Contraceptive morbidity* includes conditions, which result from efforts to limit fertility, whether they are traditional or modern methods.

Figure 1.2 Types of Reproductive Morbidity



Although the use of contraception prevents unwanted pregnancy and in some cases protects against sexually transmitted diseases, it may also raise the risk of infections, resulting in contraceptive morbidity. Therefore, the choice of contraceptives is often influenced by the fear of side effects and perception of morbidity during its use (IIPS and ORC MACRO, 2000). After Cairo conference there is a growing concern on the general health and morbidity status of women in India but little attention has been given to the issue.

Contraceptive morbidity is an outcome of the interaction of social, behavioral and biological factors. We know that social factors like place of residence, religion or education affect women's choice of the method, her access to health care facilities but have no direct mechanism explaining the interaction of these variables; which cause the contraceptive morbidity and how seriously the women perceive about their health. Improvements in the socio-economic status of women may have an effect on their health status, reproductive status, or their access to or use of the health services. Thus, the present study examines and explains the trends and factors responsible for the contraceptive morbidity among the currently contraceptive users and their treatment seeking behavior in India.

1.2 THE STUDY AREA

In the present study all India analysis has been done on the contraceptive morbidity and treatment seeking behavior among the current users of contraception. For the

analysis, data has been taken from RCH-RHS 1998-99 survey. The study analyses how contraceptive morbidity is affected by various socio-economic, demographic and programme variables for the currently married women and their treatment seeking behavior. RCH-RHS survey gives data on self reported morbidity experienced of women and not diagnosed by the doctor.

Characteristics of the Study Area

According to the 2001 census, the population of India was 102.64 crore and covers an area of 316.62 million sq. km. Population density of India has increased from 77 persons per sq km in 1901 to 324 persons per sq km in 2001. Decadal growth rate of India declined from 23.9 percent in 1981-91 to 21.2 percent in 1991-2001. The percentage of urban population has increased during the decade 1991-2001 to 27.8 percent from 25.7 percent during 1981-91. Sex ratio of India is unfavorable to females as it decreased from 972 (females per thousand males) in 1901 to 933 (females per thousand males) in 2001 (India, Registrar General, 2004a). At the national level the crude birth rate has come down from 36.9 per thousand population in 1971 to 25.0 in 2002. Total marital fertility rate (TMFR) is the average number of children expected to be born to a woman during the entire span of her reproductive period if she remains married throughout. The TMFR for India is found to be 4.6 (India, Registrar General, 2004b).

Education, more precisely female education, has a direct bearing on the contraceptive prevalence rate and fertility. Total effective literacy rate of India is 64.8 percent while female literacy rate was 53.6 percent during 2001 census. (India, Registrar General, 2004a)

Table 1.1
Socio-Economic and Demographic Characteristics of India

	India
Demographic Characteristics	
Total Population, 2001[1]	1026443540
Percentage to total Population of India,2001[1]	100
Total Area (in sq. Km.), 2001[1]	3166285
Population Density (persons/sq. Km),2001[1]	324
Population Growth (in %), 1991-2001[1]	21.29
Percentage of Urban Population, 2001[1]	27.8
Sex Ratio, 2001[1]	933
Crude Birth Rate, 2002[2]	25
Total Marital Fertility Rate, 2002[2]	4.6
Life Expectancy at Birth, 1998-02[3]	62.5
Social Characteristics	
Total Effective Literacy Rate (in %), 2001[1]	64.8
Female Effective Literacy Rate (in %), 2001[1]	53.6
Health Characteristics	
Infant Mortality Rate, 2002[4]	60
Child Mortality Rate, 2002[2]	17.8
Maternal Mortality Ratio (per 1,00,000 live births), 1997[5]	407
Contraceptive Behavior	
Effective Couple Protection Rate, 2001[6]	46.2
Contraceptive Prevalence Rate, 2001[5]	48.2
Family Planning Acceptors by Method[6]	
Sterlisations	4735000
IUD Insertions	6046000
Condom Users	18202000
Oral Pill Users	7640000
Total no. of Acceptors, 2001[5]	36623000

Source: [1] India, Registrar General, 2004a
[2] India, Registrar General, 2004b
[3] India, Registrar General, 2005a
[4] India, Registrar General, 2005b
[5] IIPS and ORC MACRO, 2000
[6] India, Department of Family Welfare, 2003

The infant mortality rate, which is an important indicator of the health status of the country has registered significant decline from 129 per thousand live births in 1971 to 63 in 2002. However, the national average is very high compared to other developed countries. At the national level under five mortality rate was estimated at 17.8. (India, Registrar General, 2004b)

Maternal mortality ratio of India is high (407 deaths per one lakh live births), indicating the poor maternal and health care facilities available to the women (IIPS and ORC MACRO, 2000). Young age of marriage and child bearing, untrained birth attendants, unhygienic conditions at birth and lack of pre natal, antenatal and post natal care leads to high maternal mortality ratios in India.

Under the family planning programme sterlisation, Condoms, Pill and IUD are promoted. On the basis of use of these methods the effective couple protection rate of India was 46.2 percent. Contraceptive prevalence rate in India has improved from 22.8 percent during 1981 to 48.2 percent during 1998-99. (IIPS and ORC MACRO, 2000) This was mainly because during 1997-98 Government of India launched the RCH program which focused on improving the health status of women and children. It also aimed to fulfill the unmet need for family welfare services in the country, especially the poor and unserved areas by reducing the infant, child and maternal mortality and morbidity. Included in the RCH program was a new component for management of the Reproductive Tract Infection (RTI) and Sexually Transmitted Infection (STI). Within this RCH program came the issue of contraceptive morbidity. Contraceptive morbidity is an issue which has not received much attention in Indian family welfare scenario as the policy makers are still aiming to curtail the already exploded birth rate and not giving much attention to the quality of care provided to the client using the method of contraception.

During the year 2000-01 there were 36.62 million total family planning acceptors at national level (comprising 4.74 million Sterlisations, 6.05 million IUD insertions, 18.20 million condom users and 7.64 million Oral Pill users) as against 36.68 million acceptors in 1999-2000. A total of 4.74 million sterilisations were done in the country during 2000-2001 against 4.60 million in 1999-2000. Of it 97.7 percent tubectomies

were performed in 2000-2001 against 98.1 in 1999-2000. (India, Department of Family Welfare, 2003)

The RCH-RHS, 1998-99 has collected information on awareness and prevalence of contraceptive methods used by the couples, contraceptive morbidity and the treatment sought for the health problems. Similar information has also been collected by NFHS-1 and NFHS-2 surveys conducted during 1992-93 and 1998-99 respectively. RCH-RHS data shows that knowledge of the contraceptive methods is almost universal in India, with 99 percent of women aware of at least one modern method of family planning. However, the knowledge of all the modern methods of family planning (male and female sterlisation , IUD, pills and condoms) offered by the family planning programme a prerequisite for the informed choice of a method is quite low (58.0 percent). The states from the north-east lag behind the other parts of the country as far as knowledge of family planning methods are concerned (IIPS, 2001).

The survey gives the estimate of contraceptive prevalence rate in India as 49.0 percent, 43.0 percent due to modern methods and 6 percent due to traditional methods. Nine out of every 10 family planning users chose modern methods and every five in six users of modern methods selected a permanent method. In the use of modern methods the share of male methods is only 12.0 percent. The health workers informed 32.0 percent of the current users about the possible health problems/ side effects of the method they had adopted. One in every five users had some health problem/ side effects due to the use of a family planning method. In the case of 26.0 percent of the users the health worker made a follow-up visit after the adoption of the method. Almost all the users (94.0 percent) expressed satisfaction with the method they were using (IIPS, 2001).

1.3 ORGANISATION OF DISSERTATION

The dissertation has been divided into seven chapters. **Chapter-1** gives an introduction with the concepts about contraceptive morbidity. It also includes the objectives of the study and a description about study area. **Chapter-2** presents the review of existing literature and related findings in the earlier studies with the concepts about the type of contraceptive methods. **Chapter-3** discusses the

conceptual framework with tentative models showing the influences of socio-economic, demographic and programme factors on contraceptive morbidity and the treatment seeking behavior. It also includes hypothesis, data sources, methodology and variables. **Chapter-4** shows the trends in contraceptive prevalence rate, contraceptive morbidity by type of contraception method used and treatment sought for contraceptive morbidity in India. **Chapter-5** deals with socio-economic, demographic and programme differentials in women reporting about contraceptive morbidity and their treatment seeking behavior in India. **Chapter-6** includes regression analysis of the contraceptive morbidity and treatment seeking behavior with socio-economic, demographic and programme factors. **Chapter-7** presents the conclusions and summary and policy implications.

Chapter 2

CHAPTER 2
REVIEW OF LITERATURE

In the nineteenth century we have witnessed paramount progress in many areas of medicine and not least in the field of contraception, with landmarks such as the introduction of the first practical intrauterine device (IUD), the Grafenberg-ring in the twenties, the elaboration of the first oral contraceptive (OC) in the fifties and the development of laparoscopic tubal sterilisation in the sixties. In consequences of these major advances, the belief became widespread among the scientific community that it should be possible to overcome the problems of over population on our earth by means of these new tools.

This chapter briefly discusses the various types of contraceptive (traditional and modern) methods and then briefly reviews the findings of the studies on promotion of the contraceptive methods, contraceptive morbidity and the couple's awareness towards the health related problems /side effects. In case of India, the emphasis would be mainly on the Pill, IUD and sterilisation though other methods like Diaphragm, Condoms etc. would also be discussed.

2.1 TYPES OF CONTRACEPTIVE METHODS

Contraception is not a modern phenomenon. There are evidences that ancient Greeks, Egyptian and Indians had used *spermicides* and pessaries among others methods for this purpose. For many centuries, techniques such as '*coitus interrupts*' (withdrawal), douching with a variety of chemical mixtures, intra-vaginal sponge or cloth (to act as a mechanical barrier to the sperm), crocodile dung, leaves, grasses, herbs, opium, quinine pessaries, etc. have been used. In the traditional societies, there were traditional norms and cultural practices, such as prohibition of pre-marital sex, late marriage, post partum taboos-such as prohibition of sexual relations for a certain period after the birth of a child, or on certain days of the month (either religious days, or so called inauspicious days), and a long period of breast feeding (*Lactational Amenorrhea method*), which were commonly used as a measure for preventing conception and ensuring child spacing. Natural family planning methods, including

the Billings method and measuring body temperature to determine ovulation, based on avoiding sex on the fertile dates of the woman's menstrual cycle (rhythm method), have been used all over the world for fertility regulation before the availability/adoption of contraceptive technologies. These generally require cooperation and understanding between women and their male partners.

In the western countries, with the increasing popularity of modern methods of contraception people gradually forgo the traditional means of contraception and abortion. Development of scientific technologies of contraception and abortion lead to preference of modern methods over the traditional methods and practices, wherever modern methods were legal and available. In developing countries the process has been introduced and directed by family planning programmes of national governments and international agencies active in the field.

Most known contraceptive methods can be categorized as natural, permanent and spacing methods. Among natural methods come the Rhythm method/periodic abstinence, temperature, withdrawal. Sterlisation for women *(tubectomy)* and men *(vasectomy)* by various means and methods is considered as permanent method. Methods for spacing or delaying birth are also known as reversible methods because when discontinued a woman can conceive. Spacing methods may be of various types like barrier methods, also called mechanical devices (such as *condoms, diaphragms, jelly, foam tablets, spermicides* etc.) which prevent the meeting of sperm and egg; *Hormonal methods*—including the *Oral Pill, Injectables and Implants* which act in several ways on the body to frustrate either the meeting of sperm and egg, or implantation of the embryo; methods which do not allow implantation of the fertilized egg or the embryo, such as *Intrauterine Devices* (IUDs); *Immunological methods* such as the anti fertility vaccines which are under development.
These sub-categories are not totally mutually exclusive. Some of the methods, such as Hormonal IUDs and immunological methods work in more ways than one. Abortion is also used to terminate the unwanted pregnancy but is not a method to prevent conception.

Contraceptive methods offered by National Family Planning Programme in India include IUDs, oral contraceptives, condoms, vasectomy, and tubectomy. Government

emphasis as affected the acceptance of various birth control methods. In the mid 1960s, the focus has been on the increased use of IUDs. During the mid-1960s, people were encouraged to adopt sterlisation, and incentives were paid to motivators and acceptors, thus making sterilisation a popular contraceptive method. Contraceptive pills were introduced in 1974 but were not popular until recently. Currently, the focus of the program is shifting toward spacing methods.

2.1.1 NATURAL METHODS

Natural methods like periodic abstinence/rhythm method/standard day method, withdrawal are contraceptive methods with no side effects, though their failure rate is high.

2.1.1.1 The Standard Day Method is based on the knowledge that the menstrual cycle is made up of a fertile phase proceeded by and followed by infertile days. The concept behind the method is simple: Women with regular menstrual cycles lasting 26-32 days can prevent pregnancy by avoiding unprotected intercourse on days eight through 19. This 12 day fertile window takes into account the variability in the timing of ovulation and the viability of sperm in the women's reproductive tract. The failure rate of this method is less than 5 pregnancies per 100 women years during the first year of correct use. Given its ease of use and lack of side effects, the standard day's method may appeal to couples who are not currently using any method (Gribble, 2003).

2.1.1.2 Withdrawal Method

Coitus interrupts or withdrawal involves the withdrawal of penis from the vagina before ejaculation takes place. The main advantage of withdrawal is that, because it involves no mechanical devices or hormones, it is always available to couples. A major disadvantage of withdrawal is its relatively high failure (typical users experience a first year failure rate of 18 percent). Effectiveness is greatly dependent on user motivation at the time of intercourse. Failure is generally caused by leakage of pre-ejaculatory fluid, which contain millions of sperm, or the man's inability to withdraw. There are no adverse health effects associated with use of this method.

2.1.2 PERMANENT METHODS

2.1.2.1 Sterlisation

Sterlisation is an effective way to prevent pregnancy for both men and women who want no more children. Because these procedures are permanent, counseling is a critical aspect of providing these methods.

Female sterlisation

Female sterlisation or tubectomy is the world's most widely used contraceptive method. Various methods are used for female sterlisation like *abdominal approach/ abdominal pomeroy tubal ligation, vaginal approach, endoscopic methods (laparoscopy, culdoscopy and hysteroscopy* (Porter, and Hulka, 1974)). The choice of procedure depends upon her life situation and specific needs. In minilaparatomy, a small incision is made; the tubes are brought to the incision and occluded by tying them with a suture or a clip. This method has been largely replaced by laparoscopic sterlisation in which viewing instrument and a tubal occlusion instrument are inserted into the abdominal cavity through one or two minute incisions. The fallopian tubes are occluded either by electrical methods or by applying a clip or a ring. Post operative procedure is the same for both; patients are observed for several hours and then discharged. Bladder injury is common in minilaparatomy; in laparoscopy there is a risk of injuring major blood vessels. Bowel injury is reported in both.

For a woman who is pregnant and desires to carry her pregnancy to term, *postpartum pomeroy tubal ligation* may be performed, which is usually performed within 48 hours after delivery, when the fallopian tubes are near the surface of the abdominal wall. Some gynecologists perform laparoscopic sterlisation within several days following delivery, modifications of procedure are necessary for puerperal laparoscopic sterlisation. In particular, caution must be exercised not to damage the uterus during insertion of the insufflations needle or laparoscope, and the uterus must be manipulated carefully to reduce the possibility of perforation. Complications associated with puerperal laparoscopic are high. Laparoscopy is the method of choice for interval tubal sterlisation because of its comparatively low morbidity, high effectiveness, and patient convenience. After female sterlisation, a woman is mostly

free of concern about having additional children, from any further health risks related to pregnancy.

Male sterlisation

Vasectomy is the sterlisation procedure for men. In it the small tubes called *vas deferens* are blocked to prevent sperm from entering a man's semen. This is a very safe and simple procedure and is 99.9 percent effective in preventing pregnancies. A new no-scalpel technique does not use a surgical knife, involves less pain and bruising and has a shorter recovery time. Vasectomy requires a brief physical examination; local anesthesia is given and takes fifteen minutes or less time to block the *vas deferens.* Vasectomy is simpler, more effective and less costly than female sterlisation, though certain side effects like swelling, discoloration, or post operative discomfort may be experienced by men. A general rumor related with it is that it may cause impotency, change in sexual desire or change in sexual performance, though this has no scientific basis.

Both vasectomy and tubectomy do not protect a person against STIs, including HIV.

2.1.3 SPACING METHODS

Spacing methods are often called reversible methods as they do not permanently prevent a woman from becoming pregnant.

2.1.3.1 Barrier Methods

Barrier methods, also called mechanical devices, prevent the meeting of sperm and egg. Various barrier methods are condoms, diaphragms, jelly, foam tablets, spermicides (tablets, film, gel, and foam), cervical cap, vaginal sponges etc.

CONDOMS

Condoms are thin latex sheaths that fit over the erect penis and prevent semen from entering the vagina. Natural membrane condoms are available which protect against pregnancy but do not prevent HIV transmission. The effectiveness of the condoms depends on the experience of the user, the consistency of use and the motivation of the user at the time of intercourse. Failure rate of condom is 12 percent in the first year of use. By combining condom with spermicide higher effectiveness can be achieved. Condoms are free from side effects, although those sensitive to rubber may experience some adverse reaction.

Recent concern over the spread of HIV/AIDS and STDs has resulted in considerable emphasis on condom quality assurance and user education.

DIAPHRAGM

The Diaphragm was widely used during the 1950s in most developed countries, although its use decreased after the development of the pill and the IUD. Despite the diaphragm's availability in many developed countries, it is almost unobtainable in developing countries. As a result, the number of trained providers in these countries is extremely small, and the quantity of diaphragms being supplied is small.

The diaphragm is a dome shaped rubber cup with a flexible rim. It is inserted into the vagina in such a way that the posterior rim rests in the posterior fornix and the anterior rim fits snugly behind the pubic bone. The dome of the diaphragm covers the cervix, and spermicidal cream or jelly, placed in the dome before the insertion, is held in contact with the surface of the cervix. The diaphragm can be inserted, if desired, up to six hours before intercourse. Due to the diaphragm's limited availability data about its acceptability and use-effectiveness in the developing world is extremely sparse.

Harvey, Bird and Branch (2003) have advocated the advantages of old fashioned diaphragm over other methods in prevention of unintended pregnancy and sexually transmitted diseases (STDs), including HIV. They dissuaded the skepticism about the diaphragm and argued that women need a method which is female controlled because male condom which when consistently and correctly used is the most effective method for protecting against STDs. However, some men are unwilling to use

condoms, and some women may be unable to negotiate use because of gender-based power imbalances or other cultural factors.

As a contraceptive, the diaphragm is safe, has limited side effects, does not interfere with natural hormones and only has to be used during sex. The diaphragm has advantages over other female controlled barrier methods. For example, although a women inserts the female condom, she cannot use it without her sexual partner's knowledge or cooperation; in contrast, a woman can insert the diaphragm up to six hours before intercourse, and she often uses it without her partner's knowledge. In addition, because the diaphragm is worn completely inside the vagina, it avoids the obtrusiveness of the female condom and is less likely to interfere with intimacy and sexual pleasure. Finally, the diaphragm can be reused for up to three years.

Major drawback is that it requires a clinician or a trained person for fitting. Some women may have difficulty in removing it. Some side effects related with its use are—allergic reaction to latex spermicide used, foul smelling profuse vaginal discharge if diaphragm is placed in place for too long, monilial vaginitis can occur if diaphragm is not well cleaned and dried.

SPERMICIDAL FILM AND FOAMIMG TABLETS

A spermicidal contraceptive consists of a sperm killing agent and a base that distributes the agent over the cervix and physically blocks the semen from the contact with the cervix. Most commonly used spermicidal agents include nonoxinol, octaoxinol, menfegol and benzalkonium chloride. The spermicidal agents are delivered in the form of foams, creams, jellies, melting suppositories, foaming tablets, soluble film, lubricated condoms and sponges. Laboratory studies indicate that nonoxynol-9, the most frequently used spermicidal agent, inactivates many sexually transmitted pathogens, including *Nesseria gonorrhea, Chlamydia trachomatis,* herpes simple virus, *Treponema palladium, Candida albicans* and HIV. Vaginal spermicides play an increasingly important role in many family planning programmes, since they provide both contraceptive protection and disease prevention. A contraceptive method's acceptability is likely to contribute to the consistency of its use; consistent use, in turn, would be the most important factor in minimizing the contraceptive failure rates associated with spermicide (Steiner, *et al.,* 1995).

Advantages of spermicidal film are it could be used without their partner's knowledge, easy to use, comfortable and lacked side effects. The characteristics most disliked about the foaming tablets are it is messy or too wet. The most frequent complaint about the contraceptive film was that it stuck to their fingers during insertion. Other problems associated with contraceptive film were that they were hard to fold, scratched during insertion.

2.1.3.2 HORMONAL METHODS

Hormonal methods include the Oral Pill, Injectables and Implants.

PILL (ORAL CONTRACEPTION)

Oral contraceptives were first approved for general use in the United States in 1959. Just 15 years later, it was estimated that about 50 million women in developed and developing countries around the world were taking them. At that time, more than a quarter of all women aged 15-44 years were regular users in Australia, Canada, West Germany, the Netherlands and New Zealand, while in the people's Republic of China, between 13 and 20 million are believed to be on pill.

Although there are several different types of oral contraceptive, by far the most important is the combined, in which both an oestrogen and a progestogen are administered daily for three weeks out of every four.

Vessey and Doll (1976) have evaluated the hazards and benefits of oral contraceptives in comparison with other methods. Atkinson *et al.,* (1974) have reviewed the side effects, major complications and contraindications of oral contraceptives. The most commonly reported side effects are nausea, vomiting, abdominal cramps, weight changes, breast tenderness, irregular menstruation, headaches, nervousness, depression, loss of libido, and skin changes; although, the symptoms disappear immediately after the discontinuation of oral contraceptives. The adverse effects of oral contraceptives are deep vein thrombosis, pulmonary embolism, and certain types of acute cerebrovascular disease (Belsey, Russell and Kinnear, (1979)), acute myocardial infraction, although it seems that they interact in a complex way with other 'coronary risk factors' such as hyperlipidaemia and cigarette smoking, modest

elevation in blood pressure, cervical erosion, cholelithiasis an important non-cardiovascular adverse effect. Despite an extensive literature, prior use of oral contraceptives has not been firmly incriminated as a cause of prolonged secondary amenorrhea. A number of reports have suggested that oral contraceptives taken just before or inadvertently during, pregnancy might increase the risk of malformation of the fetus. Even triploidy is possible.

Most published reports of the possible relation between oral contraceptives and cancer of the breast are reassuring that women with family history of breast cancer have added risk with pill use (Johnson, 1989; Hollander, 2001).

By far the most important beneficial effect of 'the pill' is its remarkable efficacy which, coupled with a high degree of acceptability, has given many women a new freedom from anxiety about risk of unplanned pregnancy. Among the most benefits of pill are included its protection against endometrial cancer, ovarian cancer but may be associated with the increased risk of cervical cancer. Pill use may have minimal net effect on reproductive cancer risk. They tend to suppress some menstrual disorders, such as menorrhagia, dysmenorrhea, and peptic ulceration (Peritz. *et al.,* 1977; Hulka, *et al.,*1982; Coker, Harlap and Fortney, 1993 and Edwards, 1994) .

The advent of oral contraceptives was a major advance in the field of contraception. Together with the IUD, oral contraceptives represent the most efficacious methods of modern contraception. As experience with and acceptance of oral contraceptives in family planning programs have increased, a number of recommendations for paramedical prescription and more recently, for no clinical distribution have appeared.

Sear *et al.,* (1974), have in their study conducted on patients from a large urban United States family planning program stated the factors associated with short-term Oral contraceptive discontinuation. Results showed that women who started on pill discontinued during or immediately after first cycle. The majority of these women cited side effects (bleeding) as the reason for discontinuing the method.

Advisory committees to the United States Food and Drug Administration (FDA) have recommended the removal of all age limits on the use of oral contraceptives by healthy, nonsmoking women. FDA has further stated that women older than 35 who smoke and for women who have medical contraindications, such as hypertension, diabetes and cardiovascular diseases should not use oral contraceptives (Kaeser, 1989).

INJECTABLES

The injectable contraceptive method depot medroxyprogesterone acetate (DMPA), used worldwide for more than 20 years, was approved for use in the United States in late 1992 (Klitsch, 1993). The Hormonal injection provides contraceptive protection for three months, drastically reducing the compliance difficulties encountered with use of oral contraceptives and coital-dependent barrier methods. It is thus a particularly useful method for adolescent women, who are typically inconsistent users of coital dependent methods or those requiring daily use (Balassone, 1989). Indeed, one study found that 30 percent of injectable users were younger than 21, and that more than three-quarters were unmarried (Sangi-Haghpeykar, *et al.*, 1995). Despite its widespread use, there are few published data on DMPA continuation rates.

Jones, *et al.*, (1980) in there study on one year continuation rates among a cohort of women who began using the injectable contraceptive between 1993 and 1995 among American women found that the overall continuation rates for DMPA in the American population was very low. Fifty-seven percent of users returned for their second injection, and only 23 percent of those eligible for a full year of contraceptive protection (four injections) obtained all four. In comparison, one year continuation rates for other forms of contraception vary from 70-90 percent for oral contraceptives, 74-82 percent for the IUD, and 87-92 percent for the Implant. American women of Texas was unwilling to use injectable hormonal contraception because it caused unpleasant side effects and abnormal menstrual patterns. Despite the method's effectiveness and convenience, most of those who discontinued use did so because of such side effects such as weight gain and headaches or menstrual changes as amenorrhea and spotting (Hollander, 1996).

The major problem with the Hormone Implant in its present form is the unpredictable bleeding. As the bleeding is light, the blood loss per se causes no problems, but the long periods of bleeding and spotting makes acceptance low in populations used to regular menstrual bleeding.

2.1.3.3 INTRAUTERINE DEVICE

The intrauterine contraceptive devices (IUD, IUCD), broadly comprises any material placed in the uterine cavity in order to prevent pregnancy.

Apparently known to Hippocrates, the IUD in subsequent centuries endured several changes in esteem. Revived early in 19th century by Grafenberg, who reported some 200 cases with a failure rate of 1.6 percent, the IUD was discredited by many, perhaps mainly because of the concern about pelvic inflammatory disease and sterility resulting from use of the device. The IUD entered the modern period of its use when Oppenheimer (1959) and Ishihama (1959) and his colleagues reported large series of patients with good results.

Intrauterine contraceptive devices (IUDs) are a very effective and commonly used method of delaying or spacing births in most parts of the world since the end of the 1960s. They are especially popular among women seeking long-term protection who do not want to remember to take contraceptives daily (as in the case of the pill), or to use a barrier method every time they have intercourse. IUDs also offer a method which is invisible and can be used by women without the knowledge of other members of the family as long as they have no medical problems with it (although sometimes the thread attached to it for removal can be felt during intercourse). Risks associated with IUDs are perforation of the uterus, infection of various organs in the pelvic area and ectopic pregnancy. Other problems include pain at the time of insertion, expulsion, longer duration of menstrual bleeding, and, if the method fails, the possibility of spontaneous abortion with or without infection.

Daniel (1975) and Hutchings *et al.*, (1985) have reviewed the acceptance of IUD after 20 years. Cervicouterine pessaries with intravaginal stems of wood, bone and glass were introduced in the early 1900s. Although their stated purpose was to support the uterus, to prevent delayed or irregular menses, or to cure dysmenorrhea and infertility,

For women who desire long term contraception, reminder postcards or phone calls have been found to be an effective strategy to enhance continuation. However, this approach might prove impractical among younger women, who may not want parents or partners to know of their contraceptive practices. Improving access to clinics that provide DMPA might also improve continuation rates, especially for younger women.

IMPLANT

Subdermal implant system sold under the brand name Norplant, provides a contraceptive protection up to five years. It consists of six silicone rubber capsules (each containing 36 mg of levonogestrel) that are inserted under the skin of the women's arm. The capsules release an average of 50μg of Levonogestrel per day during the first year of use.

Johansson (1976) in his paper had discussed the advantages and disadvantages of hormonal implant. The insertion is simple, using a specially designed needle. No patient failures can occur, and failures due to errors by the inserter are unlikely as the whole procedure is under visual control

Meirik, Farley and Sivin (2001) in a cohort study of women in eight developing countries confirmed the earlier findings that the Levenogestrel-releasing Implant is highly effective and generally safe, but is associated with higher risks of some health problems than are other, nonsteroidal contraceptive methods. Compared with women who relied on sterlisation or the IUD, women who used the Implant were more likely to have gallbladder disease or high blood pressure. Implant users had an elevated risk for several other health problems – respiratory diseases, menstrual disorders, unspecified disorders of the breast and central nervous system. Implant users also experienced significantly higher rates of certain less serious symptoms, the most common of which were dizziness, malaise and fatigue, weight loss, weight gain and headache. The risk of inflammatory disease of the genital tract, however, was significantly lower in Implant users than in women relying on either of the other two methods. Implant is not associated with any material risk of major morbidity compared with IUDs and female sterilisation (Rosenberg, 2002).

these devices were also used to prevent conception and sometimes as abortifacients. A description of Richard Richter's silk worm gut ring in a 1909 German medical publication provided the first published evidence of an intrauterine device designed and used especially for contraception. An enthusiastic report of the effectiveness of a silver intrauterine ring, presented by Ernst Grafenberg at the 1929 International Sexual Reform Congress in London, gave the IUD its first scientific identity, exposure and credibility. In 1934, Tenrei Ota of Japan introduced a modified version of the Graffenberg Ring. The Ota ring, in its many subsequent modifications, replaced the silver wire of the Graffenberg Ring with gold plated silver, gold plastic. Considered the forerunner of modern IUDs, the Ota Ring is still in use today. The Margulies Spiral was introduced in 1960. This device was the first to be made entirely from plastic (polyethylene) and the first to have a linear shape. A small amount Barium Sulfate was added to the plastic to make the Margulies Spiral radiopaque—a practice that has since become standard for plastic IUDs.

In the 1970s, a second generation of IUDs emerged. These were safer and more effective than the earlier models, and they contained slowly released bioactive copper or progesterone. The Lippes Loop was first available in 1964, until recently was the only remaining inert device marketed in the United States. The Cu-7 was most widely used copper IUD in the United Kingdom and United States. Like the Cu-7, the TCu 200 had copper wire wrapped around a plastic vertical stem, but it was T-shaped to increase retention in the uterus. Clinical studies have shown that the device would be effective up to four years. The TCu 200 was used in North America, South America, Europe, Asia, and Africa. The progestasert, available since 1976, also had T configuration, but it was distinguished by the daily release of 65mcg of progesterone (the natural hormone) through the permeable wall of its vertical stem. A fifth device, the TCu 380A, was approved for use in the United States in November 1984. The device had a copper collar on each horizontal arm, as well as copper wire wound on the vertical stem. The TCu 380A had been approved for four years of continuous use.

In developed countries, IUDs are the second most effective method of reversible contraception in use, after oral contraceptives. Side effects and complications related with the use of IUD are bleeding and heavy menstrual blood loss, pain during insertion and for a few days thereafter, expulsion of the device, perforation of the

uterus, ectopic pregnancy, PID Pelvic Inflammatory Disease which accounts for 90 percent of hospitalization. Studies suggest an association between the Dalkon Shield and high rates of PID, infertility, septic spontaneous abortion.

Mortality and morbidity associated with intrauterine devices (IUDs) are low and can probably be reduced to a minimum with a greater awareness of the specific risks involved in IUD use. In assessing the safety of IUDs, Guillebaud (1979) had focused on four main areas of concern in his paper. They are consequences of contraceptive failure, pelvic infection, problems associated with insertion, and anemia. The actual incidence of pelvic inflammatory disease (PID) among IUD users is apparently quite low.

Large scale studies have demonstrated that IUDs were second only to oral contraceptive in effectiveness in preventing pregnancies. Because of fear that manipulation of the IUD in the pregnant uterus would cause excess spontaneous fetal loss, several investigators had suggested that if a woman became pregnant with an IUD in place and wished to continue the pregnancy, it was safer to leave the IUD in the uterus during the pregnancy than to attempt removal. In June 1970, the first published report challenging this view appeared in medical literature. It was found that removal of a tailed device improved the chances for a live birth. Five other studies had appeared in medical journals that supported the removal of the IUD in case of pregnancy (Cates, and Grimes, *et al.*, 1977). Widespread publicity in the mass media about the dangers of leaving an IUD in place in a pregnant uterus was apparently more effective than traditional scientific publication and drug package inserts in getting doctors to remove devices from pregnant patients. This suggests that such publicity could be effective in improving clinical practice and the public health in other instances, such as getting doctors to prescribe and women to request birth control pills with lower doses of estrogen, and persuading women to obtain early rather than the riskier midtrimester abortions.

2.2 CONTRACEPTIVE PROVISION AND USE IN INDIA

In the above section we have discussed the various methods of contraception available in developed and developing countries and the side effects caused by them.

In India family planning methods and services are provided through a network of public health system. The basic administrative units for delivering family planning services in rural areas are the PHCs. Following a nationwide set pattern, personnel and facilities were supposed to be deployed uniformly at the PHC level within each state, although there is some variation between states (Srinivasan, *et al.*, 1991).

Indian couples have vague and cursory knowledge of the methods of contraception, except for sterlisation. However, Indian couples during 1970s mainly relied on sterlisation as a method of modern contraception. With time people's awareness about other methods increased though their benefits still remained misunderstood. This was because the health workers insisted on propagating sterlisation only. Laparoscopic sterlisation were often done in sub-optimal conditions either in institutional or mobile settings. In rural areas, camps were organized in temporary locations such as school buildings or some other public facility on special occasions. A mobile team of medical personnel came to the area where local authorities such as high government officials, members of village councils, teachers, or other 'motivators' had already enlisted the 'acceptors'. Often these 'motivators' themselves worked under pressures of incentives and disincentives to achieve certain 'targets' and 'quotas' set at the provincial or district level. Peer pressure often played an important role.

In these camps a single surgeon performed 300-500 laparoscopies in 10 hours per day, (which works out to one operation every two minutes). Practically, with the minimal care that is necessary for such an operation, only a maximum of 50 in a day would be possible. There were reports from Kumbakonam that 1,225 women were operated upon in one day. This showed the callous attitude of the health personnel. Obviously, follow-up care was not a part of such mass programmes which provided the facility of sterlisation and move on. Often these areas did not have hospitals or clinics where women would go for help for health problems. The situation in government hospitals and family welfare clinics was no better.

Most mass sterlisation camps were doing far too many sterilisations per day with too few doctors and an inadequate supply of instruments. Ramanathan *et al.,* (1995) noted this in their observations at sub-district level hospital in Kerala. Due to a high demand for these services, 48 sterilizations were performed by one surgical team in just over two hours, in clear violation of the regulations. Counseling of women before the operation was inadequate, the surgeon never changed his gloves, the linen on the operating tables was never changed and the facilities in the buildings were grossly insufficient to support post-operation requirements.

While some women went for sterlisation on their own, others were prevented from doing so by their husbands and extended family members. Rural and urban working class women were often pressured or coerced into undergoing the operation and offered monetary or other incentives for the same. Coercion was not restricted to those who practiced contraception. Pressure to achieve prescribed family planning targets by recruiting family planning 'acceptors' and to fulfill pre-established quotas was also put on the 'motivators'.

After 1980s IUD, pills and condoms were also promoted in family planning programmes and so they were also offered, but sterlisation remained the natural choice of the majority.

Menon (1970) in India reviewed the experience of Lippes loop. In all, 4864 patients were fitted with an IUD, more than 90 percent with a Lippes loop. The incidence of heavy bleeding was approximately 18 percent, and two thirds of these patients required removal of the device. Patients with severe bleeding four or more months after the insertion had no history of abnormal menstruation or severe bleeding and all had healthy cervices as gauged by physical examination. Within six to 36 months of insertion, chronic cervicitis developed in 64 patients, basal cell hyperplasia in 5, and carcinoma in situ in 2.

In India, birth control pills indigenously produced are sold under the brand name *'Mala D'*. This is a cheap brand often provided free at government family planning clinics and at subsidized rates through the contraceptive social marketing programme as there is a realization that people do not appreciate something which is given

absolutely free. In the same category is the pill with the brand name "*Ecroz*" (literally meaning 'one a day') which is being sold through the Marie Stopes' family planning clinics (IPPF-Funded).

In India, the pill has not gained wide acceptance compared to other methods. Since the mid-1980s, there were attempts to popularize it through contraceptive social marketing programmes (CSM) and community based distribution (CBD), through local *paan sellers* (tobacconists) and fair price food shops known as ration shops to bring the product to the doorstep. The pill can be obtained without a doctor's prescription and with no check-up for contraindications.

Bang *et al.*, (1989) reveal a higher prevalence of contraceptive morbidity in a study done in two villages of Gadchiroli district of Maharastra. The study shows that the prevalence of gynecological or sexual diseases among the women was 92 percent and the average number of such diseases per women (3.6) was remarkably high. Infections constituted 50 percent of the burden; the most common ones were vaginitis, cervicitis, and pelvic inflammatory disease. Menstrual disorders formed another big group and infection of the genital tract could be the cause. There was some truth in the women's perception that contraception causes gynecological troubles as the results showed a statistically significant association between certain gynecological diseases and past or present contraception used by women.

Sowmini and Sarma (2004) did a study to analyse the association between IUD use and female sterilisation with reproductive morbidity among women in Kerala. Three sub-centers belonging to a PHC situated at a distance of 20 kms from the state capital, Thiruvanthapuram were chosen for the study. The study showed that sterilisation acceptors had a four-time and IUD users a nine-time higher chance of experiencing menstrual problems compared to non-users of contraceptives. IUD users were also at a four-time higher risk for RTI compared to non-users. Thus, a woman who had used an IUD and subsequently undergone sterilisation is more likely to experience both RTIs and menstrual problems. The higher chances of menstrual problems reported by women in relation to sterilisation can be explained as post-ligation syndrome, where the patient will have menorrhagia, chronic pelvic pain and cystic changes in the

ovaries. The important aspects of quality of care, like screening before provision of methods, training for health professionals for improved provision of contraceptives and regular follow up for all methods were needed to reduce the services related morbidity. For the clients, information regarding the early detection of morbidity symptoms would reduce the burden of delayed care seeking and the concomitant increase in morbidity burden. Findings showed that there was also a need to improve existing methods of contraception, to make available newer methods with lesser side effects and lower cost to the women.

Bhatia and Cleland (1995) in their article analyse gynecological problems among 3600 recent mothers in Karnataka state. Approximately one-third of all women reported at least one current symptom, the most common were a feeling of weakness and tiredness (suggestive of anemia), menstrual disorders, white or colored vaginal discharge (suggestive of lower reproductive tract infection) and lower abdominal pain and discharge with fever (suggestive of acute pelvic inflammatory disease). Obstetric morbidity associated with the last child in a private institution was significantly less likely to report symptoms than were those who delivered at home or in a government hospital. Nonusers or users of reversible contraceptive methods were also less likely to report symptoms of morbid conditions than were sterilised women.

Ram, Rangaiyan and Jayachandran (1997) had done their analysis to find the differentials in the self reported illness related to contraceptive use by perceived quality of care, type of service providers, place of service and the age of user. They found that acceptance and sustained use of family planning especially of modern spacing methods have generally been low in developing countries particularly in India. The use rate of modern spacing methods was only 6 percent among the eligible couples in India in 1992. Many social, religious and economic factors played a significant role in the decision to begin with contraceptive use. Studies of the use effectiveness have repeatedly shown that the most common reason for discontinuing use or low use of the method was the associated side effects. Contraceptive users often attribute any reproductive tract infection or any common health problems to the method. The incidence of infection of RTI due to contraceptive use in India has been found to be too high, owing to the combination of biomedical, behavioral and societal

factors. This has been proved by the analysis of NFHS-1 data, indicating a significant proportion of women suffering from illness related their health problems to contraceptive use.

Saavala (1999) in 14 months of participant observation in three rural villages, of Andhra Pradesh found that female sterilisation by means of tubal ligation was regarded by both men and women in south India as an acceptable or even preferred way to avoid pregnancy.

Basu (1984) in a study done in six villages in India from five states found that there was overall low rates of contraceptive use in India at least partially due to low levels of knowledge about different methods of birth control, especially the modern reversible methods. Reversible contraceptives were not preferred over sterilisation because of the possible side effects which women said they could not afford. Another reason was that it was not under family planning program.

Rajaretnam and Deshpande (1994) in their study of the two districts in south India found the prevalence of all modern methods of contraception to be 41 percent but that of reversible methods 2 percent only. Supply or program factors were largely responsible for the low use of the reversible methods, especially in the rural areas. Regarding the perception of the program personnel it was found that a few medical officers raised doubts as to why couples should be asked to use reversible methods when they were readily accepting sterlisation. Most of these officers considered side effects of the IUD and the Pill and storage and disposal problems of the condoms as the major practical difficulties encountered by the users of reversible methods people were reluctant to use these methods as they were inconvenient to use. High levels of contraceptive morbidity were reported among the users of reversible methods.

Bansod (2002) found that reversible methods were unpopular because they were not well known to the people and were often misunderstood because of high failure rates, undesirable side effects and were inconvenient to use. It was found that both program and community factors were responsible for low use of reversible methods. The attitude of the health care workers and the hygienic conditions for the treatment were a prerequisite for the method's acceptance. Apart from socio-economic differentials,

the public health care system should focus on hygienic practices of IUD insertion, which may reduce the risk of morbidity. Women who were assisted by public health services for IUD insertion were more likely to report morbidity than the ones receiving it from private medical services.

Studies reveal that though health movements in India have helped create more awareness about issues related to the government's population control policies and the role of family planning programme within these policies, the impact of various contraceptives choice given to women and their side effects are still not studied in great detail (as is seen in the literature survey). In India states are still trying to promote contraception to curtail the booming birth rate without considering how the methods if not administered properly would affect the health of the women. In India, contraceptive morbidity is an issue which needs to be explored in great detail.

Chapter 3

Conceptual Framework and Methodology

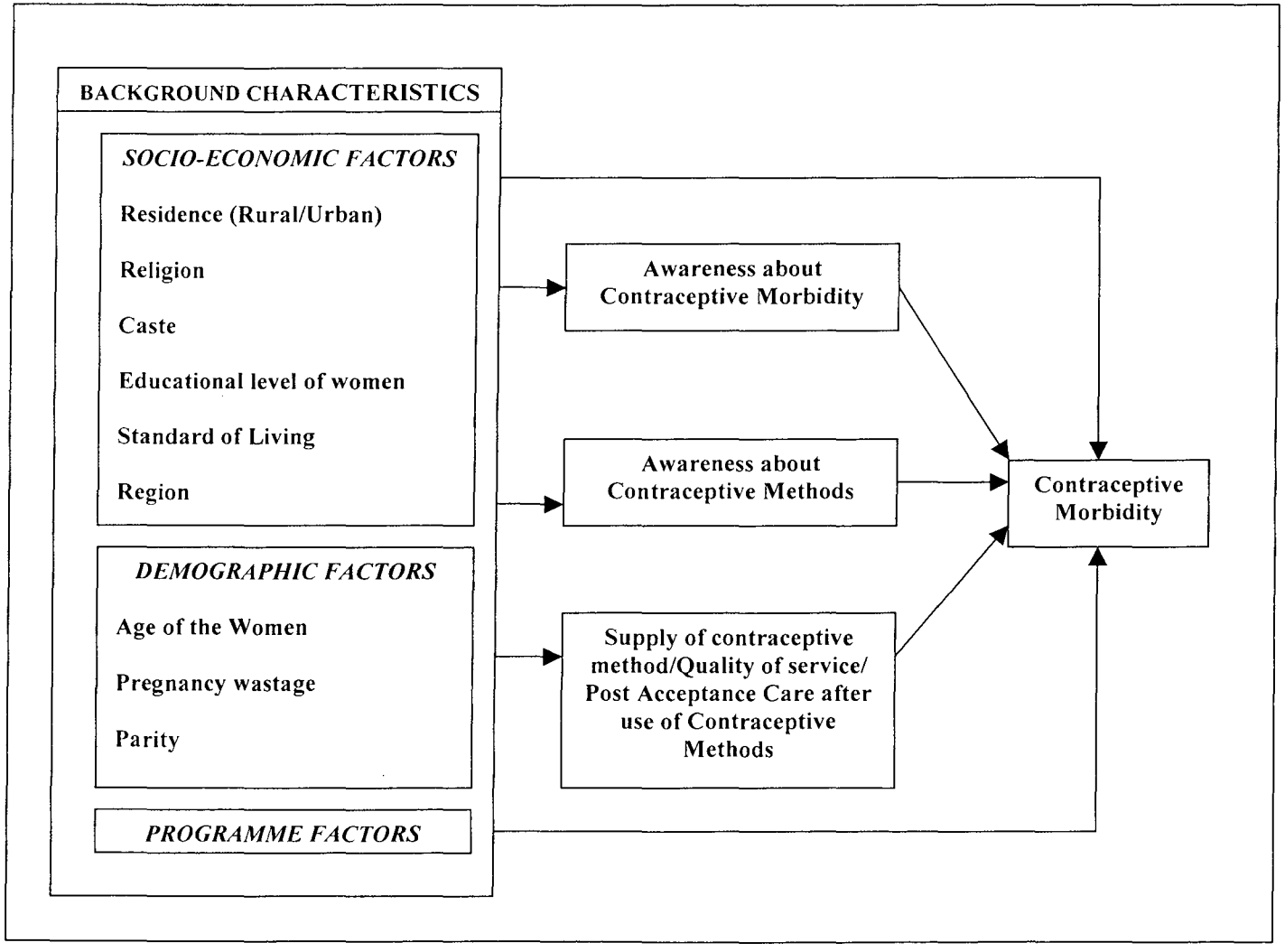
CHAPTER 3
CONCEPTUAL FRAMEWORK AND METHODOLOGY

3.1 CONCEPTUAL FRAMEWORK

This chapter mainly deals with the conceptual framework, data source and the methodology of the analysis. There are many studies which have focused on how the background characteristics and contextual factors influence the contraceptive morbidity among women in reproductive age group 15-44 years and their treatment seeking behavior (consulting doctor/nurse or private/public facilities). It has been noticed that if socio-economic development occurred in the society then there would be less women suffering from health problems related to use of contraceptives. At the individual level women's own characteristics as well as household characteristics may affect the problems related to use of contraception. There are regional variations found in the prevalence of contraceptive morbidity and treatment seeking behavior. States in southern India have easy access and better health care facilities than the north Indian and north eastern states. National level health indicators and human development index of these states are poor. Maternal morbidity is highest in Uttar Pradesh. Women in north Indian states have poor socio-economic status which affects their autonomy, mobility and decision making behavior. Their health infrastructure is poor especially in the rural areas. Poor performance of the north eastern states is due to the accessibility factor. The terrain is hilly making it difficult for the health personnel to visit a village.

Some other factors may affect the prevalence of contraceptive morbidity and the treatment seeking behavior like, awareness about the family planning methods, method availability, service quality, and ability to pay, whether provider gave any information on the health related problems/side effects with the use of the contraceptive method, whether post acceptance care was provided. Even though public sector is the primary source of family planning services in India, there are serious problems with government health, family planning infrastructure and services. Reputation of public sector facilities is poor, health workers do not have good rapport with the client and poor performance of health

Figure 3.1 A Conceptual Framework for analysing Prevalence of Contraceptive Morbidity



personnel are also responsible for the clients to approach private health facilities which are perceived better than government facilities. The present study considers the proposed analytical framework for contraceptive morbidity (figure 3.1) and treatment seeking behavior (figure 3.2).

3.1.1 SOCIO-ECONOMIC FACTORS

Among these are included the characteristics like place of residence, religion, caste, educational level of woman and her standard of living. Some of these factors may also influence intermediate variables like awareness about the family planning methods, treatment given (quality of care received at government health centers), follow up service given after the introduction of contraceptive method, awareness about the side effects. These variables are a part of the family planning programme offered to the population.

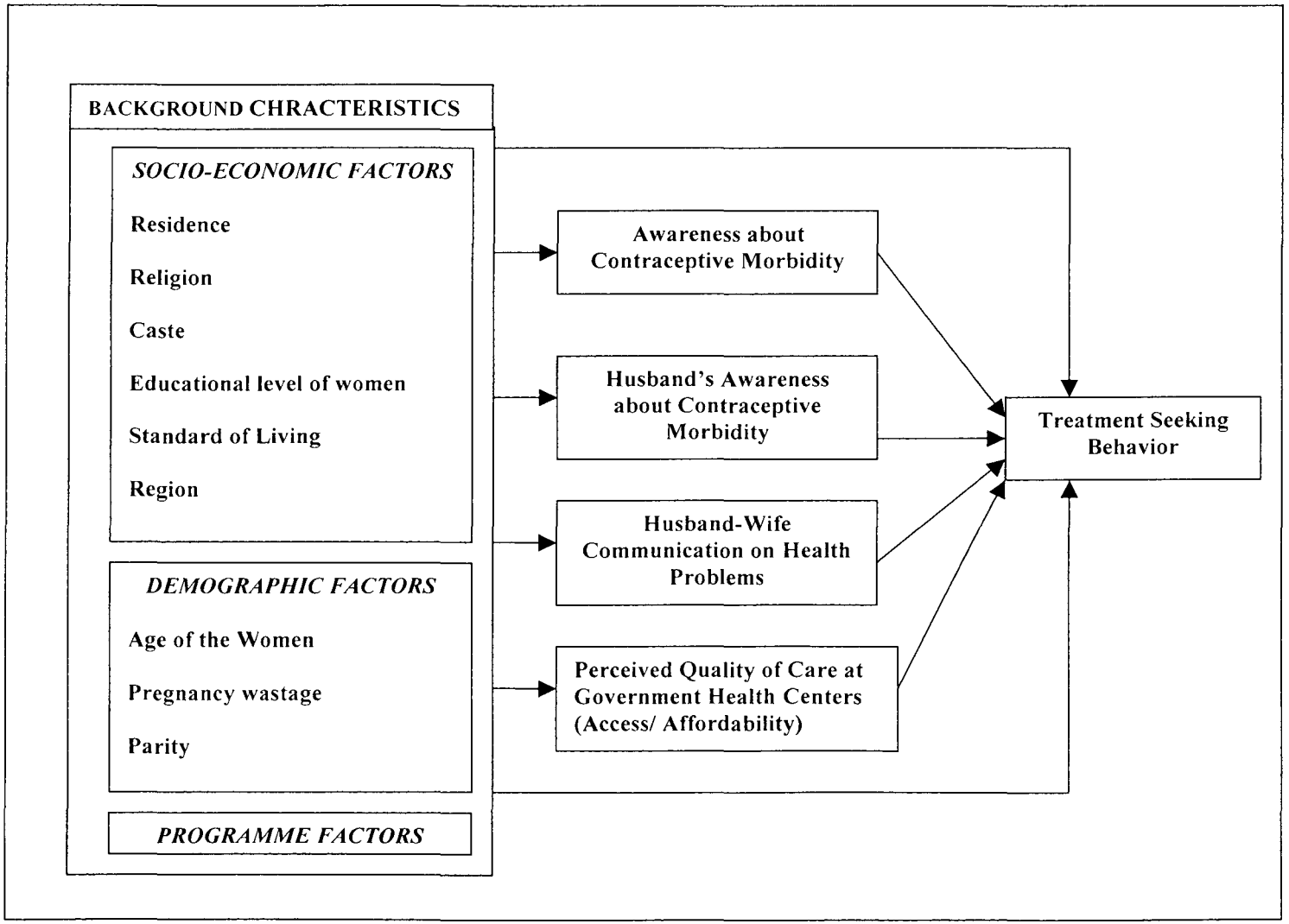
1. Place of Residence

Place of residence may be rural/urban. Thus, this location affects the women's accessibility, environment, availability of resources, quality of care received etc. Residence affects one's decision making process of which method to adopt and the type of choices which are made available to her. Environment here implies the level of exposure both the spouses have to the methods available, whether they can discuss it with each other. Studies have shown that women residing in rural areas may not have adequate access to the quality of contraceptive services, apart from the fact that not all types may be made available to them. This may lead to higher risk of contraceptive morbidity.

2. Religion

Like other social variables, religion is also an important factor which influences the women's sexual behavior. Her sexuality is checked through social institutions of marriage, family, kinship, religion. India has a diverse set of religious practices to be followed. Each religion has its own customs or ceremonies to mark puberty attainment in women, marriage, child bearing etc.

Figure 3.2 A Conceptual Framework for Treatment Seeking Behavior for Contraceptive Morbidity



Thus, her demographic behavior as well as health abortion, which prevent natural life (fetus) from coming to full term. Although abortion is not one of the contraceptive method being offered to women; it is, still the most prevalent method in case of unwanted pregnancies.

3. Caste

Caste is indigenous to India. It affects one's social status in society and thus affects other factors of residence, socio-economic status, educational level, quality of care received etc. In the socio-economic hierarchy, the Scheduled Castes, Scheduled Tribes are the most unprivileged backward sections of the society. Majority of the Scheduled Caste and Scheduled Tribe population lives in rural areas that are backward or in hilly areas. People of these communities often live in poverty and are engaged in arduous tasks. The social and economic disadvantages imposed upon them are reflected in the health status of their women. They are uneducated, often not aware about what contraception is and how it could reduce their misery of bearing a child every alternate year. The attitude of the health workers towards them and the services provided to them are highly objectionable. Most of these women discontinue with the method offered because of the ill treatment received, long hours to wait at the health centre, apart from limited choice available to them. The unhygienic conditions under which they live further aggravate the morbidity condition. It is here that the programme policy could bring a change in the health status of these deprived sections.

4. Educational Level of Women

Literacy level of women in India is only 54.16 percent, and worse still in north Indian states of Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan and Orissa. Education of woman is an important factor which directly affects her decision making in choosing a contraceptive method which suits her best. It reflects her status, autonomy in various spheres of life and more importantly in her deciding to restrict her reproductive life. Men were always concerned about their comfort and rarely choose to think of the miseries women may face during childbearing months. Most women in India thus choose methods which their husband may not come to know, or they are not caught unprotected when a man decides. Educated women can often discuss the issue which was often left not to be talked about more comfortably with their husbands than other wise. Also, the educational level of men may affect the method mix

adopted by the spouse to restrict their reproductive lives, though not many studies have found any significant relationship between contraceptive choice and related morbidity with men's educational level. It is now after the 1994 Cairo conference that there is increased focus of involving men in the family planning programme. Until now it was all about woman's health, her prerogative of reducing the fertility level, restricting the family size etc.

5. Household Standard of Living

Most importantly it is the standard of living or the family's income level which directly affects the reproductive behavior as well as the health status of the women. If the couple is struggling to upkeep their family with ever increasing consumerism in the society, they might ignore the health aspect. People with poor standards of living often are less likely to avail any health care facilities unless the situation is so grave that it starts affecting their income levels. Awareness about their health, about the contraceptive choice is lacking. Men are often careless of the contraception to be used which leaves women alone to prevent herself from the trauma of childbearing every alternate year. Women with poor standards of living, who are illiterate and living in rural areas, find it difficult to discuss the issues of contraception with their spouse.

6. Region

There are regional variations found in the prevalence of contraceptive morbidity and treatment seeking behavior. One can see a clear divide in the birth and death rate achievements of the north and south Indian states. Some of the Indian states like Kerala and Andhra Pradesh have attained a replacement level of 2.1, and are in their last stages of demographic transition. On the contrast are the north Indian states of Uttar Pradesh, Bihar, Madhya Pradesh, and Orissa which are one of the last rankers when it comes to health indicators like human development index. Maternal morbidity is highest in Uttar Pradesh. Orissa, Bihar is the poorest states with highest infant mortality rate. Overall state literacy is low and female literacy is lowest in Bihar. Health infrastructure facilities are poor here. In the rural areas most of the government work is shown only on papers whereas the true picture is quite pathetic. The staff for proper functioning of the PHCs is always inadequate. Some of the PHCs do not even have doctors, which force the people to approach the city government

hospitals. Distance or accessibility and financial accessibility are an important determinant in couple's choice of the contraceptive method. Supply is inadequate in these states and post acceptance care is negligent. Also, women in north Indian states have poor socio-economic status which affects their autonomy, mobility and decision making behavior. On the other hand, poor performance of the north eastern states is due to the accessibility factor. Their terrain is hilly and the health personnel often do not visit a village for months. Understaffing and unavailability of the infrastructural facilities are important factors affecting contraceptive morbidity in these states.

3.1.2 DEMOGRAPHIC FACTORS

1. Age of the Woman

Studies show that women in different age cohorts adopt different contraceptive methods depending on the type which best suits them. Women of earlier age groups often adopt spacing methods while those of later age groups who do not want any more children take to sterlisation. The cause of morbidity due to use of contraceptive may often be ignored by younger women because they cannot recognize the symptoms but studies show that the prevalence of morbidity varies in each age group with the type of contraceptive used. In India, IUD related problems are universally common among all age groups. More scientific studies are needed to identify the biological characteristics in women which make them vulnerable to such morbidities. Oral pills are not recommended to women who are above 30 years of age, who smoke (not applicable to Indian women as hardly 0.5% smoke that too in urban area), who have certain other diseases like diabetes etc. Younger women are less likely to seek health care if the symptoms appear because of other social factors.

2. Parity

Parity or birth order is an important biological factor that affects women's chances of morbidity. Women with higher parity have poor nutritional levels, poor status and often have poor access to the health facility available to them. The type of contraception available to them and the follow up service is also important. Often the health worker may not seriously treat the patient and ignore to inform the person of the possible side effects. Women with

higher parity often go for sterlisation while those who are nulliparous or with one child often go for spacing methods.

3. Pregnancy Wastage

Many pregnancies may not result into live births but in reproductive wastage such as still birth, induced abortion and spontaneous abortion. An experience of pregnancy wastage may have a bearing on the women's health. Women with experience of pregnancy wastage are more likely to suffer from contraceptive morbidity. Often the pregnancy is under reported.

3.1.3 PROGRAMME FACTORS

Important programme factors which affect contraceptive morbidity and treatment seeking behavior are the availability of health and infrastructural facilities, rapport of the health personnel with the clients, source of the method and its availability, post acceptance care, supply follow up, proper counseling of the client before the acceptance of the method. Distance of the PHC from the village may also be taken as one of the programme factors because if the PHC in the area cannot support the population it represents then the clients are more likely to go to other source of treatment and supply or may not at all seek help for the problem faced by them.

3.1.4 INTERMEDIATE VARIABLES

1. Husband -Wife Communication On Health Problem

Involving men in women's health problem is one of the policy objectives of ICPD. If men and women have good communication then it facilitates women's health seeking behavior. Greater discussion on the reproductive health problems would help couples reach their reproductive goals more effectively and safely than otherwise. Men who are more aware of the health needs of women would be more willing in helping their spouse in choosing an appropriate contraception if condom is not used always. Studies in developing countries reveal that abstinence or withdrawal was more commonly practiced when other methods were not available.

2. Perceived Quality of Care at Government Health Centre

Program factors have a vital role to play in the type of contraceptive service provided. A weaker program may contribute to high levels of contraceptive morbidity and lower levels of health care, particularly in terms of providing access to services for sterlisation and IUD insertion. A better health programme may lead to more awareness of contraceptive methods and low levels of contraceptive morbidity. Quality of care received can be assessed through the availability of health facilities and services which are indirectly affected by the socio-economic factors. Studies have shown a positive correlation between the women's socio-economic status and health seeking behavior.

3.2 HYPOTHESIS

The principal hypotheses to be examined are:

1. Urban women, higher caste women, with higher standard of living, with higher educational level will have less health problems related to use of contraception than women living in rural areas, of lower caste, with low standard of living, illiterate/with lower educational level. Women in late adolescent age group of 35 years and above, with higher parity are more likely to experience contraceptive morbidity than women in their prime child bearing age group of 25-29 years.
2. Women married at very early age, with high experience of pregnancy wastage, with higher parity will have more problems related to use of contraception.
3. Urban women, of higher caste, with higher educational level, with high standard if living are more likely to go for treatment than Scheduled Castes, Scheduled Tribes and Other Backward Caste women, with lower educational level or are illiterate, with low standard of living, living in rural areas.
4. There is regional variation in pattern of type of contraceptive method used and morbidity caused due to it; the pattern will persist even if socio-economic conditions of household are controlled.

3.3 DATA SOURCE

The data used in the present study is obtained from the first round of the national level Reproductive and Child Health-Rapid Household Survey conducted in 1998-99 (RCH-RHS Phase I and II) by International Institute of Population Sciences, Mumbai (IIPS, 2001). The second round of RCH-RHS, 2003-04 data has not been used for the analysis. In the present analysis, second round data of RCH-RHS 2002-04 has not been included because individual level data for researchers was not available at the time of analysis. The National Family Health Survey (NFHS-2) conducted in 1998-99 has collected information on contraceptive use for ever married women and data on contraceptive morbidity, and treatment seeking behavior was collected for only currently married women, but the sample size of women used in NFHS-2 is smaller than RCH-RHS survey. Therefore it was decided to concentrate on the RCH-RHS round 1 (1998-99) data for the purpose of this study.

Two types of questionnaires were used in the RCH survey: the Household questionnaire and the Women questionnaire. The Household questionnaire was used to collect information on marriage and births among all the eligible women selected in the households. The Women's questionnaire collected information for all the currently married women aged 15-44 years. The household surveys in all the districts of India were carried out in two phases. The first phase of the survey was conducted in the year 1998 in 252 districts from 25 states and five union territories (excluding Dadra. and Nagar Haveli and Lakshdweep Islands) of the country. The second phase of the survey was conducted in 1999 in all the remaining 255 districts from 25 states and 5 union territories (excluding Delhi and Chandigarh). The focus of the survey was on the coverage of Antenatal Care (ANC) and immunization services, the extent of safe deliveries, the contraceptive prevalence and unmet need for family planning, the awareness about RTI/STI and HIV/AIDS and utilization of government health services.

The survey was carried out in 504 districts of India, which existed in 1995. A total of 529,817 households were contacted during the survey. From these surveyed households, 474,463 eligible women (currently married women in the age group 15-44 who are usual residents of the surveyed households) and 198,566 men in the age group 20-54 were interviewed. In the RCH-RHS the information on contraceptive morbidity were obtained on self-reported

symptoms, like weakness/inability to work, body ache/backache, cramps, weight gain, dizziness, breast tenderness, irregular periods, spotting, white discharge. Thus, the analysis will be based on self reported morbidity rather than clinically diagnosed or based on laboratory tests, a limitation that needs to be noted.

Here, in the present study the questions on awareness about the family planning methods, women currently using the contraceptive method, their source of the method, health problems related with the use of the method, treatment sought from have been discussed. These questions have been discussed in Section IV of the Women's questionnaire for all eligible women.

3.4 METHODOLOGY

The study has been divided into three major parts. First, it assesses the trends of contraceptive prevalence, morbidity. Secondly, analysis at individual level is carried out to examine differentials in contraceptive morbidity, treatment seeking by selected socio-economic, demographic and programme factors. Lastly, it studies with the help of regression analysis whether contraceptive morbidity and treatment seeking behavior are influenced due to socio-economic, demographic and program factors.

A question has been asked to women who are current contraceptive users as ***Have you/your husband had any health problem with the use of this method?*** {Q No.412 (phase 1 and phase2)}. If the respondent replied yes then she was asked ***Did you/your husband seek treatment for the health problem?*** {Q No.415 (phase1 and phase 2)}; if yes, ***whom did you/your husband consult for treatment?*** {Q No.415 (phase1 and phase 2)}.

Thirteen explanatory variables have been considered in the present study. These are *regional factors:* region and place of residence; *socio-economic factors:* religion of the women, caste of women, Educational level of Women, Standard of Living of the household ; *demographic factors*: age of the Woman, pregnancy wastage, and parity- categorized; *programme factors:* contraceptive motivator, Source of Method, service providers, follow- up service.

Differentials in prevalence of contraceptive morbidity and treatment seeking behavior by selected socio-economic and demographic factors have been presented at all India level. In this analysis one variable is taken at a time. However, many of these variables are interrelated, e.g., women's level of education is associated with caste, religion, place of residence etc., and hence to examine the *net effect* of individual variable a ***binary logistic regression*** has been carried out because the dependent (presence of contraceptive morbidity) is dichotomous (reported Yes or No), whereas the predictor variables are a combination of continuous (age of the women) and categorical variables(place of residence, religion, caste, educational level of the women and household standard of living, pregnancy wastage, contraceptive motivator, source of the method, informed about side effects, follow up service received). The predictor variables have also been categorized for the analysis. For treatment seeking behavior of the women multinomial regression have done which have been discussed later.

The basic form of logistic function is

Logit (P) = ln (P/1-P) = Z . . . . . (1)

Where P = Probability of occurrence of events

(Reporting of symptoms of contraceptive morbidity).

and $Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots + \beta_K X_K$

is a vector pf parameters $\beta_0, \beta_1, \beta_2, \beta_K$.

If Y is the response, then Y=1: occurrence of the event, and P=Probability (Y=1).

Thus, equation (1) postulates that the probability of occurrence of event is influenced by a set of predictor variables in the manner specified with $\beta_0, \beta_1, \beta_2 \ldots \beta_K$ as the logistic regression coefficients.

The equation can be expressed as,

P = exp (z) / (1 + exp (z)) . . . . . (2)

The quantity P / (1- P) is called the odds, hence the quantity, ln (P / (1-P)) is called log odds or the logit of P.

The coefficients are estimated using the method of maximum likelihood. The predictor variables should be numeric on a ratio scale. If a predictor variable is in a categorized form, it needs to be converted into dummy variables. Computer packages for logistic regression have a provision for doing so and it is adequate to specify a categorized variable as such and note

the reference category. In such cases the ratio term exp (β_K) for a particular category K is the odds ratio, that is, the ratio of odds for the category K to the odds for the reference category. (Retherford and Choe, 1993)

For treatment seeking behavior of the women ***multinomial logistic regression analyses*** have been done as the dependent variable has three categories (no treatment, public medical sector, private medical sector). Thus, ***multinomial logistic regression*** examines the influence of various socio-economic, demographic and programme factors on the dependent variable.

P_1: estimated probability of seeking Private Sector treatment

P_2: estimated probability of seeking Public Sector treatment

P_3: estimated probability of seeking no treatment

The categories of the response variable are mutually exclusive and exhaustive so a sample member should fall in only one of the categories. In this analysis, the reference category is taken as "No Treatment" and the predictor variables have already been stated before.

Thus, the multinomial Logit model then consists of two equations plus a constraint:

$$\log P_1/P_3 = a_1 + b_1 M + c_1 H + d_1 I \ldots\ldots\ldots (1)$$

$$\log P_2/P_3 = a_2 + b_2 M + c_2 H + d_2 I \ldots \quad (2)$$

$$P_1 + P_2 + P_3 = 1 \ldots \quad (3)$$

In these equations, logarithms are natural logarithms (base e). In general, the number of model equations (including the constraint) equals the number of categories of the response variable. Therefore, the quantities P_1/P_3 and P_2/P_3 in equation **(1)** and **(2)** are not odds, but for convenience may be referred simply as odds. Each of these odds has for its denominator the probability of the reference category of the response variable.

The model of **(1)** can be fitted by the method of maximum likelihood. In multinomial logit regression the interpretation of the coefficients is not as straight forward as in binary logit regression. Therefore, in presenting results of multinomial logit analysis, we deemphasize the odds and log odds and focus instead on the effects of the predictor variables directly on P_1, P_2, and P_3. (see details in Retherford and Choe, 1993)

3.4.1 MEASUREMENT OF VARIABLES

The various dependent and predictor variables have been categorized as –

DEPENDENT VARIABLES

In RCH-RHS 1998-99 survey, a question has been asked to the women on the health problems she might have had on the use of the contraceptive method used and if yes, did she seek the treatment for it; if yes, whom did she consult for the treatment. Therefore, there are three dependent variables. For the question on health problem the responses have been yes/no. therefore, binary logistic analysis have been done taking the variable as dichotomous. But for the question on treatment sought for, the responses are no treatment, treatment from private health sector, treatment from public health sector; and no treatment, treatment from a Doctor, treatment from a Nurse. Since there are three categories in this dependent variable multinomial regression analysis has been done. The categorization of the variables for each of the regressions has been shown in the table below. For the regression analysis SPSS Version 10.0 package have been used, which for the multinomial regression takes the default values as the highest value, so the reference category has been given the highest value. For the logistic regression the reference category can be chosen by the analyst. In this study the lowest or first value is taken as the reference category which is just the opposite of multinomial regression analysis.

The various dependent and predictor variables have been shown below:

VARIABLES	Binary Logistic Regression	Multinomial Logistic Regression
	CATEGORIES	
DEPENDENT VARIABLE	**Had any health Problem with the use of the method (Yes/No)** Yes = 1 (Reference Category) No= 0	**Source of Treatment** No Treatment = 2 (Reference Category) Private Health Sector = 1 Public Health Sector = 0 OR **Treatment provider** No Treatment = 2(Reference Category) Nurse = 1 Doctor= 0
INDEPENDENT VARIABLES		
Region*	South = 0 (Reference Category) North = 1 Central = 2 East = 3 West = 4 North East = 5	South = 5 (Reference Category) North = 4 Central = 3 East = 2 West = 1 North East = 0
Place of Residence	Rural = 0(Reference Category) Urban = 1	Rural = 1(Reference Category) Urban = 0
Religion	Hindu = 0 (Reference Category) Muslim = 1 Others = 2	Hindu = 2 (Reference Category) Muslim = 1 Others = 0
Caste	Others = 0 (Reference Category) SC = 1 ST = 2 OBC = 3	Others =3 (Reference Category) SC = 2 ST = 1 OBC = 0
Standard of Living	Kachcha = 0 (Reference Category) Semi Kachcha = 1 Pucca = 2	Kachcha = 2 (Reference Category) Semi Kachcha = 1 Pucca = 0
Age of Women	25 - 29 = 0 (Reference Category) 15 - 24 = 1 30 - 34 = 2 35+ = 3	25 - 29 = 3 (Reference Category) 15 - 24 = 2 30 - 34 = 1 35+ = 0
Educational level of Women	No Schooling = 0 (Reference Category) 1-5 years = 1 6-10 years = 2 >11 years = 3	No Schooling = 3 (Reference Category) 1-5 years = 2 6-10 years = 1 >11 years = 0
Parity	2 (Reference Category) 1 3 4+	2 (Reference Category) 1 3 4+
Pregnancy Wastage	No = 0 (Reference Category) Yes = 1	No = 1 (Reference Category) Yes = 0
Contraceptive Motivator	Others = 0 (Reference Category) ANM/Doctor/ Health Worker = 1	Others = 1 (Reference Category) ANM/Doctor/ Health Worker = 0

Source of Method	Public Health Sector = 0 (Reference Category) Private Health Sector = 1	Public Health Sector = 1 (Reference Category) Private Health Sector = 0
Health Worker Informed about the Side Effects	No = 0 (Reference Category) Yes = 1	No = 1 (Reference Category) Yes = 0
Follow Up Service	No = 0 (Reference Category) Yes = 1	No = 1 (Reference Category) Yes = 0

Note: * **North:** Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab and Rajasthan; **Central:** Madhya Pradesh and Uttar Pradesh; **East:** Bihar, Orissa and West Bengal; **North-East:** Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura; **West:** Goa, Gujrat and Maharastra; **South:** Andhra Pradesh, Karnataka, Kerala and Tamil Nadu.

3.5 SCOPE AND LIMITATION OF DATA

First round of the national level Reproductive and Child Health-Rapid Household Survey conducted in 1998-99 (RCH-RHS Phase I and II) by International Institute for Population Sciences, Mumbai (IIPS, 2001) provides information for all eligible women using the contraceptive methods provided by the family planning programme. But RCH-RHS does not collect data on other modern methods of contraception like Implant, Injectables, Spermicide, Norplant etc. It covers only those methods which are provided through government family planning programme so the present analysis does not include these methods. Also the data for the present study has been taken only for current users of contraception and not for ever users of contraceptive method who had earlier used any other method and discontinued because of side effects, or lack of supply, or wanted a child etc. as a result of which the side effects reported may be underestimated. Similarly, questions on why you discontinued with earlier method had not been asked to the current users of contraception but only to those who were currently not using any method of contraception. Thus, the study here does not include the earlier experiences of the current users of contraception about the other methods. Analysis of data has been done only for female modern methods of contraception (Sterlisation, Pills, and IUD) and not for condom, male sterlisation because the sample size does not include husbands as current users of contraception. Since the male methods (permanent or temporary) of contraception are not included in the study, the analysis gives only one sided opinion on the issue although it takes both husband and wife in reducing the morbidity.

The morbidity is reckoned as reported by the women; no clinical or diagnostic investigation was done in the survey. Thus, it is the 'self reported morbidity' that has been analysed rather than the diagnosed morbidity.

The analysis has taken only big states into consideration and ignored all UT's because the sample size was small and did not truly represent the true picture of contraceptive morbidity in the UT's. Similarly the North-Eastern states have been pooled because of small sample size in each of the states.

Nulliparous women have been ignored from the present analysis as it is expected that women without any child would not use contraception. Moreover, childbearing outside marriage is not socially acceptable and contraception is mainly used to prevent the unwanted pregnancy in India. In case of sterlisation, first birth order is also ignored as women would not any adopt permanent method if she has only one child and at younger age group.

Chapter 4

Contraceptive Prevalence Rate, Contraceptive Morbidity and Treatment Sought For Contraceptive Morbidity in India

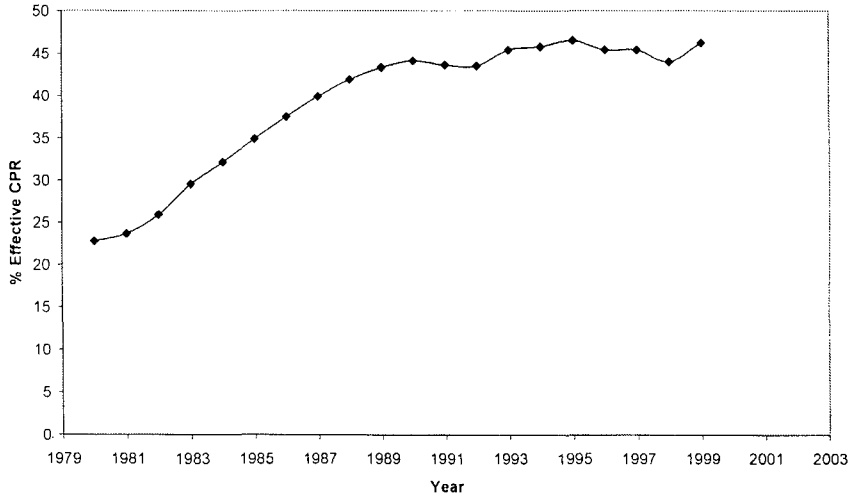
CHAPTER 4
CONTRACEPTIVE PREVALENCE RATE, CONTRACEPTIVE MORBIDITY AND TREATMENT SOUGHT FOR CONTRACEPTIVE MORBIDITY IN INDIA

This chapter first presents Trends in effective Couple Protection Rate, Contraceptive Prevalence Rate by method type for all India level and the major states. It also describes knowledge of the contraceptives methods. Further, prevalence of contraceptive morbidity by contraceptive method used and treatment sought for contraceptive morbidity have been discussed.

4.1 PERCENTAGE EFFECTIVE COUPLE PROTECTION RATE DUE TO ALL METHODS AS ON 31st MARCH, 1980-2000, INDIA

The couple protection rate, i.e., the percent of couples of reproductive age effectively protected by any method of contraception between 1980 -2000 is shown in Chart 4.1 (MOHFW, 2003). The ministry of health and family welfare considers only acceptors of modern family planning methods (sterlisation, IUDs, Pill, Condom) and hence the estimates provided by the programme do not include the traditional methods. As a result the contraceptive prevalence rate reported by them is likely to be underestimated. On the other hand, the acceptance figures themselves could be over reported by programme officials causing an inflated estimate. As a result, some differences between the programme and survey estimates is expected. The programme estimates shows that during 1980s only 22.3 percent of the couples were effectively protected when using either of the modern methods (female sterlisation, male sterlisation, IUDs, Pill, Condom) of contraception provided under the family planning programme. Within a decade the effective CPR had almost doubled to 44.1 percent in 1991.

Figure 4.1 Percentage Effective Couple Protection Rate due to All Methods, 1980 - 2000, India



Source: Ministry of Health and Family Welfare, 2003

4.2 KNOWLEDGE OF CONTRACEPTIVE METHOD BY STATE/UTs

While conducting surveys women are asked a question whether they have heard of the contraceptive method or not. However, women responding 'yes' necessarily may not be having a detailed knowledge about the method, so in this section when we refer to knowledge we are actually studying awareness level in the women about the various family planning methods available in India. Further in this section we may be referring to knowledge as synonyms to awareness about the method.

Table 4.2 presents the percentage of women (currently married women aged 15-44 years), who are aware of the modern family planning methods (Sterilisation, IUD, Pill, Condom) by states/union territories as revealed in the RCH-RHS. In India the knowledge of family planning is practically universal as 97.5 percent of the women are aware of at least one method of contraception and an equal number are aware of at least one modern method of contraception (97.2 percent). Though in most of the states/union territories the knowledge of contraception is universal, but in north eastern states where 10 percent or more women do not know even a single method of contraception. There is hardly any difference between proportion of women knowing

any method and the proportion knowing any modern method in all the states. Other surveys, NFHS-1 and NFHS-2 also show nearly universal awareness of contraceptive methods (IIPS, 1995; IIPS and ORC MACRO, 2000).

In the states/union territories of Goa, Kerala, Karnataka, Punjab, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal, Delhi more than 99 percent of the women knew at least one modern spacing method. Nonetheless, in Himachal Pradesh, Kerala, Punjab, Uttar Pradesh, West Bengal and Delhi more than three-fourths of the women were aware of all methods of contraception provided by the family planning programme (male and female sterilisation, IUD, Pills and condom). Knowledge of female sterilisation is almost universal (96.0 percent) in India. The range of proportion reporting knowledge varies from 62.1 percent in Meghalaya to 99.9 percent in Tamil Nadu. In a majority of the states and union territories almost 95 percent know about female sterilisation. Proportion knowing male sterilisation is also very high with 85.1 percent reporting knowledge. In every state/Union territory knowledge of female sterilisation is higher than that of male sterilisation. Regional variation indicated that knowledge was at lowest level of 33.1 percent in Meghalaya and the highest level of 97.9 percent in Himachal Pradesh. Apart from Meghalaya, women reported knowledge of male sterilisation (less than 75 percent) in Arunachal Pradesh, Assam, Karnataka, Mizoram, Nagaland and Sikkim. On the other hand in Andhra Pradesh, Bihar, Haryana, Kerala, Orissa, Punjab, Uttar Pradesh, West Bengal, more than 90 percent of the respondents reported knowledge of male sterilisation.

In spacing methods given here, knowledge of Oral Pill is slightly better than that of either IUD or condom. Knowledge of IUD varies from 30.1 percent in Andhra Pradesh to 93.7 percent in Punjab. More than 90 percent of women reported knowledge of IUD in Kerala and Delhi. Less than 50 percent knowledge of IUD was reported in Andhra Pradesh, Jammu & Kashmir, Madhya Pradesh and Meghalaya.

Table 4.2 PERCENTAGE OF MARRIED WOMEN OF AGE 15-44 YEARS AWARE OF METHODS OF CONTRACEPTION, STATE/UNION TERRITORIES, INDIA, RCH-RHS 1998-99

State/UT	Any Method	Any Modern Method	Any Spacing Method	Female Sterilisation	Male Sterilisation	IUD	Pill	Condom
Delhi	99.2	98.4	96.3	94.0	82.3	91.9	84.7	88.1
Haryana	98.9	98.9	88.3	98.5	93.8	82.3	82.7	78.0
Himachal Pradesh	98.9	98.8	85.2	98.5	97.9	78.9	81.0	80.3
Jammu & Kashmir	96.4	96.1	83.6	93.3	85.5	49.3	67.0	69.0
Punjab	99.8	99.8	96.6	99.5	96.3	93.7	92.5	91.5
Rajasthan	96.9	96.8	81.4	96.4	88.1	72.7	77.2	68.5
Madhya Pradesh	97.0	96.7	62.2	96.0	78.2	49.0	57.2	41.9
Uttar Pradesh	99.1	99.1	94.5	98.6	96.7	85.1	90.8	86.3
Bihar	99.0	99.0	74.1	98.8	92.4	50.5	69.2	47.0
Orissa	99.9	99.7	79.1	99.6	91.3	62.8	76.0	52.2
West Bengal	99.4	99.3	95.7	98.6	90.9	81.6	94.0	82.7
Goa	99.8	99.7	92.1	98.9	75.5	82.8	85.7	77.4
Gujarat	99.2	99.1	80.9	98.8	84.5	78.1	76.8	66.5
Maharashtra	98.9	98.8	79.2	98.2	87.3	74.1	74.9	64.7
Andhra Pradesh	99.0	99.0	36.4	98.8	97.3	30.1	31.2	23.8
Karnataka	99.6	99.6	79.6	99.3	70.6	76.0	70.1	50.9
Kerala	99.7	99.7	94.8	99.1	90.6	91.4	87.5	89.6
Tamil Nadu	99.9	99.9	90.4	99.9	89.8	87.8	84.4	72.5
Arunachal Pradesh	88.2	87.7	74.4	83.0	47.0	61.1	68.6	43.9
Assam	94.2	92.7	78.8	87.6	65.3	58.8	73.5	53.6
Manipur	84.0	83.0	78.4	74.9	67.4	73.1	65.0	53.7
Meghalaya	79.0	76.0	51.8	62.1	33.1	27.9	46.0	31.7
Mizoram	87.7	87.7	73.1	86.5	46.8	57.3	64.6	61.1
Nagaland	86.3	83.7	64.6	77.5	38.6	56.3	49.3	45.5
Sikkim	94.9	94.9	85.3	91.7	71.5	73.2	80.2	43.4
Tripura	99.4	99.0	94.8	98.1	85.9	66.1	93.8	69.8
India	**97.5**	**97.2**	**79.6**	**96.0**	**85.1**	**68.2**	**74.3**	**62.6**

Source: Computed from RCH-RHS data files

The range of variation in knowledge of Pills is between 31.2 percent in Andhra Pradesh and 94.0 percent in West Bengal. However, except Andhra Pradesh (31.2 percent) and Nagaland (49.3 percent) at least 50 percent reported knowledge of pills.

Knowledge of condom varies from 23.8 percent in Andhra Pradesh to 91.5 percent in Punjab. Less than 50 percent knowledge of condom was reported in Andhra Pradesh, Arunachal Pradesh, Bihar, Madhya Pradesh, Meghalaya, Nagaland and Sikkim.

4.3.1 CONTRACEPTIVE PREVALENCE RATE BY METHOD USED

Table 4.3.1 shows a comparison between NFHS-1, NFHS-2 and RCH-RHS (Phase 1& 2) on current use of family planning methods for currently married women in India. Nearly half that is, 48.5 percent of currently married women were using some method of contraception, either modern or traditional during the time the survey was conducted by RCH-RHS. The RCH-RHS estimates of current use, both over all and use of specific methods are close to those obtained by the NFHS-2 (48.2 percent) which was carried out at about the same time. Percentage of currently married women who were currently using some method of contraception was 40.3 percent (NFHS-1) during the survey conducted at national level during 1992-93.

Contraceptive prevalence by modern methods was 42.5 percent and that due to traditional methods was 6.1 percent from RCH estimates. It was 42.8 percent for modern methods and 5.0 percent for traditional methods from NFHS-2 estimates (NFHS-2, IIPS and ORC MACRO, 2000). Both the data are comparable to the extent strengthening the belief that in India nine in every ten family planning users would prefer modern method of contraception. From NFHS-1 the figures were 35.8 percent and 4.4 percent respectively for users of modern and traditional methods of contraception. (NFHS-1, 1995)

Table 4.3.1 Contraceptive Prevalence Rate By Method of Use

Percentage of Currently Married Women age 15-44 years using Contraceptive Method, India.

Method	NFHS - 1	NFHS - 2*	RCH Phase I & II
Any Method	**40.3**	**48.2**	**48.5**
Any Modern Method	**35.8**	**42.8**	**42.5**
Female Sterlisation	27.2	34.2	33.5
Male Sterlisation	2.7	1.9	1.5
IUD/Loop	2.0	1.6	1.9
Pill	1.3	2.1	2.4
Condom/Nirodh	2.6	3.1	3.2
Any Traditional Method	4.4	5.0	6.1
Not using any Method	59.7	51.8	51.5
Number of Women	**77430**	**83649**	**475871**

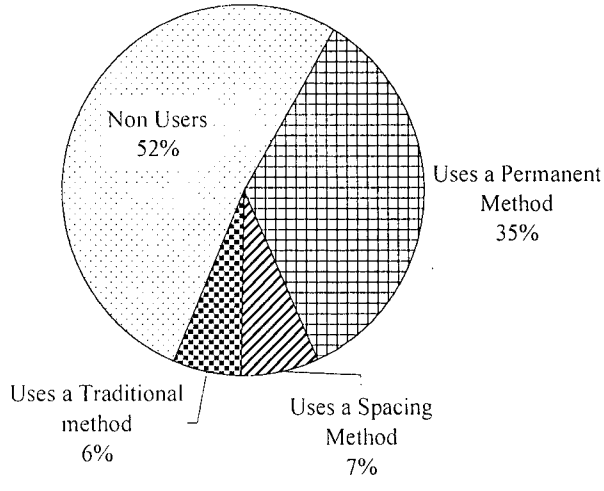
* For NFHS-2 The rate is for currently married women 15-49 years of age.

Sources:
NFHS-1 : IIPS(1995);
NFHS-2 : IIPS & ORC MACRO (2000);
RCH-RHS : Computed from data files

Comparison of NFHS-2 results for current contraceptive use with NFHS-1 results reveals an 18 percent increase in contraceptive prevalence since NFHS-1, when prevalence was 40.3 percent (Table 4.3.1). The share of female sterilisation in contraceptive prevalence increased slightly from 67 to 71 percent over the period (not shown). Since the share of male sterilisation has decreased from 9 to 4 percent, however, the share of female and male sterilisation together remained almost the same in NFHS-1 and NFHS-2 at about 75 percent (NFHS-2, International Institute for Population Sciences, 2000).

Among the users of modern method four-fifths have chosen a permanent method and another one-fifth prefers spacing methods. This is seen true for estimates from NFHS-2 also where about 35.1 percent couples prefer permanent method to any spacing method (Figure 4.3.1.1).

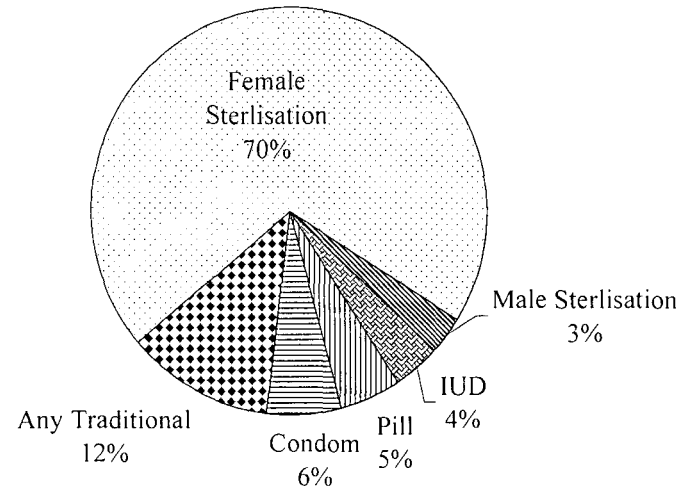
Figure 4.3.1.1 Distribution of Currently married women by Contraceptive Use, India, 1998-99



Source: Computed from RCH-RHS data files

As far as the different methods of family planning are concerned, female sterlisation is the most preferred method as one-third of the eligible women (69.0 percent of the total users) in India have adopted this method. The prevalence of male sterlisation is extremely low (3.0 percent) whereas for condom it is 6.5 percent in India. The two male methods account for eleven percent of the contraceptive use of modern methods (Figure 4.3.1.2). During the 1960s and early 1970s, vasectomy was promoted in India's family planning programme. The coercive vasectomy programme conducted during the Emergency (1975-77) had shown marked increase in the number of couples effectively protected. After the severe criticism of the coerced vasectomies that were performed, sometimes on unmarried men also, target free approach was introduced and it led to sharp decrease in the number of vasectomies from 1438337 in 1975-76 to 109902 in 2000-2001 (MOHFW, 1995, 2003). Afterward the couples were encouraged to choose the method which best suited their needs and also because of the renewed focus on improving the quality of services to be provided to the people.

Figure 4.3.1.2 Distribution of Current Users of Family Planning by Method, India, 1998-99



Source: Computed from RCH-RHS data files

The proportion of currently married women, who are using the programme sponsored spacing methods—Pill, IUD, and condom—was 1.3 percent, 2.0 percent and 2.6 percent respectively in NFHS-1 and 2.1 percent 1.6 percent and 3.1 percent respectively in NFHS-2, indicating almost no change occurred between the two surveys. Current use of traditional methods increased slightly between the two surveys, from 4.4 percent of currently married women in NFHS-1 to 5.0 percent in NFHS-2 (Table 4.3.1). These results indicate that, despite the increased emphasis on contraceptive choice and on spacing methods in the Reproductive and Child Health Programme, female sterlisation continues to dominate the method mix in India, and despite improvement in the knowledge of spacing methods, spacing methods still account for only a small fraction of contraceptive use.

4.3.2 DISTRIBUTION OF MODERN CONTRACEPTIVE USERS BY METHOD, STATES/UT's, RCH-RHS 1998-99

Percentage distribution of contraceptive users by modern contraceptive methods, in various States/UT's of India has been shown in Table 4.3.2. The major states have been arranged region wise and for convenience only Delhi has been included among the union territories because the sample size in each of the union territories was small. Similarly all the north eastern states have been clubbed for sample size in each of the states was small. Contraceptive use refers to the couples rather than women as the use includes use of family planning methods by women or their husbands. The pattern of use is more or less similar among the different states.

Overall in India, 78.8 percent couples have adopted female sterlisation in comparison to only 3.5 percent of couples going for male sterlisation. The inter-state variation shows that states where the couples adopted female sterlisation more than the national average were mainly the southern states. This was because of the extensive camp approach that was followed during the 1970-80 family planning programmes. Among these states comes Andhra Pradesh that has 92.0 percent tubectomy but only 6.3 percent vasectomies. Other states with high acceptance of female sterlisation are Tamil Nadu (90.3 percent), Karnataka (90.5 percent), Kerala (84.2 percent), Maharastra (81.5 percent), and Madhya Pradesh (83.7 percent). States have the least female sterlisation are north eastern states (47.6 percent), Jammu & Kashmir (55.6 percent), Himachal Pradesh (69.0 percent). Rajasthan is the only Northern state where female sterlisation is high (80.8 percent) while condom use is low as (8.6 percent). Bihar (88.0 percent), Orissa (82.4 percent) and West Bengal (68.5 percent) record also high female sterlisation rates.

In the states where the proportion of couple using female sterilization was less, condom was a more preferred option, and it is more than the national average of 7.4 percent. The highest condom use is reported in the union territory of Delhi (35.3 percent) where the percent of female sterlisation is only 39.4 percent, followed by Punjab (23.7 percent), Jammu & Kashmir (21.3 percent), Uttar Pradesh (17.1 percent) and North Eastern states

Table 4.3.2 Percentage distribution of Contraceptive Users by Contraceptive Methods, States/UT's, India, RCH-RHS 1998-99

State/UT's	Female Sterilization	Male Sterilization	IUD	Pill	Condom	No. of Users
North						
Delhi	39.4	2.7	18.0	4.6	35.3	3423
Haryana	71.7	3.2	7.4	3.6	14.2	4781
Himachal Pradesh	69.0	12.0	4.2	3.7	11.1	1746
Jammu & Kashmir	55.6	7.2	6.5	9.4	21.3	1511
Punjab	55.2	2.9	11.9	6.2	23.7	6662
Rajasthan	80.8	2.3	4.1	4.2	8.6	9892
Central						
Madhya Pradesh	83.7	3.6	2.3	3.4	7.0	15619
Uttar Pradesh	66.4	3.5	5.3	7.8	17.1	20177
East						
Bihar	88.0	2.9	1.8	4.6	2.6	11085
Orissa	82.4	3.9	1.9	9.2	2.6	6896
West Bengal	68.5	2.7	2.1	20.7	6.1	18375
N-E States	47.6	2.9	9.0	28.8	11.7	4582
West						
Goa	74.5	0.0	5.7	4.5	15.4	247
Gujarat	78.6	3.4	8.5	4.0	5.6	11726
Maharashtra	81.5	5.3	4.3	3.3	5.7	25120
South						
Andhra Pradesh	92.0	6.3	0.7	0.6	0.4	21285
Karnataka	90.5	0.8	4.8	1.4	2.5	14128
Kerala	84.2	3.0	5.2	1.1	6.5	9107
Tamil Nadu	90.3	0.9	6.0	0.5	2.3	15241
India	**78.8**	**3.5**	**4.6**	**5.7**	**7.4**	**201603**

Source : Computed from RCH-RHS data files

(11.7 percent). In the south Indian states condom use is the lowest with Andhra Pradesh (0.4 percent), Tamil Nadu (2.3 percent), Karnataka (2.5 percent) and Kerala (6.5 percent). Gujarat (5.6 percent) and Maharastra (5.7 percent) also record low condom use.

For spacing methods, it is seen that IUD use is the highest in North Eastern states (14.5 percent) followed by Punjab (12.2 percent), Jammu & Kashmir (8.4 percent), Gujarat (7.4 percent), and Haryana (7.1 percent). States where IUD are being used least as a method of contraception are Andhra Pradesh (0.7 percent), Bihar (1.8 percent), Orissa (1.9 percent).

The pill use was the highest in North Eastern states (28.8 percent) followed by West Bengal (20.7 percent) and Orissa (9.2 percent). Pill use is also high in Jammu & Kashmir (9.4 percent). Its least used in the south Indian states of Andhra Pradesh (0.6 percent), Tamil Nadu (0.5 percent), Karnataka (1.4 percent) and Kerala (1.1 percent).

4.4 PREVALENCE OF DIFFERENT TYPES OF CONTRACEPTIVE MORBIDITY, INDIA, RCH-RHS, 1998-99

In India excluding union territories, almost half of the currently married women were using a method of contraception at the time of the survey. Among current users of contraceptive methods 78.8 percent of women were practicing some modern method of contraception (female sterlisation, IUD and pills). Amongst those who practiced modern methods, 86.9 percent had undergone sterlisation, 5.8 percent of women were IUD users and 7.3 percent of women were using Pills (computed from RCH data files). Table 4.4 presents the proportion of women reporting different kinds of health related problems among the current users of specific modern contraceptive methods. Results show a high percentage of women reporting contraceptive morbidity on using any modern methods of contraception. About 20.3 percent women using any modern methods reported some health problem/ side effects with the use of method (20.4 percent of sterlised women, 17.6 percent of IUD users and 16.3 percent of pill users). Major health related problems reported were weakness/inability to work, bodyache/backache, dizziness, irregular

periods, excessive bleeding, white discharge and others among the women who were using any of the modern methods of contraception.

Among the women who reported any health problem within the method used, women using sterlisation predominated. Major health related problems reported were weakness/inability to work, bodyache/backache, dizziness, irregular periods, white discharge and others among the women who had adopted sterlisation. Minor problems reported among sterlisation users were spotting, breast tenderness, nausea/vomiting. Similarly, excessive bleeding, cramps, weight gain were reported with 1.8 percent, 1.6 percent and 1.6 percent among the women who had adopted sterlisation.

Almost 17.6 percent of the women had reported of problem due to IUD use. Most often reported health problem with IUD use were that of bodyache/backache, excessive bleeding, weakness/inability to work, irregular periods, white discharge, dizziness and others. Least reported problems were that of breast tenderness, nausea/vomiting, spotting, cramps and weight gain.

Among the pill users most often reported problems were of dizziness, weakness/inability to work, bodyache/backache, irregular periods, nausea/vomiting and excessive bleeding and others. Least reported symptoms were that of breast tenderness, spotting, cramps, weight gain and white discharge.

Thus, weakness/bodyache was the most common problem related with sterlisation and IUD user. A sizeable proportion of women fitted with IUD reported menstruation related problems like excessive bleeding (29.0 percent), irregular periods (16.2 percent) and spotting (4.5 percent). Comparatively larger proportion of users of sterlisation and IUD sought treatment for their problem.

Table 4.4 Prevalence of Different Types of Contraceptive Morbidity, India, RCH-RHS, 1998-99

Type of Health Problem	Type of Method						Any Modern Method (in %)	
	Female Sterilisation (in %)		IUD (in %)		Pill (In%)			
	Among all Women who were Sterilized	Among women who had problems	Among all Women who were using IUD	Among women who had problems	Among all Women who were using Pills	Among women who had problems	Among all Women who were using any modern method	Among women who had problems
Any Health Problem	**20.7**	-	**17.6**	-	**16.3**	-	**20.3**	-
Weakness/inability to work	9.0	43.5	3.3	18.8	6.7	41.5	8.6	42.3
Bodyache/Backache	11.8	56.7	7.9	45.0	3.3	20.4	11.0	54.4
Cramps	1.6	7.9	0.7	3.9	0.5	2.8	1.5	7.4
Weight Gain	1.6	7.7	1.1	6.5	0.8	4.9	1.5	7.5
Dizziness	4.4	21.5	1.3	7.6	8.1	50.0	4.5	22.3
Nausea/Vomiting	0.7	3.5	0.3	1.8	1.7	10.3	0.8	3.7
Breast Tenderness	0.5	2.3	0.2	0.9	0.2	1.2	0.4	2.1
Irregular Periods	2.0	9.6	2.8	16.2	2.4	14.8	2.1	10.2
Excessive Bleeding	1.8	8.5	5.1	29.0	1.3	7.8	1.9	9.3
Spotting	0.4	1.8	0.8	4.5	0.4	2.6	0.4	2.0
White Discharge	2.9	14.0	3.4	19.1	0.9	5.3	2.8	13.8
Others	5.4	25.9	3.0	17.3	3.0	18.6	5.1	25.1
No. of current contraceptive users (unweighted)	**139755**	-	**9246**	-	**11781**	-	**160776**	-

Source: Computed from RCH-RHS data files

Note: Percentages do not add to hundred percent because of multiple response (more than one health problem) reported by the woman

4.5 TREATMENT SOUGHT FOR CONTRACEPTIVE MORBIDITY BY TYPE OF CONTRACEPTIVE METHOD USED, INDIA, RCH-RHS, 1998-99

Table 4.5 shows the treatment sought for contraceptive morbidity by type of contraceptive method used by the women. Among those who reported health related side effects of their methods, 63.1 percent of women who were users of any modern method had sought treatment for the health problems reported (64.7 percent women who had adopted sterlisation, 61.7 percent who were IUD users and 40.5 percent of Oral Pill users). Those who sought treatment for any modern method of contraception mostly approached the private health facility (57.9 percent) than the public health facility (39.3 percent). Less than 3 percent sought treatment from other sources like Trained Dai, Untrained Dai, Relatives/ friends, self or others.

Among the women who sought treatment from private health facility or public health facility, a larger number of women sought treatment from the private doctors and government doctors than the private nurse and the government nurse/LHV/ANM respectively. Among women who were sterlised and had reported health problems/side effects, at least 35.3 percent did not seek any medical advice or treatment from doctor/nurse. For the remaining who sought treatment for sterlisation mostly approached the private health facility (57.6 percent) than the public health facility (39.7 percent). Less than 3 percent sought treatment from other sources like Trained Dai, Untrained Dai, Relatives/ friends, self or others. Among the women who sought treatment from private health facility or public health facility, a larger number of women sought treatment from the private doctors (55 percent) and government doctors (37.2 percent) rather than the private nurse and the government nurse/LHV/ANM respectively.

Similarly for IUD users and pill users 38.3 percent and 59.5 percent of women respectively, did not seek advice or medical treatment for the health problems/side effects that they suffered from, from the use of the method. A very small fraction, 5.0 percent of Pill users sought treatment from other sources like Trained Dai, Untrained Dai, Relatives/

Table 4.5 Treatment Seeking for Contraceptive Morbidity, India, RCH-RHS, 1998-99

Treatment sought for Contraceptive Morbidity (in %)				
Did not Seek Treatment	35.3	38.3	59.5	36.9
Sought Treatment for Health Problem	64.7	61.7	40.5	63.1
Source of Treatment	**Percentage distribution by Source of Treatment**			
	Female Sterilisation	**IUD**	**Pill**	**Any Modern Method**
Government Health Facility	**39.7**	**42.6**	**22.0**	**39.3**
Government Doctor	37.2	33.7	17.1	36.5
Nurse/LHV/ANM	2.5	9.0	4.9	2.8
Private Health Facility	**57.6**	**55.8**	**73.0**	**57.9**
Private Doctor	55.0	51.1	70.2	55.2
Private Nurse	2.6	4.8	3.0	2.7
Others	**2.7**	**1.5**	**5.0**	**2.8**
Trained Dai	0.0	0.1	0.1	0.1
Untrained Dai	0.0	0.0	0.9	0.0
Relative/friends	0.3	0.2	0.0	0.3
Self Treatment	1.2	0.8	0.9	1.2
Others	1.1	0.3	2.8	1.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
No. of women reported health problems	32880	1609	1827	36316

Source: Computed from RCH-RHS data files

friends, self or others. A minuscule proportion of IUD users (1.5 percent) went to other sources for treatment for IUD related health problems/ side effects.

Among the pill users 73.0 percent women sought advice or treatment from private health facility than public health facility (22.0 percent). Among the women who sought treatment from private health facility or public health facility, majority of the women sought treatment from the private doctors (70.2 percent) and government doctors (17.1 percent) rather than the private nurse (3.0 percent) and the government nurse/LHV/ANM (4.9 percent) respectively.

Among the IUD users, 55.8 percent women sought advice or treatment from private health facility than public health facility (42.6 percent). Among the women who sought treatment

from private health facility or public health facility, most of the women sought treatment from the private doctors (51.1 percent) and government doctors (33.7 percent) rather than the private nurse (4.8 percent) and the government nurse/LHV/ANM (9.0 percent) respectively.

The study reveals that women would approach private health facility rather than the public health facility for the treatment of any health related problems or side effects. This is quite concerning because government is seriously promoting quality health care facilities for the women coming under the Reproductive Child and Health Care programme. Results show the opposite scene meaning that health facilities have to be improved so that more women can avail the facilities provided by the Government.

4.6 REASONS OF DISCONTINUATION FOR EVER USERS OF CONTRACEPTIVE METHOD, INDIA, RCH-RHS, 1998-99

Table 4.6 shows the reasons of discontinuation for past users of contraceptive method. Question on discontinuation of the method was asked from those women who were currently not using any method of contraception and were not pregnant at the time of survey, but had used some method in their past. They were also asked about the last method used by them, what was her age during that time, how many children did she have at that time, how long did she use the method and did the doctor/nurse/ANM informed her about the side effects related with the use of the method. Here only the reasons that the ever users have reported for discontinuation of the last method used have been analysed Results show that just less than fifty percent (46.9 percent) of the women reported of wanting a child as the reason for the discontinuation of the method; which is not showing any contraceptive morbidity. For the follow up and supply related problem at least one percent women discontinued with the method while 8.9 percent women discontinued because method failed or they became pregnant.

Table 4.6 Reasons of Discontinuation for Ever Users of Contraceptive Method, India, RCH-RHS, 1998-99

Reasons For Discontinuation	No. of Women	Among all Women who were using any method but discontinued (in %)
Wanted Child	7383	46.9
Method Failed/Became Pregnant	1404	8.9
Supply Not Available	157	1.0
Difficult to get Method	205	1.3
Weakness/inability to work	984	6.3
Bodyache/Backache	449	2.9
Cramps	34	0.2
Weight Gain	141	0.9
Dizziness	400	2.5
Nausea/Vomiting	66	0.4
Breast Tenderness	88	0.6
Irregular Periods	524	3.3
Excessive Bleeding	769	4.9
Spotting	52	0.3
White Discharge	178	1.1
Lack of Pleasure	175	1.1
Method was inconvenient	417	2.6
Other	2305	14.7
Women Not Currently Using Any Method but used in the past	15731	100.0

Source: Computed from RCH-RHS data files

For the remaining 43.2 percent women who discontinued, reasons cited were because of the type of contraceptive method used. Main reasons for discontinuation were weakness/inability to work, irregular periods, excessive bleeding, bodyache/backache, dizziness and method was inconvenient. The least reported problems were that of cramps, weight gain, spotting. About 14.7 percent women have reported of other reasons for discontinuation. Only 1.1 percent women discontinued with the method because of lack of pleasure the spouse felt with the use of method.

In the present chapter it is seen that earlier there was greater emphasis to reduce the birth rate. As a result more emphasis was given to permanent methods of contraception like sterlisation, though spacing methods such as IUD, pills, and condoms were also available in the programme, called the cafeteria approach. But since 1996 as the target free approach was introduced temporary methods/ spacing methods were given greater importance. In the family planning programme only sterlisation IUD, Pills and Condoms have been promoted. In RCH-RHS survey questions on family planning method used by women have been asked. We have analyzed the contraceptive morbidity due to these methods and found that sterlisation is mostly used by women and the health problems/ side effects reported by them are weakness/inability to work, bodyache/backache, dizziness, irregular periods, white discharge and others. For IUD users menstrual problems are reported by majority of the women. Majority of the sterlised women and IUD users seek treatment. In the next chapter we will analyse the socio-economic, demographic and program factors that affect such trends of contraceptive morbidity reporting and their treatment seeking behavior.

Chapter 5

Socio-Economic, Demographic and Programme Differentials in Contraceptive Morbidity and Treatment Seeking Behavior, India

CHAPTER 5

SOCIO-ECONOMIC, DEMOGRAPHIC AND PROGRAMME DIFFERENTIALS IN CONTRACEPTIVE MORBIDITY AND TREATMENT SEEKING BEHAVIOUR, INDIA

This chapter deals with the influence of various socio-economic, demographic and programme factors on contraceptive morbidity among women users of contraception and the treatment sought by them. The analysis has focused on the socio-economic, demographic and programme differentials, among the women of age 15-49 years who are current contraceptive users. The RCH-RHS provides data on ever contraceptive users among the women of age 15-44 years but it is for the last method of contraception used by them. Even if some of them were users earlier because the use was in the past and the information is quite dated and subject to recall lapse, this study does not include them. This chapter presents the differentials without significance tests and only gross differentials have been shown for the three modern methods of contraception used by women and any modern method used by them. The next chapter examines if the net effect of these factors is statistically significant.

To show the differentials in contraceptive morbidity and treatment sought among the women who are current contraceptive users, socio-economic factors like region, place of residence, religion, caste, standard of living; demographic factors like age of women, educational level of women, parity and pregnancy wastage; programme factors like contraceptive motivator, source of method, whether health worker informed about side effects and follow-up service are used. It should be noted here that, for reasons given earlier, contraceptive morbidity discussed here is on the basis of 'self reported' morbidity by the women and not clinically diagnosed.

5.1 DIFFERENTIALS IN WOMEN REPORTING CONTRACEPTIVE MORBIDITY

Table 5.1 shows the association of contraceptive morbidity with different socio-economic, demographic and programme factors for women in India. Among the users of any modern method of contraception (female sterilisation, IUD, Pill), women of eastern region, rural women, Muslim or Scheduled Caste women, those living in kachcha houses, in age group 25-34, illiterate/ lower education, with higher parity, pregnancy wastage had reported higher experience of morbidity. Among women using any modern method of contraception, those who had ANM/Doctor/Health Worker as their motivator, had obtained the method from public health sector, were informed about the side effect from the health worker, and a health worker approached them later for inquiring about their health had reported higher prevalence of contraceptive morbidity.

For women who had adopted female sterilisation, the results were similar like that for any modern method users. Women of eastern region living in rural area, Muslim/Scheduled Caste women, living in Kuchcha houses, in higher age groups of 25-34 years, with no schooling and less schooling years (1-5 years), with higher parity and pregnancy wastage had reported higher symptoms of morbidity due to adoption of female sterlisation. Also women who had ANM/Doctor/Health Worker as their motivator, who had gone to public health sector for the method, were informed of the side effects of the method and were later visited by health personnel inquiring for their health had reported higher contraceptive morbidity.

Among IUD and Pill users, women of eastern region living in rural area, Muslim/Scheduled Caste women, living in Kuchcha houses, with higher parity and pregnancy wastage had reported higher symptoms of morbidity due to adoption of female sterlisation. Also women who had ANM/Doctor/Health Worker as their motivator had reported higher contraceptive morbidity. However, for IUD users it was found that women of 15-29 years, with more schooling (6-10 years) had reported higher contraceptive morbidity. Among IUD users who

Table 5.1 PERCENTAGE OF WOMEN WHO HAD REPORTED CONTRACEPTIVE MORBIDITY BY SELECTED BACKGROUND CHARACTERISTICS, INDIA, 1998-99

Background Characteristics of Users	Type of Method			Any Modern Method
	Female Sterilisation	IUD	Pill	
	% Reported Problem	% Reported Problem	% Reported Problem	% Reported Problem
Region				
South	18.5	19.5	9.6	18.4
North	21.0	16.3	12.8	20.0
Central	17.7	14.3	12.3	17.1
East	28.6	22.7	21.2	27.4
West	20.4	17.8	12.9	19.8
N-E States	18.7	15.8	13.6	16.6
Place of Residence				
Rural	22.1	18.4	17.3	21.7
Urban	16.8	16.8	14.0	16.6
Religion				
Hindu	20.6	16.4	14.2	20.0
Muslim	23.8	26.5	23.4	23.9
Others	20.3	16.2	14.3	19.5
Caste				
Others	19.8	16.6	16.9	19.2
SC	24.4	21.0	17.9	23.9
ST	20.1	14.9	13.4	19.5
OBC	20.2	19.2	13.8	19.8
Standard of Living (Type of House)				
Kachcha	24.3	19.6	19.9	23.9
Semi-Pucca	20.4	20.4	15.9	20.1
Pucca	17.5	15.6	12.5	17.0
Age of Women				
25-29	22.0	19.0	15.1	21.0
15-24	20.7	21.0	18.7	20.3
30-34	21.8	17.1	16.7	21.3
35+	19.8	12.0	14.0	19.4
Educational Level of Women				
No Schooling	22.4	18.3	17.5	22.0
1-5 Years	22.6	18.5	20.8	22.2
6-10 Years	17.9	19.5	14.9	17.7
>11 Years	11.9	14.6	10.2	12.3

Cont.....

Cont.....

Background Characteristics of Users	Type of Method			Any Modern Method
	Female Sterilisation	IUD	Pill	
	% Reported Problem	% Reported Problem	% Reported Problem	% Reported Problem
Parity				
1	NA	17.9	14.1	15.6
2	17.8	16.9	16.3	17.6
3	20.5	17.4	15.7	20.2
4+	22.6	18.8	18.1	22.3
Pregnancy Wastage				
No	19.6	16.2	14.6	19.0
Yes	28.5	23.0	23.4	27.6
Contraceptive Motivator				
Others	20.0	16.5	15.5	19.5
ANM/Doctor/Health Worker	26.5	21.9	19.3	25.4
Source of Method				
Public health Sector	21.6	19.1	16.8	21.3
Private health Sector	16.4	15.9	16.1	16.2
Health worker Informed about Side Effects				
No	20.3	15.6	15.0	19.6
Yes	21.8	19.9	20.5	21.5
Follow up Service				
No	20.2	16.8	16.1	19.6
Yes	22.2	21.6	17.7	22.0
All Contraceptive Users	**20.8**	**17.6**	**16.3**	**20.3**
No. of current Contraceptive users (unweighted)	**139755**	**9246**	**11781**	**160782**

Source: Computed from RCH-RHS Data File.

NA: Not Applicable(for sterilised women one parity not taken as no. of cases were less)

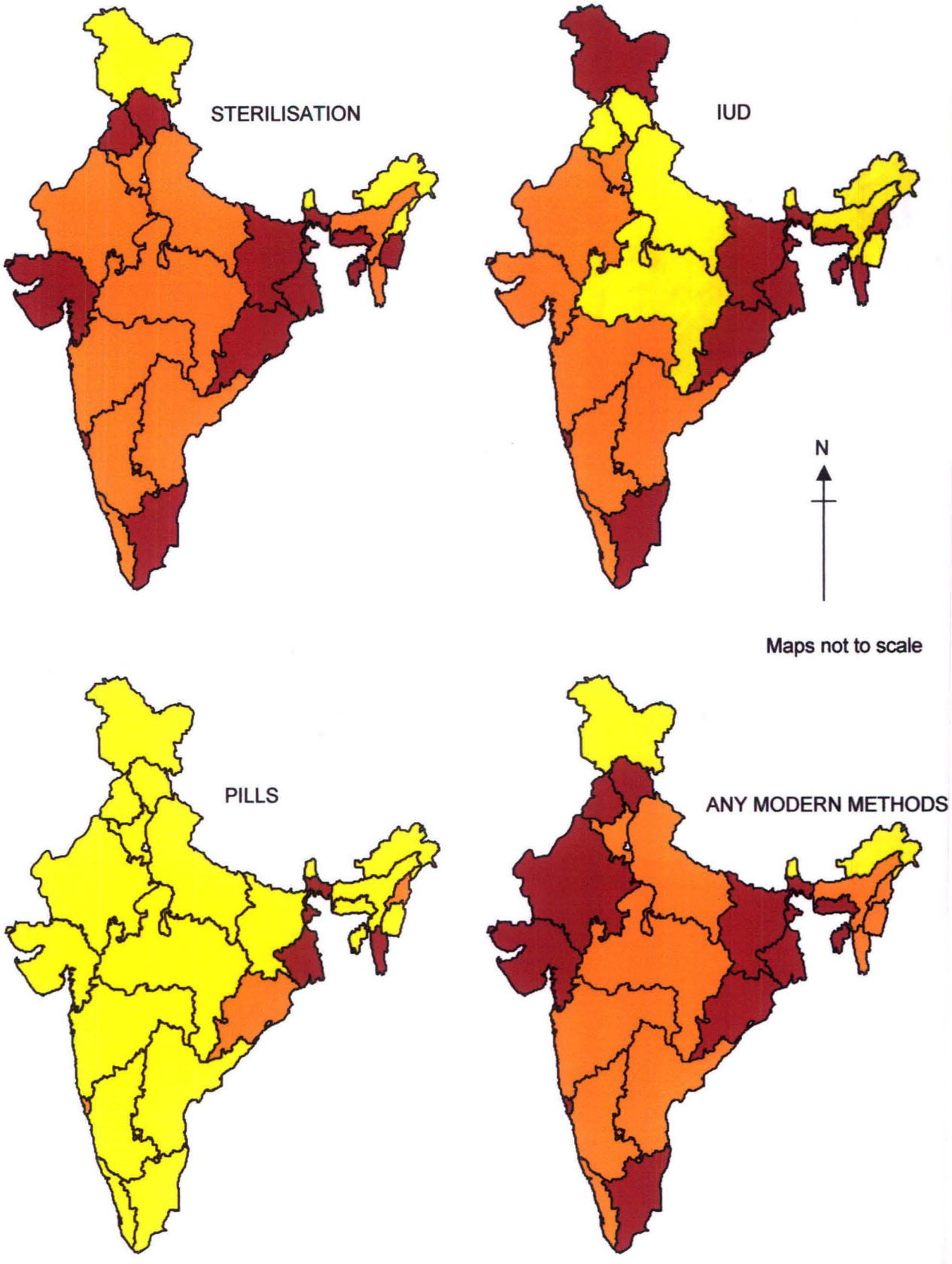
had got the IUD inserted from public health sector, and were informed about the side effects, and were later inquired about their health by the health personnel had reported higher contraceptive morbidity.

Among pill users women of lower age group 15-24 years, with no schooling or low schooling years (1-5 years), those who had obtained the pill from public health sector and were informed about the side effects had reported higher contraceptive morbidity. For pill users differentials by source of method and follow up service did not show much difference because many women might have obtained the pills from the medical store without the prescription of the doctor and may not approach the health centre after the health problems come, but may rather discontinue with the method. Pill users are generally the women in younger age group who would prefer spacing method to delay pregnancy than women of higher age group who go for permanent method (female sterlisation) for further not conceiving.

Figure 5.1 shows the prevalence of contraceptive morbidity among the various states of India for any modern method, sterlisation IUD and pill. Prevalence of any method of contraception is high in the states of Himachal Pradesh, Punjab Rajasthan, Gujarat, West Bengal, Bihar, Orissa, and Tamil Nadu. Prevalence is low among Jammu & Kashmir and Arunachal Pradesh as both are mountainous states with problem of accessibility for prevalence of contraceptive methods.

Among women sterilised a similar picture appears except Rajasthan where there is medium prevalence of sterilisation. For IUD users least prevalence is seen in the northern states of Himachal Pradesh, Punjab, and Uttar Pradesh. Highest prevalence is seen in Jammu & Kashmir, Bihar, West Bengal, Orissa and Tamil Nadu. Pills are most prevalent in West Bengal and Tripura and marginally prevalent in the states of Orissa, Goa and Nagaland.

FIGURE 5.1 PREVALENCE OF CONTRACEPTIVE MORBIDITY IN INDIA



5.2 DIFFERENTIALS IN WOMEN WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY

Table 5.2 shows the association of treatment sought for contraceptive morbidity with different socio-economic, demographic and programme factors for women in India. For users of any modern method of contraception, women of southern region, urban women, Muslim women, women of Other Backward Castes and of Other caste, living in Pucca houses, in higher age groups (25-34 years/35+ years), with higher parity showed greater tendency to seek treatment for symptoms of contraceptive morbidity. However, the differentials for educational level of women, pregnancy wastage, contraceptive motivator, source of the method, being informed about the side effects and follow up service received did not show much variation in the pattern of treatment sought for the contraceptive morbidity.

Among the women who had reported some health problem with sterilisation, a larger percentage of women of southern region, Muslim women, of higher age groups (25-34 years), higher parity, who had got the sterlisation done at private health facility had sought treatment for the problems. Other factors like religion, caste, standard of living, educational level of women, pregnancy wastage, contraceptive motivator, being informed about the side effect, follow up services do not show much difference in the treatment sought for the problems due to the sterilisation operation.

For IUD users women living in pucca houses, urban area, in higher age groups of 25-34 years, with higher educational level, with no pregnancy wastage, with service obtained from private health facility, were informed about the side effects had gone more for seeking treatment for the morbidity due to IUD use. However, there is not much difference seen across the factors of region, religion, caste, contraceptive motivator; follow up services given to IUD users. Women with low parity have mostly sought treatment for the problems arising due to IUD insertion than those with higher parity. Among Pill users a larger proportion of women of southern and northern India, living in urban areas, with higher educational level, which were informed about the side effects

Table 5.2 PERCENTAGE OF WOMEN WHO HAD SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY BY SELECTED BACKGROUND CHARACTERISTICS, INDIA, 1998-99

Background Characteristics of Users	Type of Method			Any Modern Method
	Female Sterilisation	IUD	Pill	
	% Who Sought Treatment	% Who Sought Treatment	% Who Sought Treatment	% Who Sought Treatment
Region				
South	71.3	63.0	51.1	70.8
North	53.2	69.3	57.3	54.8
Central	60.7	57.8	33.1	59.3
East	63.4	51.2	37.9	60.3
West	66.9	60.7	55.2	66.3
N-E States	55.5	50.0	33.9	49.0
Residence				
Rural	63.5	57.7	37.1	62.1
Urban	69.4	66.1	49.6	67.7
Religion				
Hindu	64.2	62.3	38.4	63.2
Muslim	70.0	62.9	43.8	65.0
Others	64.9	56.4	46.4	63.4
Caste				
Others	66.0	63.1	41.5	63.9
SC	62.7	61.8	40.3	61.8
ST	55.8	55.3	23.1	54.5
OBC	66.3	59.5	42.3	65.4
Standard of Living (Type of House)				
Kachcha	60.6	46.6	34.2	58.8
Semi-Pucca	66.7	58.9	42.5	65.4
Pucca	68.0	67.4	49.5	67.1
Age of Women				
25-29	62.9	62.5	41.7	61.5
15-24	59.6	57.4	33.6	54.5
30-34	65.6	67.1	45.4	64.7
35+	65.8	58.7	45.3	65.3
Educational Level of Women				
No Schooling	62.1	56.6	37.4	61.2
1-5 Years	68.0	56.1	38.7	65.7
6-10 Years	69.6	58.3	43.1	66.6
>11 Years	67.7	72.8	50.0	67.6

Cont.....

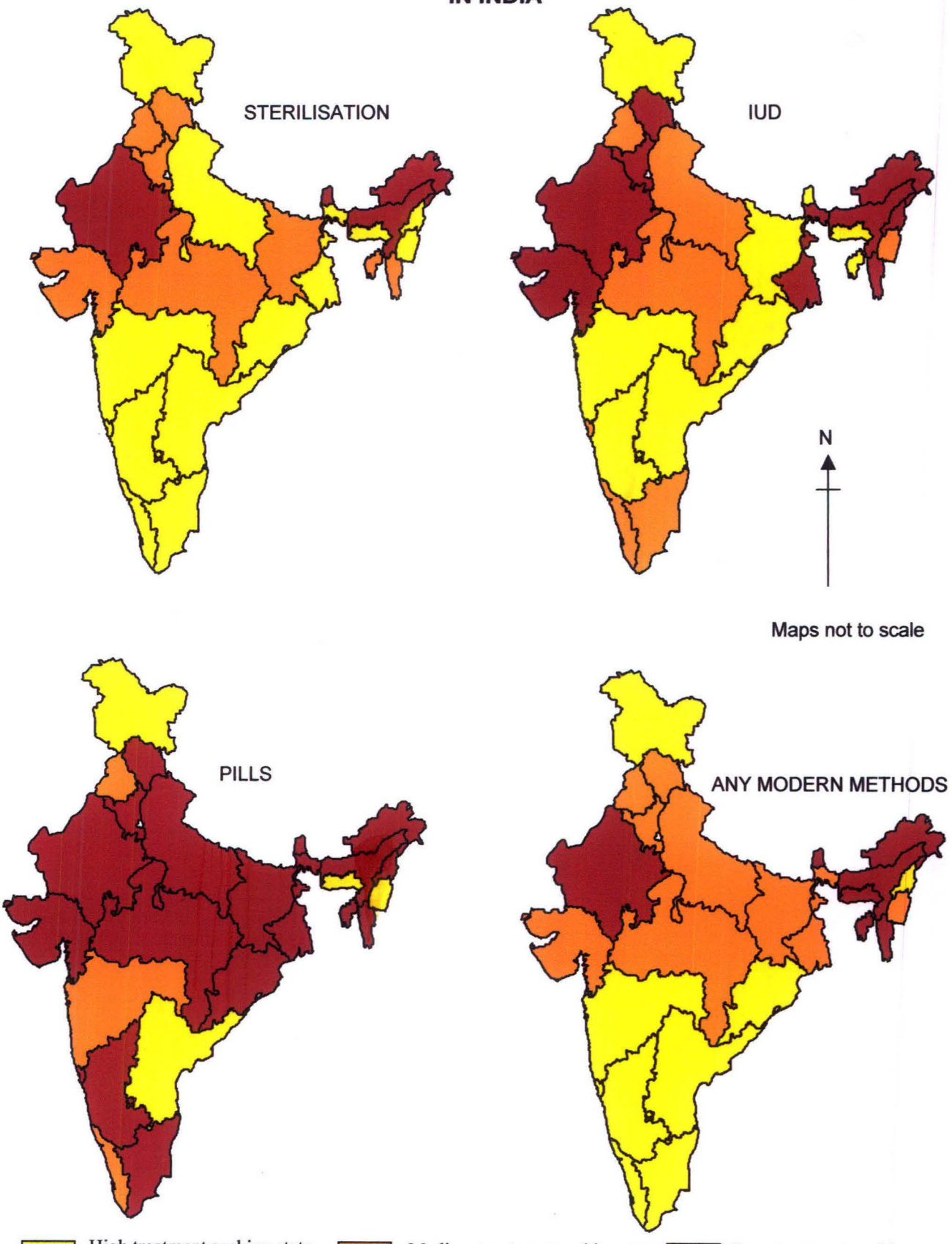
Cont.....

Background Characteristics of Users	Type of Method			Any Modern Method
	Female Sterilisation	IUD	Pill	
	% Who Sought Treatment	% Who Sought Treatment	% Who Sought Treatment	% Who Sought Treatment
Parity				
1	NA	69.1	36.2	57.7
2	17.8	16.9	16.3	17.6
3	65.7	61.0	42.0	64.9
4+	62.8	60.6	42.4	62.0
Pregnancy Wastage				
No	64.1	62.9	37.9	62.8
Yes	67.4	58.0	47.6	65.6
Contraceptive Motivator				
Others	64.4	60.8	38.0	63.1
ANM/Doctor/Health Worker	66.5	64.1	48.5	65.0
Source of Method				
Public health Sector	63.7	58.5	39.8	63.2
Private health Sector	72.3	65.8	40.7	64.2
Health worker Informed about Side Effects				
No	63.2	57.0	34.8	61.4
Yes	67.5	66.0	54.4	66.9
Follow up Service				
No	63.4	61.0	39.1	61.7
Yes	67.5	64.2	52.4	67.3
All Contraceptive Users	**64.7**	**61.7**	**40.5**	**63.4**
No. of current Contraceptive users (unweighted)	**28754**	**1535**	**1620**	**31909**

Source: Computed from RCH-RHS Data File.

NA: Not Applicable (for sterlised women one parity is not taken as no. of cases is less)

FIGURE 5.2 TREATMENT SEKING BEHAVIOUR FOR CONTRACEPTIVE MORBIDITY IN INDIA



and had follow up service have gone for the treatment. Among scheduled caste women the tendency to seek treatment for morbidity due to pill use is the lowest, which is also true for north eastern women (33.9 percent).

Figure 5.2 shows the treatment seeking behavior for contraceptive morbidity among the states of India. Women of south India are most likely to seek treatment for the morbidity while women of Rajasthan and north eastern states are least likely to seek treatment for contraceptive morbidity due to any modern method. For all other northern and western and central states treatment seeking tendency is moderate.

Among sterlised women highest tendency to seek treatment is seen in southern states, Uttar Pradesh, Jammu & Kashmir, West Bengal and Mizoram, Meghalaya and Nagaland while women of Rajasthan and Arunachal Pradesh are least likely to seek treatment for contraceptive morbidity. For IUD users highest tendency to seek treatment is seen in southern states of Andhra Pradesh, Karnataka, Maharastra, west Bengal Orissa and Jammu & Kashmir.

Poor performer for seeking treatment among pill users are the entire north Indian states including Karnataka, Tamil Nadu and north eastern states. Highest performers are Andhra Pradesh, Jammu & Kashmir, Meghalaya and Manipur.

5.3 DIFFERENTIALS IN WOMEN WHO SOUGHT TREATMENT FROM PUBLIC/PRIVATE HEALTH SECTOR FOR CONTRACEPTIVE MORBIDITY

Table 5.3 shows the association of source of treatment for contraceptive morbidity with different socio-economic, demographic and programme factors for women in India. Marginal differences are seen in the southern, central and eastern region for the source of treatment (public/ private health sector), whereas women in the northern and eastern region would prefer seeking treatment from public health sector. Women who had obtained the method from private health sector would prefer to seek treatment from private sector only. Whereas marginal difference was seen in the treatment sought for the women who availed the method from public sector. For all other factors marginal variation was seen in preference for the source of treatment for all methods of contraception.

Similar results were seen for different contraceptive users. Among sterilised women, those in the northern and eastern region preferred seeking treatment from public health sector. Women living in pucca houses (good standard of living) preferred private health sector over public health sector. For all other factors marginal differences were seen in the preference for either of the sectors.

For IUD users women living in the southern and western regions showed preference for private sector to seek treatment than public sector, whereas, women living in the northern region preferred seeking treatment from public health sector. Muslim women, scheduled caste women, those living in Kuchcha houses preferred seeking treatment from public health facilities, whereas women living in pucca or semi-pucca houses, with higher educational level showed a preference for private health facility. IUD users in younger age group showed marginal preference for private health sector over public health facility. For pill users, women living in the eastern region showed a preference for private health sector. Pill users with a child preferred going to private health facility for treatment. Pill users with pregnancy wastage showed marginal preference for private health facility over public health facility. Women who obtained pills from private facilities showed a preference for treatment from private sector.

Table 5.3 PERCENTAGE OF WOMEN WHO SOUGHT TREATMENT FROM PUBLIC/PRIVATE HEALTH SECTOR FOR CONTRACEPTIVE MORBIDITY BY SELECTED BACKGROUND CHARACTERISTICS, INDIA, 1998-99

Background Characteristics of Users	Percent of women with morbidity who sought treatment from the specified sector							
	Type of Method						Any Modern Method	
	Female Sterilisation		IUD		Pill			
	Public Health Sector	Private Health Sector	Public Health Sector	Private Health Sector	Public Health Sector	Private Health Sector	Public Health Sector	Private Health Sector
Region								
South	36.1	31.7	19.8	33.1	3.7	3.1	34.7	30.6
North	13.1	7.3	33.7	21.3	23.9	10.0	14.3	7.9
Central	13.5	13.3	13.2	10.8	13.5	11.1	13.5	13.1
East	18.2	26.8	9.2	7.4	30.1	57.3	18.0	27.2
West	17.3	20.4	19.8	25.0	7.4	14.4	17.3	20.3
N-E States	1.7	0.6	4.2	2.4	21.5	4.1	2.2	0.8
Place of Residence								
Rural	77.6	77.9	54.7	45.3	72.0	64.6	76.4	76.0
Urban	22.4	22.1	45.3	54.7	28.0	35.4	23.6	24.0
Religion								
Hindu	85.0	85.3	65.1	73.1	72.6	57.6	83.9	83.7
Muslim	8.7	8.9	21.0	16.8	22.0	36.9	9.5	10.4
Others	6.3	5.8	13.9	10.1	5.5	5.6	6.6	6.0
Caste								
Others	35.8	41.1	61.2	56.9	51.5	65.2	37.3	42.7
SC	22.3	19.9	12.5	7.4	23.3	16.1	21.9	19.2
ST	6.8	4.7	3.1	2.3	3.1	3.0	6.6	4.5
OBC	35.0	34.3	23.2	33.3	22.1	15.7	34.2	33.5
Standard of Living (Type of Household)								
Kachcha	36.3	35.2	13.9	6.5	42.1	38.0	35.4	34.2
Semi-Pucca	37.9	34.5	39.6	30.3	26.2	29.1	37.8	34.2
Pucca	25.8	30.2	46.5	63.2	31.7	33.0	26.8	31.7
Age of Women								
15-24	6.2	6.0	21.2	29.4	20.9	28.5	7.1	7.9
25-29	20.3	20.0	38.9	34.1	30.7	28.9	21.3	20.9
30-34	26.5	27.2	28.1	22.0	28.2	23.9	26.6	26.8
35+	47.1	46.8	11.8	14.4	20.2	18.7	44.9	44.3

Cont...

Cont...

Background Characteristics of Users	Percent of women with morbidity who sought treatment from the specified sector							
	Type of Modern Method						Any Modern Method	
	Female Sterilisation		IUD		Pill			
	Public Health Sector	Private Health Sector	Public Health Sector	Private Health Sector	Public Health Sector	Private Health Sector	Public Health Sector	Private Health Sector
Educational Level of Women								
No Schooling	61.9	55.9	22.2	13.9	37.8	35.1	59.6	53.3
1-5 Years	15.9	17.1	14.6	7.8	11.6	21.9	15.7	16.9
6-10 Years	20.2	23.3	41.3	38.3	43.9	32.7	21.6	24.3
>11 Years	2.1	3.7	21.9	40.1	6.7	10.4	3.1	5.5
Parity								
1	0.9	0.8	23.6	38.4	8.6	20.0	2.1	3.2
2	20.6	21.5	37.4	31.4	39.3	26.2	21.7	22.1
3	31.4	31.3	19.9	13.4	19.0	19.2	30.7	30.1
4+	47.1	46.4	19.1	16.8	33.1	34.6	45.6	44.7
Pregnancy Wastage								
No	81.0	79.4	80.9	71.1	81.7	64.4	81.0	78.4
Yes	19.0	20.6	19.1	28.9	18.3	35.6	19.0	21.6
Contraceptive Motivator								
Others	82.7	86.0	74.0	74.5	63.4	73.3	82.0	85.0
ANM/Doctor/Health Worker	17.3	14.0	26.0	25.5	36.6	26.7	18.0	15.0
Source of Method								
Public health Sector	96.2	80.5	85.6	28.9	51.8	15.4	94.9	75.7
Private health Sector	3.8	19.5	14.4	71.1	48.2	84.6	5.1	24.3
Health worker Informed about Side Effects								
No	60.7	63.5	42.2	46.4	52.8	61.9	59.6	62.7
Yes	39.3	36.5	57.8	53.6	47.2	38.1	40.4	37.3
Follow up Service								
No	63.2	69.5	77.8	81.4	82.3	87.4	64.2	70.7
Yes	36.8	30.5	22.2	18.6	17.7	12.6	35.8	29.3
No. of current Contraceptive users (unweighted)	**17682**		**894**		**635**		**19211**	

Source: Computed from RCH-RHS Data File.

NA: Not Applicable

The above discussion reveals that overall, region itself has its influence on contraceptive morbidity by the type of method used but within the method itself not much variation is found in the women reporting morbidity and who had sought treatment for the same. Religion, caste, standard of living also do not show much variation. Only the biological factors of age of women, parity, pregnancy wastage, source of method, (for pill users) follow up service show some differences. Female sterilisation was mostly adopted by southern states where there was a campaign in the early to mid 1970s for sterlisation (mass camps were set for female sterilisation) and they mostly sought treatment. Female sterilisation was the lowest in north and north eastern states. Similarly there were very few IUD users in north eastern states and most of the northern region. Pill users were the lowest in central, east and north eastern states.

Chapter 6

Regression Analysis for Contraceptive Morbidity and Treatment Seeking Behavior, India

CHAPTER 6

REGRESSION ANALYSIS FOR CONTRACEPTIVE MORBIDITY AND TREATMENT SEEKING BEHAVIOR, INDIA

In the previous chapter, we had discussed the gross differentials for contraceptive morbidity and the tendency to seek treatment for it. We need to study the net effect of each variable because some of the independent variables may be strongly correlated with each other and may have a neutralizing effect on the overall individual effect of the variable. For example, place of residence, caste, religion, standard of living, educational level of the women are all related factors. These factors are also area specific, so we took region (South, North, East, West, Central, and North Eastern States) as a separate variable to see how it may itself have an effect on contraceptive morbidity and the tendency among women to go for treatment.

This section consists of two types of regression analysis. Binary logistic regression has been done for contraceptive morbidity for users of any modern method, sterilised women, IUD users, pill users; while multinomial logistic regression has been done for the treatment sought for the reported contraceptive morbidity among the current contraceptive users. Description of the variables as they have been taken and categorized has been given in chapter 3.

6.1 LOGISTIC REGRESSION FOR CONTRACEPTIVE MORBIDITY

Table 6.1 presents results of logistic regression for contraceptive morbidity on background characteristics for any modern method of contraception, females sterilized, IUD users, and pill users. The table presents odds ratios for various categories to the reference category. For any modern method users the results show that women residing in the north, east and west region are more likely to report morbidity than those residing in the southern region. However, women of central and north eastern regions are less likely to report any morbidity due to the use of any modern methods than those living in

Table 6.1 Logistic Regression results for Contraceptive Morbidity on Background Characteristics, India, RCH-RHS 1998-99

Background Characteristics of Users	Type of Method			Any Modern Method
	Female Sterilisation	IUD	Pill	
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Region				
South (RC)	.	.	.	.
North	1.115**	1.008	1.520*	1.084**
Central	0.931**	0.849	1.564*	0.912**
East	1.605**	1.292*	2.415**	1.556**
West	1.185**	1.013	1.491*	1.148**
N-E States	0.959	0.859	1.547*	0.879**
Place of Residence				
Rural (RC)	.	.	.	.
Urban	0.830**	0.98	0.948	0.842**
Religion				
Hindu (RC)	.	.	.	.
Muslim	1.233**	1.795**	1.680**	1.277**
Others	1.070*	1.065	1.244	1.069**
Caste				
Others (RC)	.	.	.	.
SC	1.164**	1.315**	1.181*	1.168**
ST	0.897**	0.949	0.863	0.899**
OBC	1.024	1.152*	0.974	1.035*
Standard of Living (Type of House)				
Kachcha (RC)	.	.	.	.
Semi-Pucca	0.934**	1.111	0.94	.938**
Pucca	0.871**	0.936	0.834*	.869**
Age of Women				
25-29 (RC)	.	.	.	.
15-24	0.945*	1.115	1.275**	0.996
30-34	0.976	0.818**	1.001	0.976
35+	0.847**	0.513**	0.769**	0.847**

Cont.....

Cont.....

Background Characteristics of Users	Type of Method			Any Modern Method
	Female Sterilisation	IUD	Pill	
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Educational Level of Women				
No Schooling (RC)	.	.	.	.
1-5 Years	1.064**	1.075	1.171*	1.059**
6-10 Years	0.881**	1.231*	0.989	0.894**
>11 Years	0.662**	1.085	0.835	0.724**
Parity				
2 (RC)	.	.	.	.
1	NA	0.956	0.806**	0.910*
3	1.130**	1.119	0.989	1.131**
4+	1.226**	1.373**	1.137	1.236**
Pregnancy Wastage				
No (RC)	.	.	.	.
Yes	1.649**	1.640**	1.732**	1.646**
Contraceptive Motivator				
Others (RC)	.	.		.
ANM/Doctor/Health Worker	1.320**	1.299**	1.196**	1.298**
Source of Method				
Public health Sector (RC)	.	.		.
Private health Sector	0.841**	0.842**	0.912	0.788**
Health worker Informed about Side Effects				
No (RC)	.	.	.	.
Yes	1.095**	1.286**	1.484**	1.121**
Follow up Service				
No (RC)	.	.	.	.
Yes	1.016	1.096	0.955	1.019
Constant	0.216	0.143	0.078	0.211
No. of Cases	137940	9216	11749	160518
-2 Log likelihood	156253.81	8206.712	9504.558	175937.4
Nagelkerke R Square	0.039	0.05	0.069	0.04

Source: Computed from RCH-RHS data File.

Note: RC: Reference Category
Significance at **p<0.01, *p<0.05

NA: Not Applicable since the number of women sterilised with one child is small

the southern region. The prevalence of contraceptive morbidity is found to be significantly lower among urban women than rural women. Muslim women and others face higher risk of contraceptive morbidity than the Hindu women. Scheduled caste women and women of Other Backward Caste are more likely to report morbidity, while scheduled tribes are less likely to report morbidity than women of other higher castes.

Women living in semi-pucca and pucca houses are significantly less likely to report morbidity due to the use of any modern method of contraception than those living in Kuchcha houses. Women of higher age groups of 35+ years are less likely to report contraceptive morbidity than those in the child bearing ages of 25-29 years. Women with higher education are less likely but those with lesser years of schooling are more likely to face contraceptive morbidity than illiterate women. The probability of reporting morbidity rises with parity. Pregnancy wastage and motivation by public health workers are positively and significantly related with contraceptive morbidity. However, women who avail services from private health facilities were significantly less likely to report contraceptive morbidity than those obtaining it from public health sector. Probability of women who were informed about the side effects from a health worker are more likely to report health related problems than those who were not. For follow up service the results are not coming significant, meaning there seems no association between follow up service given to users of contraception with the related contraceptive morbidity.

The scenario seems similar for other modern methods. For women sterilised, those living in the northern, eastern and western regions are more likely to report contraceptive morbidity than the women of the southern region. Women of central region are significantly less likely to report morbidity than women of southern region. Urban women living in pucca houses have lesser probability of reporting the contraceptive morbidity than the reference category. The odds of reporting the health problems and side effects among the sterilized women who are Muslim or followers of other religions are significantly higher than Hindu women. Scheduled caste women are more likely to report morbidity while scheduled tribe women are less likely to report of any morbidity among women sterilized than other higher caste women. Women both in the younger age groups

of 15-24 years and higher age group of 35+ years are less likely to report morbidity than those in their prime child bearing ages of 25-29 years. Women with higher education are less likely but those with lesser years of schooling are more likely to face contraceptive morbidity than illiterate women. Contraceptive morbidity increases with parity. Women with pregnancy wastage, who were motivated by government health workers and were informed about the side effects, are more likely to report morbidity than their reference category. But those sterlised women who availed services from private health facilities are less likely to report morbidity.

The IUD users from eastern region are more likely to report morbidity than women of southern region. Muslim women are more likely to report morbidity than Hindu women. The odds of reporting morbidity is higher among Scheduled caste and Other Backward Caste than women of other higher castes. Adolescent women are less likely to report the side effects with the use of IUD than women in prime child bearing years of 25-29 years. Educated women are more likely to report the symptoms of morbidity due to the IUD user than who are illiterate. Higher parity women are more likely to report morbidity. Women with pregnancy wastage, who were motivated by government health personnel and were informed of the side effects, are more likely to report the morbidity than who were not. On the other hand women who went to private health facilitations are less likely to report the morbidity due to IUD use. Follow up visits by the health worker after the IUD insertions has no significant effect on the contraceptive morbidity reported.

Pill users in all the other regions are more likely to report the morbidity due to pill use than women of southern region. Muslim women, Scheduled caste women are more likely to report morbidity due to the Pill use. Women living in pucca houses, who are in higher age groups are less likely but in younger age group are more likely to report morbidity than the reference category. Likewise, women with pregnancy, who were motivated by government health personnel and were informed of the side effects, are more likely to report the morbidity than others. Place of residence, source of the method and follow up services do not have any significant effects on health related problems among the pill users.

6.2 MULTINOMIAL LOGISTIC REGRESSION FOR TREATMENT SOUGHT FOR CONTRACEPTIVE MORBIDITY

Table 6.2.1 shows the results of treatment sought for the contraceptive morbidity due to the use of any modern method of contraception among women who reported of the health related problems. Results show that women of the northern, central, eastern and north eastern regions are less likely to seek care from both public and private health sector than women living in the southern region. But women of the western region are less likely to seek treatment from public health sector than women of southern region. Women in urban area, Muslim women are more likely to seek treatment from public health sector than the reference category. Scheduled tribe women are less likely to seek care from either (public and private health sector) whereas Scheduled caste women are less likely to seek care from public health sector for the contraceptive morbidity. Women living in both Pucca and semi pucca houses are more likely to seek care from both public and private health sector than women living in kuchcha houses (that is, generally from low standard of living). Older women are more likely to seek treatment from both public and private health sector but those in younger age group of 15-24 years are less likely to seek treatment from both public and private health sector than women in prime childbearing age of 25-29 years. Similarly, likelihood of seeking treatment increases with educational level of the women. Women with higher parity are less likely to seek treatment from public health sector. Women with pregnancy wastage, who availed services from private sector, are more likely to seek treatment from private health sector but less likely to seek more public health sector. Women who were motivated by the government health personnel, were informed of the side effect and had the follow up visits from the health personnel are more likely to seek treatment from public health sector and up to some extent from private health sector.

Also, it was seen that women who used any modern method from any region are less likely to seek care from doctor than women living in the southern region. Also, women from the western region were less likely to seek treatment from a nurse than women of the southern region. Urban women living in pucca houses and were in late adolescent age

Table 6.2.1 Multinomial Logistic Regression Results for Any Modern Method users who sought Treatment for Contraceptive Morbidity on Background Characteristics, India, RCH-RHS, 1998-99

Background Characteristics of Users	Treatment Received			
	From Pvt. Sector/No Treatment	From Public Sector/No Treatment	Nurse/No Treatment	Doctor/No Treatment
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Region				
South (RC)	.	.	.	.
North	0.387**	0.618**	0.825	0.468**
Central	0.711**	0.627**	1.114	0.651**
East	0.858**	0.493**	0.767**	0.691**
West	0.946	0.7**	1.093	0.822**
N-E States	0.26**	0.803*	0.707	0.449**
Place of Residence				
Rural (RC)	.	.	.	.
Urban	1.03	1.331**	0.565	1.174**
Religion				
Hindu (RC)	.	.	.	.
Muslim	1.006	1.225**	1.126	1.088*
Others	1.098	0.999	1.361**	1.032
Caste				
Others (RC)	.	.	.	.
SC	0.908**	1.039	1.134	0.948
ST	0.637**	0.88*	0.776*	0.734**
OBC	0.971	1.037	1.128	0.987
Standard of Living (Type of Household)				
Kachcha (RC)	.	.	.	.
Semi-Pucca	1.159**	1.115**	1.028	1.152**
Pucca	1.38**	1.118**	1.006	1.29**
Age of Women				
25-29 (RC)	.	.	.	.
15-24	0.749**	0.742**	0.942	0.732**
30-34	1.226**	1.131**	0.885	1.212**
35+	1.292**	1.193**	0.724**	1.297**
Educational Level of Women				
No Schooling (RC)	.	.	.	.
1-5 Years	1.166**	1.083*	1.015	1.14**
6-10 Years	1.118**	1.115**	1.024	1.12**
>11 Years	1.264**	0.937	0.789	1.148*
Parity				
2 (RC)	.	.	.	.
1	0.866	0.95	1.87	0.85*
3	1.057	0.976	1.116	1.016
4+	0.983	0.871**	1.024	0.932*

Cont...

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Background Characteristics of Users	Treatment Received			
	From Pvt. Sector/No Treatment	From Public Sector/No Treatment	Nurse/No Treatment	Doctor/No Treatment
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Pregnancy Wastage				
No (RC)	.	.	.	.
Yes	1.114**	1.01	1.047	1.075*
Contraceptive Motivator				
Others (RC)	.	.	.	.
ANM/Doctor/Health Worker	0.991	1.129**	1.812	1
Source of Method				
Public health Sector (RC)	.	.	.	.
Private health Sector	1.527**	0.258**	0.748**	0.957
Health worker Informed about Side Effects				
No (RC)	.	.	.	.
Yes	1.106**	1.18**	1.13	1.141**
Follow up Service				
No (RC)	.	.	.	.
Yes	1.16**	1.29**	2.861**	1.134**
No. of Cases	36316		36316	
-2log likelihood	52852.88		39466.28	
Nagelkerke R Square	0.104		0.064	

Source: Computed from RCH-RHS Data File.
Note: RC: Reference Category
Significance at **p<0.01, *p<0.05
NA: Not Applicable

groups were more likely to seek treatment from doctors. Scheduled tribe women were less likely to seek treatment from either doctor or nurse than other higher caste women. Tendency to seek treat from doctors improved with educational level. But women with highest and lowest parity were least likely to seek treatment from a doctor. Women with pregnancy wastage, who were informed of the side effect and had the follow up visits from health personnel, are more likely to seek treatment from doctor.

Treatment seeking behavior is similar for sterlised women (Table 6.2.2). Women living in other region except the north-east are less likely to seek care from public health sector but women of other regions except the western and eastern region are less likely to seek treatment from private health sector than women of the southern region. Women in urban area are more likely to seek treatment from public health sector for morbidity. Muslim women and women of other faith, living in pucca houses and had early years of schooling were more likely to seek treatment from both public and private health sector. Both Scheduled Caste and Scheduled tribe women are less likely to seek care from private health sector than women of other higher caste. The odds of women in late adolescence are more but less for women of younger age group of 15-24 years to seek treatment from both public and private health sector than women of prime childbearing age of 25-29 years. Women with higher parity were less likely to seek treatment from both public and private health sector. Women with pregnancy wastage are more likely to seek treatment from private health sector. Women who were motivated by the government health personnel are more likely to seek treatment from public health facility. Women who were sterlised at private health centre were more likely to seek treatment from private health sector and less likely to seek more public health sector. Women who were informed of the side effect and had the follow up visits from the health personnel were more likely to seek treatment from both public and private health sector.

Sterilised women of any other region are less likely to seek care from both doctor and nurse than women living in the southern region. Urban women are more likely to seek treatment from doctors but less likely to seek treatment from nurse than rural women. Muslim women, living in pucca houses, who are in late adolescent years, with prior years

Table 6.2.2 Multinomial Logistic Regression Results for women sterlised who sought Treatment for Contraceptive Morbidity on Background Characteristics, India, RCH-RHS, 1998-99

Background Characteristics of Users	Treatment Received			
	From Pvt. Sector/No Treatment	From Public Sector/No Treatment	Nurse/No Treatment	Doctor/No Treatment
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Region				
South (RC)	.	.	.	.
North	0.378**	0.56**	0.62**	0.453**
Central	0.801**	0.642**	1.007	0.713**
East	0.981	0.53**	0.761**	0.77**
West	0.978	0.696**	1.058	0.838**
N-E States	0.322*	0.855	0.449	0.56**
Place of Residence				
Rural (RC)	.	.	.	.
Urban	1.016	1.323**	0.563**	1.159**
Religion				
Hindu (RC)	.	.	.	.
Muslim	1.161**	1.33**	1.104	1.233**
Others	1.161*	1.0**	1.243	1.092
Caste				
Others (RC)	.	.	.	.
SC	0.888**	1.015	1.244*	0.923*
ST	0.632**	0.89	0.847	0.73**
OBC	0.947	1.033	1.188*	0.97
Standard of Living (Type of Household)				
Kachcha (RC)	.	.	.	.
Semi-Pucca	1.164**	1.124**	0.992	1.16**
Pucca	1.338**	1.094*	0.988	1.25**
Age of Women				
25-29 (RC)	.	.	.	.
15-24	0.847**	0.825**	1.05	0.822**
30-34	1.23**	1.136**	0.937	1.209**
35+	1.261**	1.21**	0.786**	1.274**
Educational Level of Women				
No Schooling (RC)	.	.	.	.
1-5 Years	1.223**	1.112*	1.017	1.185**
6-10 Years	1.17**	1.128**	0.946	1.162**
>11 Years	1.002	0.738**	0.609*	0.907
Parity				
2 (RC)	.	.	.	.
1	NA	NA	NA	NA
3	0.985	0.952	1.165	0.961
4+	0.918*	0.86**	1.1	0.884**

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Background Characteristics of Users	Treatment Received			
	From Pvt. Sector/No Treatment	From Public Sector/No Treatment	Nurse/No Treatment	Doctor/No Treatment
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Pregnancy Wastage				
No (RC)	.	.	.	.
Yes	1.12**	1.055	1.128	1.091
Contraceptive Motivator				
Others (RC)	.	.	.	.
ANM/Doctor/Health Worker	1.016	1.128**	1.804	1.018
Source of Method				
Public health Sector (RC)	.	.	.	.
Private health Sector	1.886**	0.316**	1.042	1.188**
Health worker Informed about Side Effects				
No (RC)	.	.	.	.
Yes	1.066*	1.107**	0.91	1.097**
Follow up Service				
No (RC)	.	.	.	.
Yes	1.145**	1.315**	3.236*	1.135**
No. of Cases	32594		32594	
-2log likelihood'	46561.081		33759.47	
Nagelkerke R Square	0.094		0.061	

Source: Computed from RCH-RHS Data File.
Note: RC: Reference Category
Significance at **p<0.01, *p<0.05
NA: Not Applicable

of schooling are more likely to seek treatment from doctors. Scheduled Caste women and Other Backward Caste are more likely to get treated by a nurse than a doctor; whereas Scheduled tribe women were less likely to seek treatment from a doctor than other higher caste women. Women with higher parity were less likely to seek treatment from a doctor. Women who had obtained the method from the private health centre and were informed about the side effects are more likely to seek treatment from doctor. Follow up visits are also highly significantly related with getting treatment from nurse.

Among IUD users (Table 6.2.3) women of the northern region are more likely to seek treatment from public health sector but that of the western region are less likely to seek treatment from private health sector than women of southern region. Muslim women, Scheduled Caste women are more likely to seek care from public health facility. IUD users living in Pucca houses and women with higher educational levels (broadly those with high social or economic status) were more likely to seek care from private health sector. Women in younger age group of 15-24 years are less likely to seek treatment from public health sector than women in prime child bearing age of 25-29 years. Women with one child are more likely to seek treatment from both public and private health sector. Women with pregnancy wastage are less likely to seek treatment from public health sector. Women who availed services from private health centre were more likely to seek treatment from private health sector and less likely to seek care from public health sector. Women who were informed of the side effect are more likely treatment from public health sector. Follow up service, place of residence and contraceptive motivator did not show any association with the treatment seeking behavior of the women.

IUD users of north regions are more likely to seek care from nurse but women of eastern regions are less likely to seek care from doctor than women living in southern region. Urban women, Muslim women, scheduled caste women, those living in pucca houses, with higher education were more likely to seek treatment from doctors. Women in younger age group of 15-24 years are less likely to seek treatment from both doctor and nurse than women in prime childbearing age of 25-29 years. Women with one child were more likely to go to nurse for treatment whereas women with pregnancy wastage were

Table 6.2.3 Multinomial Logistic Regression Results for IUD users who sought Treatment for Contraceptive Morbidity on Background Characteristics , India, RCH-RHS, 1998-99

Background Characteristics of Users	Treatment Received			
	From Pvt. Sector/No Treatment	From Public Sector/No Treatment	Nurse/No Treatment	Doctor/No Treatment
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Region				
South (RC)	.	.	.	.
North	0.883	2.602**	1.977**	1.317
Central	0.715	1.145	1.997	0.17
East	0.701	0.64	0.964	.61*
West	.675*	0.991	1.437	0.715
N-E States	0.56	0.857	0.388	0.783
Place of Residence				
Rural (RC)	.	.	.	.
Urban	1.06	1.271	0.373	1.376**
Religion				
Hindu (RC)	.	.	.	.
Muslim	1.108	1.697**	0.908	1.441*
Others	.559**	0.777	1.08	.591**
Caste				
Others (RC)	.	.	.	.
SC	1.063	1.741*	0.78	1.572*
ST	1.407	1.342	1.163	1.397
OBC	0.945	0.838	0.895	0.925
Standard of Living (Type of Household)				
Kachcha (RC)	.	.	.	.
Semi-Pucca	1.518	1.134	0.886	1.504*
Pucca	2.144**	1.209	0.697	2.067**
Age of Women				
25-29 (RC)	.	.	.	.
15-24	0.875	.451**	.538*	.676*
30-34	1.207	1.194	0.798	1.282
35+	1.173	0.739	0.669	1.027
Educational Level of Women				
No Schooling (RC)	.	.	.	.
1-5 Years	0.861	1.213	1.341	0.96
6-10 Years	1.212	0.87	0.78	1.071
>11 Years	2.391**	0.951	0.549	1.801**
Parity				
2 (RC)	.	.	.	.
1	1.836**	2.001**	3.248**	1.744
3	1.164	1.193	1.622	1.074
4+	1.692*	1.099	1.35	1.386

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Background Characteristics of Users	Treatment Received			
	From Pvt. Sector/No Treatment	From Public Sector/No Treatment	Nurse/No Treatment	Doctor/No Treatment
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Pregnancy Wastage				
No (RC)	.	.	.	.
Yes	0.985	.525**	0.772	.749*
Contraceptive Motivator				
Others (RC)	.	.	.	.
ANM/Doctor/Health Worker	1.203	1.203	1.128	1.2
Source of Method				
Public health Sector (RC)	.	.	.	.
Private health Sector	3.353**	.218**	.504**	1.322*
Health worker Informed about Side Effects				
No (RC)	.	.	.	.
Yes	1.052	1.636**	1.795**	1.19
Follow up Service				
No (RC)	.	.	.	.
Yes	1.216	1.165	1.895**	1.016
No. of Cases	1609		1609	
-2log likelihood	2886.598		2617.606	
Nagelkerke R Square	0.336		0.202	

Source: Computed from RCH-RHS Data File.
Note: RC: Reference Category
Significance at **p<0.01, *p<0.05
NA: Not Applicable

more likely to seek treatment from doctor. Women who availed services from the private health centre are more likely to seek treatment from doctor and less likely from nurse. Women who were informed of the side effect and had the follow up visits from the health personnel are more likely to seek treatment from nurse.

Table 6.2.4 shows the multivariate results for pill users. Women of the northern region were less likely to go to public health facility for treatment than the southern region women. Urban women, Muslim women, those living in pucca houses with pregnancy wastage were more likely to seek treatment from private health facility. Scheduled Caste women and Other Backward Caste women were more likely to go for public health care facility than other higher caste women. Women in younger age groups were less likely to go for treatment to private health facility. Women who were motivated by the government health personnel are more likely to seek treatment from public health facility. Women who availed services from private health centre were more likely to seek treatment from private health sector and less likely to seek more public health sector. Women who were informed of the side effect are more likely to seek treatment from both public and private health sector. No significant effect is seen of educational level of women, parity and follow up service.

Pill users of the north-eastern and northern regions are more likely to seek care from nurse than women living in southern region. Urban women, Muslim women, those living in Pucca houses, with pregnancy wastage are more likely to seek care from doctor. Scheduled tribe women were less likely to seek treatment from doctor than other higher caste women. Younger women are less likely to seek treatment from doctor than women in their prime childbearing age of 25-29 years. Women who were motivated by the government health personnel and availed services from the private health centre are more likely to seek treatment from doctor and less likely from nurse. Women who were informed of the side effects and had the follow up visits from the health personnel are more likely to seek treatment from both doctor and nurse.

Table 6.2.4 Multinomial Logistic Regression Results for Pill users who sought treatment for Contraceptive Morbidity on Background Characteristics, India, RCH-RHS, 1998-99

Background Characteristics of Users	Treatment Received			
	From Pvt. Sector/No Treatment	From Public Sector/No Treatment	Nurse/No Treatment	Doctor/No Treatment
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Region				
South (RC)	.	.	.	.
North	1.110	3.133	11.563*	1.249
Central	0.562	0.965	1.068	0.581
East	0.825	0.681	5.827	0.686
West	1.333	0.832	1.721	1.141
N-E States	0.375*	2.342	9.023*	0.619
Place of Residence				
Rural (RC)	.	.	.	.
Urban	1.29**	1.093	0.819	1.291*
Religion				
Hindu (RC)	.	.	.	.
Muslim	1.374*	1.024	0.823	1.344*
Others	1.366	0.78	2.995	1.04
Caste				
Others (RC)	.	.	.	.
SC	0.938	1.739*	1.206	1.096
ST	0.542	0.53	0.494	0.507*
OBC	0.967	1.621*	1.588	1.053
Standard of Living (Type of Household)				
Kachcha (RC)	.	.	.	.
Semi-Pucca	1.257	1.009	1.582	1.165
Pucca	1.607**	1.071	1.495	1.424*
Age of Women				
25-29 (RC)	.	.	.	.
15-24	0.697*	0.643	1.117	0.662**
30-34	1.053	1.424	1.027	1.097
35+	1.05	1.487	1.316	1.115
Educational Level of Women				
No Schooling (RC)	.	.	.	.
1-5 Years	0.975	0.61	0.408	0.958
6-10 Years	0.984	1.53	0.782	1.156
>11 Years	1.283	0.872	0.184	1.34
Parity				
2 (RC)	.	.	.	.
1	1.24	0.524	0.828	1.046
3	1.286	0.827	0.812	1.176
4+	1.267	0.702	0.744	1.139

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Background Characteristics of Users	Treatment Received			
	From Pvt. Sector/No Treatment	From Public Sector/No Treatment	Nurse/No Treatment	Doctor/No Treatment
	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Pregnancy Wastage				
No (RC)	.	.	.	.
Yes	1.628**	0.715	0.37	1.476**
Contraceptive Motivator				
Others (RC)	.	.	.	.
ANM/Doctor/Health Worker	1.246	1.849**	2.9**	1.269
Source of Method				
Public health Sector (RC)	.	.	.	.
Private health Sector	1.81**	0.46**	0.215**	1.423**
Health worker Informed about Side Effects				
No (RC)	.	.	.	.
Yes	1.889**	2.486**	4.947**	1.883**
Follow up Service				
No (RC)	.	.	.	.
Yes	1.339	1.336	3.565**	1.102
No. of Cases	1826		1826	
-2log likelihood	2671.1		2369.937	
Nagelkerke R Square	0.225		0.206	

Source: Computed from RCH-RHS Data File.
Note: RC: Reference Category
Significance at **p<0.01, *p<0.05
NA: Not Applicable

Overall, it was found that urban women, Muslim women, living in pucca houses, with higher educational level with higher parity and pregnancy wastage went more for public health facility and that too from a doctor than a nurse. Women with government health personnel as motivators, who had informed of the side effects and had the follow up visits from the health personnel were more likely to seek treatment from public health care and from a doctor than a nurse.

Chapter 7

Conclusions

CHAPTER 7

CONCLUSIONS

The issue of reproduction is central to women's life. Since ancient time woman have known ways to prevent childbirth or unwanted pregnancy. Contraception and abortion are not new concepts. Earlier abstinence, withdrawal and other traditional methods were used for birth control. Advances in science and availability of modern contraceptive methods in the early nineteenth century gave people more opportunity to restrict their reproductive goals. Reversible methods helped people in spacing the births and therefore gave women's body more time to prepare for the next birth. Women have been regarded in all cultures as the nurtures of the future civilisations. They in most cultures alone face the aggravations of childbearing. In developing countries the reproductive lives of women and their sexuality are often under the control of the deep rooted cultural values and norms. Taboos and various types of restriction are placed on her sexual behavior.

In the background of this scenario, women of developing world are given a limited choice to restrict or avoid an unwanted pregnancy. Family planning research and programmes have traditionally been focusing on women's health. In India, the family planning programme promotes the usage of safe contraceptive methods in restricting one's family size. The contraceptive methods available to couples are sterlisation, IUDs, pill and condom. Sterlisation is the most preferred option of couples (70.0 percent) to avoid future pregnancies. Other methods of contraception even though widely used in other developed nations were not preferred in India (2.0 percent). Such a deviant gap in the choice of contraceptive method among couples of developed and developing nation was due to a number of important factors. Demographic goals of each individual nation are different. During 1950s when there was population boom in India, the government of India had a major objective to control the birth rate. Sterlisation was promoted and the health workers were given incentive to promote the same. Other reversible methods like IUD, pills were not eagerly introduced into the array of choice provided to the couples. Other than this woman's desire to choose a method was out of question. In India, socio-economic factors largely control the couple's sexual behavior. It is the elders in the family who decide about the family size and the method use is often in the hands of the husband. Accessibility and

affordability of the method also is an important determinant in decision making process of the couples. Another important determinant is the policy factor which indirectly affects the women's health. Quality of care provided in the government hospitals is important for the future continuation of the method. In the present study, the focus was on analyzing the factors affecting contraceptive morbidity and the attitude of the women in seeking treatment for the health problems/side effects experienced by them.

Results show that awareness of contraceptive methods is universal in India but only forty nine percent contraceptive prevalence rate is seen. Female sterlisartion, Pill and IUD are the most preferred methods. Contraceptive morbidity due to any of these methods of contraception is twenty percent. Among women with contraceptive morbidity sixty three percent sought treatment. Within each method, 20.7 percent sterlised women had health problem and 64.7 percent of them sought treatment. For pill users, 16.3 percent had health problem but only 40.5 percent of them sought treatment. Most common health problems/side effects reported by them were bodyache/backache, weakness/inability to work, dizziness, menstrual problems etc. For women who sought treatment, marginally larger number of women went to private health sector for the treatment and preferred treatment from doctor than from a nurse. A minuscule section (2.8 percent) sought treatment from other sources like trained/untrained dai, self treatment etc. Other than Delhi, Sikkim, Arunachal Pradesh and Jammu & Kashmir, all states reported more than 15 percent contraceptive morbidity prevalent. Maximum morbidity of more than 20 percent was reported in Bihar, Goa, Gujarat, Himachal Pradesh, Meghalaya, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura and West Bengal. Remaining states had 15 percent to 20 percent morbidity reported. Less than 55 percent sought treatment for the health problems in Arunachal Pradesh, Assam, Manipur, Rajasthan, Sikkim and Tripura. More than 65 percent women sought treatment in Andhra Pradesh, Goa, Jammu & Kashmir, Karnataka, Kerala, Maharastra, Meghalaya, Nagaland, Orissa, Tamil Nadu and Delhi.

Differentials in contraceptive morbidity and treatment seeking behavior show that overall region itself has its influence on contraceptive morbidity by the type of method used but within the method itself not much variation is found in the women reporting morbidity and who had sought treatment for the same. It is seen that women

of south region report low levels of morbidity but it is they who sought more treatment, whereas women of north eastern states are least likely to report any morbidity. Treatment seeking is also the lowest in the northeast. The contrasting nature of results from both the regions show that women of south region are more aware about their health problems and have easy and better access to health care services. Muslim women have reported more health related problems and are more likely to seek treatment from public heath facility. They are more likely to go to a doctor for treatment. Scheduled tribe women are least likely to seek treatment either from a doctor or a nurse. Women living in urban areas, with higher educational level are least likely to report any health problem but most likely to obtain treatment from private health facility and from doctor. Women's economic status and age are inversely related with the prevalence of contraceptive morbidity. Biological factors of parity, pregnancy wastage, source of method, and (for pill users) follow up service show significant association. Women with higher parity and pregnancy wastage show higher prevalence contraceptive morbidity rate. Contraceptive motivator, source of method, being informed about side effects and follow up service are important programme factors which affect the prevalence of contraceptive morbidity and treatment seeking behavior. Higher percentage of women reported morbidity, had health worker as the contraceptive motivator and they were also informed about the side effects but not much differences were found in their treatment seeking behavior. Women who had a follow up after the adoption of method had reported better treatment seeking tendency than otherwise. Female sterlisation was mostly adopted by southern states where there was a campaign in the early to mid 1970s for sterlisation (mass camps were set for female sterlisation) and they mostly sought treatment. Female sterilisation was the lowest in north and north eastern states. Similarly there were very few IUD users in north eastern states and most in northern region. Pill users were the lowest in central, east and northeastern states.

Regression results show the net effect of each factor on the contraceptive morbidity and treatment seeking behavior. Women residing in the north, east and west region are more likely to report morbidity than those residing in the southern region. However, women of central and north eastern regions are less likely to report any morbidity due to the use of any modern methods than those living in the southern region. Urban women, those living in pucca houses and in higher age groups are less

likely to report morbidity. Muslim women and others face higher risk of contraceptive morbidity than Hindu women. Scheduled caste women and women of Other Backward Caste are more likely to report morbidity, while scheduled tribes are less likely to report morbidity than women of other higher castes. Women with higher education are less likely but those with lesser years of schooling are more likely to face contraceptive morbidity than illiterate women. The probability of reporting morbidity rises with parity. Women with pregnancy wastage and those motivated by public health workers positively and significantly related with contraceptive morbidity. However, women who avail services from private health facilities were significantly less likely to report contraceptive morbidity than those obtaining it from public health sector. Probability of women who were informed about the side effects from a health worker are more likely to report health related problems than those who were not. Follow up service did not show any association with contraceptive morbidity.

Similarly, regression results for treatment seeking show that women of the northern, central, eastern and north eastern regions are less likely to seek care from both public and private health sector than women living in the southern region. But women of the west region are less likely to seek treatment from public health sector than women of southern region. Urban women and Muslim women are more likely to seek treatment from public health sector than the reference category. Scheduled tribe women are less likely to seek care from either (public and private health sector) whereas Scheduled caste women are less likely to seek care from public health sector for the contraceptive morbidity. Women living in both Pucca houses (with high standard of living), older women are more likely to seek care from both (public and private health sector) than women living in kuchcha houses. Likelihood of seeking treatment from public health sector more for women with lower educational level. Women with higher parity are less likely to seek treatment from public health sector. Women with pregnancy wastage, who availed services from private sector, are more likely to seek treatment from private health sector but less likely to seek more public health sector. Women who were motivated by the government health personnel, were informed of the side effect and had the follow up visits from the health personnel are more likely to seek treatment from public health sector and up to some extent from private health sector.

Also, it was seen that women who used any modern method from any region other than the southern are less likely to seek care from doctor than women living in southern region. Also women from western region were less likely to seek treatment from a nurse than women of southern region. Urban women living in pucca houses and those in late adolescence age groups were more likely to seek treatment from doctors. Scheduled tribe women were less likely to seek treatment from either doctor or nurse than other higher caste women. Tendency to seek treatment from doctors improved with educational level. But women with very high and low parity were least likely to seek treatment from a doctor. Women with pregnancy wastage, who were informed of the side effect, and had the follow up visits from health personnel, are more likely to seek treatment from doctor

Thus, we see that health facilities are effective only if women avail them. Attitude of health workers has important influence on contraceptive morbidity and their treatment seeking behavior. Often the complaints of the women are ignored, and harsh attitude of workers may discourage women to continue with the method. Access to the method both in terms of financial access and physical distance have important influence on the contraceptive morbidity and treatment sought. Unhygienic conditions during the surgery are the most common reason for higher prevalence of morbidity among sterlised women. IUD insertion by untrained personnel is more likely to cause morbidity among the IUD users than any other factors. Much problem occurs when the health personnel are not properly trained for the tasks which involve surgical procedure. Unavailability of doctors in the rural areas has lead to serious deterioration of health care facilities provided to women. Financial barriers, supply problem, shortage of trained personnel especially in rural areas, callous attitudes of the workers and their poor performance together contribute to high levels of contraceptive morbidity reported among Indian women.

Another factor responsible for the high prevalence of morbidity is the lack of proper counseling before the adoption of the method. Women's contraceptive needs differ. There is no single contraceptive that is suitable for all women irrespective of their age, health conditions and background. In India, the family planning methods available are based on the perceptions of the population planners and service providers rather than based on women's own perceived needs. So if a woman wants to

adopt a spacing method she is discouraged to do so. In hospitals, women with two children are often forced to adopt sterlisation and are also given incentives for it.

Another important factor in the treatment seeking behavior is the role of private health sector and its better performance than the government health facilities. The public sector is the primary source of family planning services in India. About four-fifths of women obtain modern contraceptive methods from government sources. Method availability, service quality, and ability to pay are the important factors which affect couples' decision to seek service. Rising education, urbanization and income have made the role of private health facilities more important. If the accessibility of government health facilities improves and government increases incentives and subsidies then the public health facilities will remain competitive with private sector. Otherwise, their importance would be undermined in near future. Regression results show that marginally more women avail private sector services because they have better reputation than public health facilities. Also government health, family planning infrastructure and services are noted to have serious problems in their approach. Public sector clinics offer poor counseling and follow up services which are important determinants for the continuation of the method. Family planning workers often do not have good interaction with the women, as a result fail to educate women fully about the advantages and disadvantages of adopting a method. Most importantly government programme are perceived as the primary provider of family planning services. So if a couple wants to adopt methods other than those provided in family planning programme they would approach a private health provider.

To conclude, we found that acceptance of family planning methods, prevalence of contraceptive morbidity and treatment seeking behavior of people is affected by several factors. In rural areas, ignorance and superstition, low levels of literacy, fears and inhibitions, lack of initiative on the part of the women on one hand and a failure to provide family planning services by the workers on the other, distances from the PHCs and sub-centers and non availability of contraceptive methods, are all relevant factors which hinder the awareness among the women about there reproductive health and their treatment seeking behavior.

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Appendix

APPENDIX

Detailed Results of Regression Analyses

Appendix Tables 1 to 12

Appendix Table 1

DETAILED RESULTS OF LOGISTIC REGRESSION ANALYSIS FOR ANY MODERN METHOD FOR CONTRACEPTIVE MORBIDITY IN INDIA

Socio-economic, demographic and programme variables	Reference Category	B	S.E.	Wald	df	Sig.	Exp(B)
Region	South			932.371	5	0.000	
North		0.081	0.022	14.036	1	0.000	1.084
Central		-0.092	0.02	20.38	1	0.000	0.912
East		0.442	0.018	588.077	1	0.000	1.556
West		0.138	0.018	56.303	1	0.000	1.148
N-E States		-0.129	0.046	7.795	1	0.005	0.879
Place of Residence	Rural						
Urban		-0.172	0.015	123.017	1	0.000	0.842
Religion	Hindu			128.519	2	0.000	
Muslim		0.244	0.022	125.18	1	0.000	1.277
Others		0.067	0.026	6.872	1	0.009	1.069
Caste	Others			124.54	3	0.000	
SC		0.156	0.017	79.986	1	0.000	1.168
ST		-0.107	0.027	16.237	1	0.000	0.899
OBC		0.035	0.015	5.459	1	0.019	1.035
Standard of Living	Kachcha			65.232	2	0.000	
Semi-Pucca		-0.064	0.015	17.49	1	0.000	0.938
Pucca		-0.141	0.017	65.158	1	0.000	0.869
Age of Women	25-29			147.297	3	0.000	
15-24		-0.004	0.024	0.027	1	0.869	0.996
30-34		-0.024	0.018	1.938	1	0.164	0.976
35+		-0.166	0.016	102.41	1	0.000	0.847
Educational Level of Women	No Schooling			164.104	3	0.000	
1-5 Years		0.057	0.017	10.735	1	0.001	1.059
6-10 Years		-0.112	0.016	46.014	1	0.000	0.894
>11 Years		-0.323	0.031	105.193	1	0.000	0.724
Parity	2			168.355	3	0.000	
1		-0.094	0.037	6.54	1	0.011	0.91
3		0.123	0.017	50.571	1	0.000	1.131
4+		0.212	0.018	144.007	1	0.000	1.236
Pregnancy Wastage	No						
Yes		0.498	0.016	1016.638	1	0.000	1.646
Contraceptive Motivator	Others						
ANM/Doctor/Health Worker		0.261	0.017	230.882	1	0.000	1.298
Source of Method	Public health Sector						
Private health Sector		-0.239	0.017	197.8	1	0.000	0.788
Health worker Informed about Side Effects	No						
Yes		0.114	0.014	70.504	1	0.000	1.121
Follow up Service	No						
Yes		0.019	0.015	1.678	1	0.195	1.019
Constant		-1.555	0.026	3546.802	1	0.000	0.211

No. of Cases 160518 -2log likelihood 175937.398 Nagelkerke R Square 0.04

Source: Computed from RCH-RHS Data File.

Appendix Table 2

DETAILED RESULTS OF LOGISTIC REGRESSION ANALYSIS FOR STERILISED WOMEN FOR CONTRACEPTIVE MORBIDITY IN INDIA

Socio-economic, demographic and programme variables	Reference Category	B	S.E.	Wald	df	Sig.	Exp(B)
Region	South			869.51	5	0.000	
North		0.109	0.023	22.52	1	0.000	1.115
Central		-0.071	0.022	10.926	1	0.001	0.931
East		0.473	0.019	600.702	1	0.000	1.605
West		0.144	0.019	56.598	1	0.000	1.155
N-E States		-0.042	0.058	0.513	1	0.474	0.959
Place of Residence	Rural						
Urban		-0.186	0.017	125.689	1	0.000	0.83
Religion	Hindu			75.404	2	0.000	
Muslim		0.21	0.025	71.74	1	0.000	1.233
Others		0.068	0.028	6.039	1	0.014	1.07
Caste	Others			111.642	3	0.000	
SC		0.152	0.018	68.85	1	0.000	1.164
ST		-0.108	0.028	15.258	1	0.000	0.897
OBC		0.024	0.016	2.325	1	0.127	1.024
Standard of Living	Kachcha			56.185	2	0.000	
Semi-Pucca		-0.068	0.016	17.794	1	0.000	0.934
Pucca		-0.138	0.018	56.132	1	0.000	0.871
Age of Women	25-29			126.989	3	0.000	
15-24		-0.057	0.029	3.951	1	0.047	0.945
30-34		-0.024	0.019	1.637	1	0.201	0.976
35+		-0.165	0.017	89.738	1	0.000	0.847
Educational Level of Women	No Schooling			185.027	3	0.000	
1-5 Years		0.062	0.018	11.402	1	0.001	1.064
6-10 Years		-0.127	0.018	52.212	1	0.000	0.881
>11 Years		-0.413	0.038	118.288	1	0.000	0.662
Parity	2			120.056	2	0.000	
4+		0.122	0.018	44.976	1	0.000	1.13
3		0.204	0.019	119.653	1	0.000	1.226
Pregnancy Wastage	No						
Yes		0.5	0.017	882.973	1	0.000	1.649
Contraceptive Motivator	Others						
ANM/Doctor/Health Worker		0.277	0.019	218.551	1	0.000	1.32
Source of Method	Public health Sector						
Private health Sector		-0.174	0.02	73.789	1	0.000	0.841
Health worker Informed about Side Effects	No						
Yes		0.09	0.014	39.199	1	0.000	1.095
Follow up Service	No						
Yes		0.016	0.015	1.131	1	0.288	1.016
Constant		-1.534	0.028	3102.359	1	0.000	0.216

No. of Cases 137940 -2log likelihood 156253.81 Nagelkerke R Square .039

Source: Computed from RCH-RHS Data File.

Appendix Table 3

DETAILED RESULTS OF LOGISTIC REGRESSION ANALYSIS FOR IUD USERS FOR CONTRACEPTIVE MORBIDITY IN INDIA

Socio-economic, demographic and programme variables	Reference Category	B	S.E.	Wald	df	Sig.	Exp(B)
Region	South			13.177	5	0.022	
North		0.008	0.093	0.008	1	0.929	1.008
Central		-0.167	0.105	2.545	1	0.111	0.846
East		0.256	0.115	4.983	1	0.026	1.292
West		0.013	0.085	0.023	1	0.881	1.013
N-E States		-0.152	0.168	0.822	1	0.365	0.859
Place of Residence	Rural						
Urban		-0.02	0.064	0.098	1	0.755	0.98
Religion	Hindu			49.326	2	0.000	
Muslim		0.585	0.083	49.281	1	0.000	1.795
Others		0.063	0.091	0.483	1	0.487	1.065
Caste	Others			9.583	3	0.022	
SC		0.274	0.104	6.968	1	0.008	1.315
ST		-0.052	0.175	0.089	1	0.765	0.949
OBC		0.141	0.069	4.215	1	0.040	1.152
Standard of Living	Kachcha			6.856	2	0.032	
Semi-Pucca		0.105	0.101	1.073	1	0.300	1.111
Pucca		-0.067	0.106	0.396	1	0.529	0.936
Age of Women	25-29			61.988	3	0.000	
15-24		0.109	0.077	2.002	1	0.157	1.115
30-34		-0.201	0.077	6.782	1	0.009	0.818
35+		-0.668	0.093	52.127	1	0.000	0.513
Educational Level of Women	No Schooling			7.5	3	0.058	
1-5 Years		0.072	0.107	0.453	1	0.501	1.075
6-10 Years		0.208	0.088	5.625	1	0.018	1.231
>11 Years		0.082	0.103	0.634	1	0.426	1.085
Parity	2			11.931	3	0.008	
1		-0.045	0.076	0.348	1	0.555	0.956
3		0.112	0.086	1.705	1	0.192	1.119
4+		0.317	0.097	10.74	1	0.001	1.373
Pregnancy Wastage	No						
Yes		0.495	0.066	55.971	1	0.000	1.64
Contraceptive Motivator	Others						
ANM/Doctor/Health Worker		0.262	0.068	14.839	1	0.000	1.299
Source of Method	Public health Sector						
Private health Sector		-0.172	0.06	8.259	1	0.004	0.842
Health worker Informed about Side Effects	No						
Yes		0.251	0.059	18.427	1	0.000	1.286
Follow up Service	No						
Yes		0.091	0.079	1.338	1	0.247	1.096
Constant		-1.946	0.151	165.646	1	0.000	0.143

No. of Cases 9216 -2log likelihood 8206.712 Nagelkerke R Square .054

Source: Computed from RCH-RHS Data File.

Appendix Table 4

DETAILED RESULTS OF LOGISTIC REGRESSION ANALYSIS FOR PILL USERS FOR CONTRACEPTIVE MORBIDITY IN INDIA

Socio-economic, demographic and programme variables	Reference Category	B	S.E.	Wald	df	Sig.	Exp(B)
Region	South			72.05	5	0.000	
North		0.419	0.185	5.144	1	0.023	1.52
Central		0.447	0.177	6.371	1	0.012	1.564
East		0.882	0.169	27.365	1	0.000	2.415
West		0.4	0.181	4.876	1	0.027	1.491
N-E States		0.436	0.186	5.513	1	0.019	1.547
Place of Residence	Rural						
Urban		-0.053	0.065	0.67	1	0.413	0.948
Religion	Hindu			60.709	2	0.000	
Muslim		0.519	0.067	59.801	1	0.000	1.68
Others		0.219	0.133	2.716	1	0.099	1.244
Caste	Others			7.952	3	0.047	
SC		0.167	0.078	4.564	1	0.033	1.181
ST		-0.147	0.125	1.378	1	0.240	0.863
OBC		-0.027	0.075	0.127	1	0.722	0.974
Standard of Living	Kachcha			5.385	2	0.068	
Semi-Pucca		-0.062	0.069	0.786	1	0.375	0.94
Pucca		-0.182	0.079	5.269	1	0.022	0.834
Age of Women	25-29			28.458	3	0.000	
15-24		0.243	0.075	10.54	1	0.001	1.275
30-34		0.001	0.076	0	1	0.987	1.001
35+		-0.262	0.085	9.473	1	0.002	0.769
Educational Level of Women	No Schooling			9.658	3	0.022	
1-5 Years		0.158	0.075	4.476	1	0.034	1.171
6-10 Years		-0.011	0.072	0.025	1	0.875	0.989
>11 Years		-0.181	0.117	2.395	1	0.122	0.835
Parity	2			12.042	3	0.007	
1		-0.215	0.08	7.202	1	0.007	0.806
3		-0.011	0.081	0.018	1	0.895	0.989
4+		0.129	0.083	2.427	1	0.119	1.137
Pregnancy Wastage	No						
Yes		0.55	0.062	79.709	1	0.000	1.732
Contraceptive Motivator	Others						
ANM/Doctor/Health Worker		0.179	0.064	7.74	1	0.005	1.196
Source of Method	Public health Sector						
Private health Sector		-0.092	0.067	1.878	1	0.171	0.912
Health worker Informed about Side Effects	No						
Yes		0.394	0.063	38.954	1	0.000	1.484
Follow up Service	No						
Yes		-0.046	0.095	0.231	1	0.631	0.955
Constant		-2.548	0.198	164.859	1	0.000	0.078

No. of Cases 11749 -2log likelihood 175937.398 Nagelkerke R Square .069

Source: Computed from RCH-RHS Data File.

Appendix Table 5

DETAILED RESULTS OF MULTINOMIAL LOGISTIC REGRESSION ANALYSIS FOR ANY MODERN METHOD USERS WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY IN INDIA

Treatment Received From	Socio-economic, demographic and programme variables	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Private Health Sector	Intercept	-0.291	0.055	28.336	1	0.000			
	N-E States	-1.35E+00	0.117	133.152	1	0.000	0.26	0.207	0.327
	West	-5.57E-02	0.039	2.072	1	0.150	0.946	0.877	1.02
	East	-0.153	0.037	16.851	1	0.000	0.858	0.797	0.923
	Central	-0.341	0.043	63.251	1	0.000	0.711	0.654	0.773
	North	-0.949	0.048	393.797	1	0.000	0.387	0.353	0.425
	South	0.00E+00	.	.	0	.	.	.	.
	Urban	2.97E-02	0.033	0.817	1	0.366	1.03	0.966	1.099
	Rural	0.00E+00	.	.	0	.	.	.	.
	Others	9.37E-02	0.055	2.933	1	0.087	1.098	0.987	1.222
	Muslim	6.44E-03	0.044	0.021	1	0.885	1.006	0.923	1.098
	Hindu	0.00E+00	.	.	0	.	.	.	.
	OBC	-2.97E-02	0.031	0.911	1	0.340	0.971	0.913	1.032
	ST	-4.51E-01	0.057	61.61	1	0.000	0.637	0.569	0.713
	SC	-9.65E-02	0.036	7.284	1	0.007	0.908	0.847	0.974
	Others	0	.	.	0	.	.	.	.
	Pucca	0.322	0.036	78.164	1	0.000	1.38	1.285	1.482
	Semi Pucca	0.147	0.032	21.207	1	0.000	1.159	1.088	1.234
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.256	0.034	55.364	1	0.000	1.292	1.207	1.382
	30-34	0.204	0.036	31.384	1	0.000	1.226	1.142	1.316
	15-24	-0.289	0.05	32.911	1	0.000	0.749	0.678	0.827
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	0.235	0.067	12.361	1	0.000	1.264	1.109	1.441
	6-10 yrs	0.112	0.035	10.396	1	0.001	1.118	1.045	1.196
	1-5 yrs	0.154	0.036	18.464	1	0.000	1.166	1.087	1.251
	No Schooling	0.00E+00	.	.	0	.	.	.	.
	4+	-1.68E-02	0.037	0.208	1	0.649	0.983	0.915	1.057
	3	5.52E-02	0.036	2.307	1	0.129	1.057	0.984	1.135
	1	-0.143	0.077	3.459	1	0.063	0.866	0.745	1.008
	2	0	.	.	0	.	.	.	.
	Yes	0.108	0.031	11.984	1	0.001	1.114	1.048	1.183
	No	0.00E+00	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	-8.99E-03	0.035	0.065	1	0.798	0.991	0.925	1.062
	Others	0	.	.	0	.	.	.	.
	Private health Sector	0.424	0.034	158.307	1	0.000	1.527	1.43	1.632
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.1	0.028	13.246	1	0.000	1.106	1.047	1.167
	No	0	.	.	0	.	.	.	.
	Yes	0.148	0.03	24.169	1	0.000	1.16	1.093	1.23
	No	0	.	.	0	.	.	.	.

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Public Health Sector	**Intercept**	-0.295	0.06	24.181	1	0.000			
	N-E States	-0.219	0.099	4.956	1	0.026	0.803	0.662	0.974
	West	-0.356	0.043	67.604	1	0.000	0.7	0.643	0.762
	East	-0.707	0.043	266.718	1	0.000	0.493	0.453	0.537
	Central	-0.467	0.047	98.269	1	0.000	0.627	0.572	0.688
	North	-0.481	0.047	102.555	1	0.000	0.618	0.563	0.679
	South	0.00E+00	.	.	0	.	.	.	.
	Urban	0.286	0.036	61.448	1	0.000	1.331	1.239	1.43
	Rural	0	.	.	0	.	.	.	.
	Others	-7.92E-04	0.059	0	1	0.989	0.999	0.891	1.121
	Muslim	0.203	0.051	15.92	1	0.000	1.225	1.109	1.354
	Hindu	0.00E+00	.	.	0	.	.	.	.
	OBC	3.66E-02	0.035	1.083	1	0.298	1.037	0.968	1.111
	ST	-0.128	0.059	4.625	1	0.032	0.88	0.784	0.989
	SC	3.83E-02	0.04	0.934	1	0.334	1.039	0.961	1.123
	Others	0	.	.	0	.	.	.	.
	Pucca	0.112	0.041	7.427	1	0.006	1.118	1.032	1.212
	Semi Pucca	0.109	0.035	9.679	1	0.002	1.115	1.041	1.195
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.176	0.038	21.388	1	0.000	1.193	1.107	1.285
	30-34	1.23E-01	0.04	9.201	1	0.002	1.131	1.044	1.224
	15-24	-0.298	0.058	26.339	1	0.000	0.742	0.662	0.832
	25-29	0.00E+00	.	.	0	.	.	.	.
	>11 yrs	-6.47E-02	0.084	0.598	1	0.439	0.937	0.796	1.104
	6-10 yrs	0.109	0.039	7.842	1	0.005	1.115	1.033	1.203
	1-5 yrs	7.98E-02	0.04	3.922	1	0.048	1.083	1.001	1.172
	No Schooling	0.00E+00	.	.	0	.	.	.	.
	4+	-0.138	0.041	11.344	1	0.001	0.871	0.804	0.944
	3	-2.43E-02	0.04	0.36	1	0.548	0.976	0.902	1.057
	1	-5.15E-02	0.098	0.279	1	0.597	0.95	0.785	1.15
	2	0	.	.	0	.	.	.	.
	Yes	1.02E-02	0.035	0.082	1	0.774	1.01	0.942	1.083
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.122	0.038	10.37	1	0.001	1.129	1.049	1.216
	Others	0	.	.	0	.	.	.	.
	Private health Sector	-1.354	0.055	598.47	1	0.000	0.258	0.232	0.288
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.166	0.031	29.418	1	0.000	1.18	1.112	1.253
	No	0	.	.	0	.	.	.	.
	Yes	0.255	0.033	61.429	1	0.000	1.29	1.211	1.375
	No	0	.	.	0	.	.	.	.

No. of Cases 36316 -2log likelihood 52852.88 Nagelkerke R Square 0.104

Source: Computed from RCH-RHS Data File.

Appendix Table 6

DETAILED RESULTS OF MULTINOMIAL LOGISTIC REGRESSION ANALYSIS FOR ANY MODERN METHOD USERS WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY IN INDIA

Treatment Received From	Socio-economic, demographic and programme variables	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Nurse	Intercept	-2.807	0.13	460.564	1	0.000			
	N-E States	-0.347	0.26	1.816	1	0.178	0.707	0.427	1.171
	West	8.85E-02	0.09	0.984	1	0.321	1.093	0.917	1.301
	East	-0.265	0.09	7.981	1	0.005	0.767	0.639	0.922
	Central	0.108	0.1	1.145	1	0.285	1.114	0.914	1.357
	North	-0.193	0.1	3.438	1	0.064	0.825	0.673	1.011
	South	0	.	.	0	.	.	.	.
	Urban	-0.571	0.1	32.875	1	0.000	0.565	0.465	0.687
	Rural	0	.	.	0	.	.	.	.
	Others	0.308	0.12	7.046	1	0.008	1.361	1.084	1.708
	Muslim	0.119	0.12	1.033	1	0.310	1.126	0.896	1.415
	Hindu	0	.	.	0	.	.	.	.
	OBC	0.12	0.08	2.496	1	0.114	1.128	0.971	1.309
	ST	-0.253	0.13	3.948	1	0.047	0.776	0.605	0.997
	SC	0.126	0.08	2.208	1	0.137	1.134	0.961	1.338
	Others	0	.	.	0	.	.	.	.
	Pucca	6.37E-03	0.09	0.005	1	0.943	1.006	0.846	1.198
	Semi Pucca	2.73E-02	0.07	0.139	1	0.709	1.028	0.89	1.186
	Kachcha	0	.	.	0	.	.	.	.
	35+	-0.323	0.08	16.235	1	0.000	0.724	0.619	0.847
	30-34	-0.123	0.08	2.232	1	0.135	0.885	0.753	1.039
	15-24	-5.96E-02	0.11	0.316	1	0.574	0.942	0.765	1.16
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	-0.237	0.2	1.414	1	0.234	0.789	0.535	1.166
	6-10 yrs	2.34E-02	0.09	0.076	1	0.783	1.024	0.867	1.209
	1-5 yrs	1.53E-02	0.09	0.031	1	0.861	1.015	0.856	1.205
	No Schooling	0	.	.	0	.	.	.	.
	4+	2.34E-02	0.09	0.069	1	0.792	1.024	0.86	1.218
	3	0.11	0.09	1.602	1	0.206	1.116	0.942	1.323
	1	0.626	0.16	14.627	1	0.000	1.87	1.357	2.578
	2	0	.	.	0	.	.	.	.
	Yes	4.58E-02	0.08	0.363	1	0.547	1.047	0.902	1.215
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.594	0.07	76.65	1	0.000	1.812	1.586	2.07
	Others	0	.	.	0	.	.	.	.
	Private health Sector	-0.29	0.1	8.468	1	0.004	0.748	0.615	0.91
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.122	0.06	3.65	1	0.056	1.13	0.997	1.281
	No	0	.	.	0	.	.	.	.
	Yes	1.051	0.07	253.231	1	0.000	2.861	2.514	3.257
	No	0	.	.	0	.	.	.	.

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Doctor	**Intercept**	0.348	0.05	50.773	1	0.000			
	N-E States	-0.801	0.09	87.046	1	0.000	0.449	0.38	0.531
	West	-0.196	0.04	30.769	1	0.000	0.822	0.767	0.881
	East	-0.369	0.03	118.213	1	0.000	0.691	0.647	0.739
	Central	-0.43	0.04	125.248	1	0.000	0.651	0.603	0.701
	North	-0.76	0.04	353.36	1	0.000	0.468	0.432	0.506
	South	0	.	.	0	.	.	.	.
	Urban	0.161	0.03	29.659	1	0.000	1.174	1.108	1.244
	Rural	0	.	.	0	.	.	.	.
	Others	3.12E-02	0.05	0.415	1	0.519	1.032	0.938	1.135
	Muslim	8.41E-02	0.04	4.368	1	0.037	1.088	1.005	1.177
	Hindu	0	.	.	0	.	.	.	.
	OBC	-1.33E-02	0.03	0.222	1	0.638	0.987	0.934	1.043
	ST	-0.31	0.05	39.842	1	0.000	0.734	0.666	0.808
	SC	-5.30E-02	0.03	2.749	1	0.097	0.948	0.891	1.01
	Others	0	.	.	0	.	.	.	.
	Pucca	0.254	0.03	59.975	1	0.000	1.29	1.209	1.376
	Semi Pucca	0.141	0.03	24.65	1	0.000	1.152	1.089	1.218
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.26	0.03	71.125	1	0.000	1.297	1.221	1.377
	30-34	0.192	0.03	34.699	1	0.000	1.212	1.137	1.292
	15-24	-0.312	0.05	47.861	1	0.000	0.732	0.67	0.799
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	0.138	0.06	4.951	1	0.026	1.148	1.017	1.296
	6-10 yrs	0.113	0.03	13.061	1	0.000	1.12	1.053	1.19
	1-5 yrs	0.131	0.03	16.359	1	0.000	1.14	1.07	1.215
	No Schooling	0	.	.	0	.	.	.	.
	4+	-7.07E-02	0.03	4.567	1	0.033	0.932	0.873	0.994
	3	1.62E-02	0.03	0.245	1	0.621	1.016	0.953	1.084
	1	-0.163	0.07	5.234	1	0.022	0.85	0.739	0.977
	2	0	.	.	0	.	.	.	.
	Yes	7.20E-02	0.03	6.509	1	0.011	1.075	1.017	1.136
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	-4.07E-05	0.03	0	1	0.999	1	0.94	1.064
	Others	0	.	.	0	.	.	.	.
	Private health Sector	-4.43E-02	0.03	1.9	1	0.168	0.957	0.898	1.019
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.132	0.03	28.261	1	0.000	1.141	1.087	1.198
	No	0	.	.	0	.	.	.	.
	Yes	0.126	0.03	21.809	1	0.000	1.134	1.076	1.196
	No	0	.	.	0	.	.	.	.

No. of Cases 36316 -2log likelihood 39466.28 Nagelkerke R Square 0.064

Source: Computed from RCH-RHS Data File.

Appendix Table 7

DETAILED RESULTS OF MULTINOMIAL LOGISTIC REGRESSION ANALYSIS FOR STERILISATION USERS WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY IN INDIA

Treatment Received From	Socio-economic, demographic and programme variables	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Private Health Sector	Intercept	-0.257	0.058	19.635	1	0.000			
	N-E States	-1.133	0.146	60.49	1	0.000	0.322	0.242	0.428
	West	-2.21E-02	0.041	0.297	1	0.586	0.978	0.903	1.059
	East	-1.87E-02	0.04	0.221	1	0.638	0.981	0.908	1.061
	Central	-0.222	0.045	23.995	1	0.000	0.801	0.733	0.875
	North	-0.972	0.051	356.624	1	0.000	0.378	0.342	0.419
	South	0	.	.	0	.	.	.	.
	Urban	1.61E-02	0.036	0.204	1	0.651	1.016	0.948	1.09
	Rural	0	.	.	0	.	.	.	.
	Others	0.149	0.059	6.405	1	0.011	1.161	1.034	1.303
	Muslim	0.15	0.051	8.468	1	0.004	1.161	1.05	1.284
	Hindu	0	.	.	0	.	.	.	.
	OBC	-5.41E-02	0.033	2.679	1	0.102	0.947	0.888	1.011
	ST	-0.46	0.06	58.801	1	0.000	0.632	0.562	0.71
	SC	-0.119	0.038	10.007	1	0.002	0.888	0.825	0.956
	Others	0	.	.	0	.	.	.	.
	Pucca	0.291	0.039	57.219	1	0.000	1.338	1.241	1.443
	Semi Pucca	0.151	0.034	20.217	1	0.000	1.164	1.089	1.243
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.232	0.036	40.45	1	0.000	1.261	1.174	1.355
	30-34	0.207	0.039	28.24	1	0.000	1.23	1.139	1.327
	15-24	-0.166	0.059	8.011	1	0.005	0.847	0.754	0.95
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	1.54E-03	0.08	0	1	0.985	1.002	0.856	1.172
	6-10 yrs	0.157	0.037	17.881	1	0.000	1.17	1.088	1.258
	1-5 yrs	0.201	0.038	28.076	1	0.000	1.223	1.135	1.317
	No Schooling	0	.	.	0	.	.	.	.
	4+	-8.54E-02	0.039	4.762	1	0.029	0.918	0.85	0.991
	3	-1.54E-02	0.039	0.159	1	0.690	0.985	0.913	1.062
	2	0	.	.	0	.	.	.	.
	Yes	0.114	0.034	11.371	1	0.001	1.12	1.049	1.197
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	1.54E-02	0.039	0.16	1	0.690	1.016	0.942	1.095
	Others	0	.	.	0	.	.	.	.
	Private health Sector	0.635	0.041	240.632	1	0.000	1.886	1.741	2.044
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	6.36E-02	0.029	4.655	1	0.031	1.066	1.006	1.129
	No	0	.	.	0	.	.	.	.
	Yes	0.135	0.031	18.458	1	0.000	1.145	1.076	1.218
	No	0	.	.	0	.	.	.	.

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Public Health Sector	**Intercept**	-0.293	0.063	21.571	1	0.000			
	N-E States	-0.156	0.118	1.754	1	0.185	0.855	0.678	1.078
	West	-0.363	0.045	65.359	1	0.000	0.696	0.637	0.76
	East	-0.635	0.045	197.983	1	0.000	0.53	0.485	0.579
	Central	-0.444	0.049	81.489	1	0.000	0.642	0.583	0.706
	North	-0.58	0.05	133.925	1	0.000	0.56	0.507	0.618
	South	0	.	.	0	.	.	.	.
	Urban	0.28	0.039	52.043	1	0.000	1.323	1.226	1.427
	Rural	0	.	.	0	.	.	.	.
	Others	3.23E-02	0.063	0.266	1	0.606	1.033	0.914	1.168
	Muslim	0.285	0.057	25.244	1	0.000	1.33	1.19	1.487
	Hindu	0	.	.	0	.	.	.	.
	OBC	3.25E-02	0.037	0.781	1	0.377	1.033	0.961	1.11
	ST	-0.117	0.061	3.609	1	0.057	0.89	0.789	1.004
	SC	1.49E-02	0.041	0.131	1	0.718	1.015	0.936	1.101
	Others	0	.	.	0	.	.	.	.
	Pucca	8.94E-02	0.043	4.378	1	0.036	1.094	1.006	1.189
	Semi Pucca	0.117	0.036	10.222	1	0.001	1.124	1.046	1.207
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.19	0.04	22.657	1	0.000	1.21	1.118	1.308
	30-34	0.128	0.043	8.89	1	0.003	1.136	1.045	1.236
	15-24	-0.193	0.065	8.718	1	0.003	0.825	0.726	0.937
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	-0.303	0.101	9.079	1	0.003	0.738	0.606	0.899
	6-10 yrs	0.121	0.041	8.614	1	0.003	1.128	1.041	1.223
	1-5 yrs	0.106	0.042	6.366	1	0.012	1.112	1.024	1.208
	No Schooling	0	.	.	0	.	.	.	.
	4+	-0.151	0.043	12.291	1	0.000	0.86	0.791	0.936
	3	-4.93E-02	0.043	1.34	1	0.247	0.952	0.876	1.035
	2	0	.	.	0	.	.	.	.
	Yes	5.34E-02	0.037	2.03	1	0.154	1.055	0.98	1.135
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.12	0.041	8.798	1	0.003	1.128	1.042	1.221
	Others	0	.	.	0	.	.	.	.
	Private health Sector	-1.153	0.067	299.191	1	0.000	0.316	0.277	0.36
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.102	0.032	9.974	1	0.002	1.107	1.039	1.179
	No	0	.	.	0	.	.	.	.
	Yes	0.274	0.034	65.874	1	0.000	1.315	1.231	1.405
	No	0	.	.	0	.	.	.	.

No. of Cases 32594 -2log likelihood 46561.081 Nagelkerke R Square 0.094

Source: Computed from RCH-RHS Data File.

Appendix Table 8

DETAILED RESULTS OF MULTINOMIAL LOGISTIC REGRESSION ANALYSIS FOR STERILISATION USERS WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY IN INDIA

Treatment Received From	Socio-economic, demographic and programme variables	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Nurse	Intercept	-2.925	0.144	411.001	1	0.000			
	N-E States	-0.8	0.428	3.496	1	0.062	0.449	0.194	1.039
	West	5.67E-02	0.094	0.361	1	0.548	1.058	0.88	1.274
	East	-0.273	0.101	7.324	1	0.007	0.761	0.625	0.928
	Central	7.17E-03	0.109	0.004	1	0.948	1.007	0.813	1.247
	North	-0.478	0.118	16.417	1	0.000	0.62	0.492	0.781
	South	0	.	.	0	.	.	.	.
	Urban	-0.574	0.114	25.225	1	0.000	0.563	0.45	0.705
	Rural	0	.	.	0	.	.	.	.
	Others	0.217	0.134	2.62	1	0.106	1.243	0.955	1.617
	Muslim	9.93E-02	0.144	0.477	1	0.490	1.104	0.833	1.464
	Hindu	0	.	.	0	.	.	.	.
	OBC	0.172	0.084	4.198	1	0.040	1.188	1.008	1.401
	ST	-0.166	0.136	1.499	1	0.221	0.847	0.649	1.105
	SC	0.219	0.092	5.651	1	0.017	1.244	1.039	1.49
	Others	0	.	.	0	.	.	.	.
	Pucca	-1.24E-02	0.097	0.016	1	0.898	0.988	0.817	1.194
	Semi Pucca	-8.24E-03	0.079	0.011	1	0.917	0.992	0.85	1.158
	Kachcha	0	.	.	0	.	.	.	.
	35+	-0.241	0.087	7.731	1	0.005	0.786	0.663	0.931
	30-34	-6.49E-02	0.09	0.522	1	0.470	0.937	0.786	1.118
	15-24	4.90E-02	0.126	0.152	1	0.697	1.05	0.821	1.344
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	-0.496	0.283	3.084	1	0.079	0.609	0.35	1.059
	6-10 yrs	-5.57E-02	0.097	0.329	1	0.566	0.946	0.782	1.144
	1-5 yrs	1.68E-02	0.095	0.031	1	0.860	1.017	0.844	1.225
	No Schooling	0	.	.	0	.	.	.	.
	4+	9.54E-02	0.098	0.956	1	0.328	1.1	0.909	1.332
	3	0.153	0.096	2.551	1	0.110	1.165	0.966	1.406
	2	0	.	.	0	.	.	.	.
	Yes	0.12	0.083	2.118	1	0.146	1.128	0.959	1.326
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.59	0.075	62.122	1	0.000	1.804	1.558	2.089
	Others	0	.	.	0	.	.	.	.
	Private health Sector	4.15E-02	0.121	0.118	1	0.731	1.042	0.823	1.321
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	-9.38E-02	0.07	1.771	1	0.183	0.91	0.793	1.045
	No	0	.	.	0	.	.	.	.
	Yes	1.174	0.072	265.851	1	0.000	3.236	2.81	3.727
	No	0	.	.	0	.	.	.	.

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Doctor	**Intercept**	0.376	0.052	52.846	1	0.000			
	N-E States	-0.579	0.106	29.783	1	0.000	0.56	0.455	0.69
	West	-0.177	0.037	22.937	1	0.000	0.838	0.78	0.901
	East	-0.261	0.036	52.702	1	0.000	0.77	0.718	0.827
	Central	-0.339	0.04	70.18	1	0.000	0.713	0.658	0.771
	North	-0.792	0.043	339.895	1	0.000	0.453	0.416	0.493
	South	0	.	.	0	.	.	.	.
	Urban	0.148	0.032	21.507	1	0.000	1.159	1.089	1.234
	Rural	0	.	.	0	.	.	.	.
	Others	8.81E-02	0.052	2.85	1	0.091	1.092	0.986	1.21
	Muslim	0.21	0.047	20.21	1	0.000	1.233	1.125	1.351
	Hindu	0	.	.	0	.	.	.	.
	OBC	-3.03E-02	0.03	1.031	1	0.310	0.97	0.915	1.029
	ST	-0.314	0.051	37.782	1	0.000	0.73	0.661	0.807
	SC	-7.97E-02	0.034	5.62	1	0.018	0.923	0.865	0.986
	Others	0	.	.	0	.	.	.	.
	Pucca	0.223	0.035	41.563	1	0.000	1.25	1.168	1.338
	Semi Pucca	0.148	0.03	24.53	1	0.000	1.16	1.094	1.23
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.242	0.033	55.302	1	0.000	1.274	1.195	1.358
	30-34	0.19	0.035	29.597	1	0.000	1.209	1.129	1.294
	15-24	-0.196	0.052	14.006	1	0.000	0.822	0.741	0.911
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	-9.76E-02	0.074	1.737	1	0.188	0.907	0.784	1.049
	6-10 yrs	0.15	0.034	20.081	1	0.000	1.162	1.088	1.241
	1-5 yrs	0.17	0.034	24.556	1	0.000	1.185	1.108	1.268
	No Schooling	0	.	.	0	.	.	.	.
	4+	-0.124	0.035	12.364	1	0.000	0.884	0.825	0.947
	3	-4.01E-02	0.035	1.325	1	0.250	0.961	0.897	1.029
	2	0	.	.	0	.	.	.	.
	Yes	8.76E-02	0.03	8.255	1	0.004	1.091	1.028	1.159
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	1.76E-02	0.034	0.262	1	0.609	1.018	0.951	1.089
	Others	0	.	.	0	.	.	.	.
	Private health Sector	0.172	0.04	19.016	1	0.000	1.188	1.1	1.284
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	9.25E-02	0.026	12.253	1	0.000	1.097	1.042	1.155
	No	0	.	.	0	.	.	.	.
	Yes	0.127	0.028	20.335	1	0.000	1.135	1.074	1.2
	No	0	.	.	0	.	.	.	.

No. of Cases 32594 -2log likelihood 33759.47 Nagelkerke R Square 0.061

Source: Computed from RCH-RHS Data File.

Appendix Table 9

DETAILED RESULTS OF MULTINOMIAL LOGISTIC REGRESSION ANALYSIS FOR IUD USERS WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY IN INDIA

Treatment Received From	Socio-economic, demographic and programme variables	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Private Health Sector	Intercept	-1.844	0.36	26.32	1	0.000			
	N-E States	-0.58	0.419	1.912	1	0.167	0.56	0.246	1.274
	West	-0.393	0.194	4.092	1	0.043	0.675	0.461	0.988
	East	-0.355	0.261	1.844	1	0.174	0.701	0.42	1.17
	Central	-0.335	0.247	1.846	1	0.174	0.715	0.441	1.16
	North	-0.124	0.212	0.346	1	0.556	0.883	0.583	1.337
	South	0	.	.	0	.	.	.	.
	Urban	5.80E-02	0.142	0.167	1	0.683	1.06	0.802	1.4
	Rural	0	.	.	0	.	.	.	.
	Others	-0.581	0.211	7.554	1	0.006	0.559	0.37	0.847
	Muslim	0.102	0.187	0.301	1	0.583	1.108	0.768	1.597
	Hindu	0	.	.	0	.	.	.	.
	OBC	-5.68E-02	0.159	0.127	1	0.722	0.945	0.691	1.291
	ST	0.342	0.429	0.635	1	0.426	1.407	0.607	3.26
	SC	6.08E-02	0.253	0.058	1	0.810	1.063	0.648	1.744
	Others	0	.	.	0	.	.	.	.
	Pucca	0.763	0.254	9.032	1	0.003	2.144	1.304	3.526
	Semi Pucca	0.418	0.244	2.927	1	0.087	1.518	0.941	2.45
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.159	0.216	0.544	1	0.461	1.173	0.768	1.791
	30-34	0.188	0.182	1.061	1	0.303	1.207	0.844	1.725
	15-24	-0.133	0.175	0.578	1	0.447	0.875	0.62	1.234
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	0.872	0.236	13.69	1	0.000	2.391	1.507	3.795
	6-10 yrs	0.193	0.205	0.887	1	0.346	1.212	0.812	1.81
	1-5 yrs	-0.15	0.261	0.33	1	0.565	0.861	0.516	1.435
	No Schooling	0	.	.	0	.	.	.	.
	4+	0.526	0.23	5.217	1	0.022	1.692	1.078	2.658
	3	0.152	0.204	0.553	1	0.457	1.164	0.781	1.735
	1	0.608	0.177	11.83	1	0.001	1.836	1.299	2.596
	2	0	.	.	0	.	.	.	.
	Yes	-1.54E-02	0.144	0.011	1	0.915	0.985	0.742	1.306
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.185	0.152	1.488	1	0.223	1.203	0.894	1.62
	Others	0	.	.	0	.	.	.	.
	Private health Sector	1.21	0.135	80.054	1	0.000	3.353	2.572	4.371
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	5.06E-02	0.136	0.139	1	0.709	1.052	0.806	1.372
	No	0	.	.	0	.	.	.	.
	Yes	0.196	0.176	1.239	1	0.266	1.216	0.861	1.718
	No	0	.	.	0	.	.	.	.

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Public Health Sector	**Intercept**	-0.692	0.354	3.815	1	0.051			
	N-E States	-0.154	0.392	0.155	1	0.694	0.857	0.397	1.848
	West	-8.60E-03	0.226	0.001	1	0.970	0.991	0.637	1.544
	East	-0.447	0.278	2.577	1	0.108	0.64	0.371	1.104
	Central	0.136	0.262	0.269	1	0.604	1.145	0.686	1.912
	North	0.956	0.227	17.735	1	0.000	2.602	1.667	4.06
	South	0	.	.	0	.	.	.	.
	Urban	0.24	0.155	2.404	1	0.121	1.271	0.939	1.723
	Rural	0	.	.	0	.	.	.	.
	Others	-0.252	0.216	1.362	1	0.243	0.777	0.509	1.187
	Muslim	0.529	0.2	7.017	1	0.008	1.697	1.147	2.509
	Hindu	0	.	.	0	.	.	.	.
	OBC	-0.177	0.179	0.976	1	0.323	0.838	0.591	1.19
	ST	0.294	0.429	0.47	1	0.493	1.342	0.579	3.109
	SC	0.555	0.241	5.292	1	0.021	1.741	1.086	2.794
	Others	0	.	.	0	.	.	.	.
	Pucca	0.19	0.241	0.621	1	0.431	1.209	0.754	1.938
	Semi Pucca	0.125	0.223	0.316	1	0.574	1.134	0.732	1.755
	Kachcha	0	.	.	0	.	.	.	.
	35+	-0.302	0.235	1.657	1	0.198	0.739	0.466	1.171
	30-34	0.178	0.184	0.933	1	0.334	1.194	0.833	1.712
	15-24	-0.796	0.191	17.453	1	0.000	0.451	0.31	0.655
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	-5.06E-02	0.25	0.041	1	0.840	0.951	0.583	1.551
	6-10 yrs	-0.139	0.203	0.472	1	0.492	0.87	0.584	1.295
	1-5 yrs	0.193	0.24	0.648	1	0.421	1.213	0.758	1.94
	No Schooling	0	.	.	0	.	.	.	.
	4+	9.47E-02	0.234	0.164	1	0.686	1.099	0.695	1.738
	3	0.177	0.2	0.78	1	0.377	1.193	0.806	1.766
	1	0.694	0.199	12.103	1	0.001	2.001	1.354	2.958
	2	0	.	.	0	.	.	.	.
	Yes	-0.643	0.167	14.91	1	0.000	0.525	0.379	0.728
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.185	0.161	1.319	1	0.251	1.203	0.878	1.648
	Others	0	.	.	0	.	.	.	.
	Private health Sector	-1.523	0.172	78.265	1	0.000	0.218	0.156	0.306
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.492	0.145	11.533	1	0.001	1.636	1.231	2.174
	No	0	.	.	0	.	.	.	.
	Yes	0.153	0.181	0.71	1	0.400	1.165	0.817	1.662
	No	0	.	.	0	.	.	.	.

No. of Cases 1609 -2log likelihood 2886.598 Nagelkerke R Square 0.336

Source: Computed from RCH-RHS Data File.

Appendix Table 10

DETAILED RESULTS OF MULTINOMIAL LOGISTIC REGRESSION ANALYSIS FOR IUD USERS WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY IN INDIA

Treatment Received From	Socio-economic, demographic and programme variables	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Nurse	Intercept	-1.557	0.5	9.777	1	0.002			
	N-E States	-0.948	0.68	1.931	1	0.165	0.388	0.102	1.475
	West	0.362	0.33	1.177	1	0.278	1.437	0.747	2.764
	East	-3.65E-02	0.38	0.009	1	0.924	0.964	0.457	2.032
	Central	0.691	0.36	3.658	1	0.056	1.997	0.983	4.055
	North	0.681	0.33	4.276	1	0.039	1.977	1.036	3.771
	South	0	.	.	0	.	.	.	.
	Urban	-0.985	0.26	14.149	1	0	0.373	0.223	0.624
	Rural	0	.	.	0	.	.	.	.
	Others	7.74E-02	0.31	0.063	1	0.802	1.08	0.589	1.98
	Muslim	-9.66E-02	0.31	0.1	1	0.752	0.908	0.499	1.651
	Hindu	0	.	.	0	.	.	.	.
	OBC	-0.11	0.25	0.195	1	0.659	0.895	0.548	1.462
	ST	0.151	0.61	0.062	1	0.804	1.163	0.352	3.843
	SC	-0.249	0.38	0.436	1	0.509	0.78	0.372	1.633
	Others	0	.	.	0	.	.	.	.
	Pucca	-0.361	0.32	1.278	1	0.258	0.697	0.373	1.303
	Semi Pucca	-0.121	0.29	0.177	1	0.674	0.886	0.503	1.559
	Kachcha	0	.	.	0	.	.	.	.
	35+	-0.402	0.35	1.292	1	0.256	0.669	0.335	1.338
	30-34	-0.226	0.28	0.633	1	0.426	0.798	0.457	1.391
	15-24	-0.619	0.27	5.194	1	0.023	0.538	0.316	0.917
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	-0.599	0.39	2.372	1	0.124	0.549	0.256	1.177
	6-10 yrs	-0.248	0.28	0.78	1	0.377	0.78	0.45	1.353
	1-5 yrs	0.293	0.32	0.837	1	0.36	1.341	0.715	2.512
	No Schooling	0	.	.	0	.	.	.	.
	4+	0.3	0.35	0.731	1	0.393	1.35	0.679	2.684
	3	0.483	0.29	2.776	1	0.096	1.622	0.918	2.863
	1	1.178	0.29	16.599	1	0	3.248	1.843	5.725
	2	0	.	.	0	.	.	.	.
	Yes	-0.258	0.24	1.176	1	0.278	0.772	0.484	1.232
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.121	0.24	0.257	1	0.612	1.128	0.708	1.797
	Others	0	.	.	0	.	.	.	.
	Private health Sector	-0.686	0.23	8.639	1	0.003	0.504	0.319	0.796
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.585	0.22	7.275	1	0.007	1.795	1.173	2.747
	No	0	.	.	0	.	.	.	.
	Yes	0.639	0.24	6.992	1	0.008	1.895	1.18	3.044
	No	0	.	.	0	.	.	.	.

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Doctor	**Intercept**	-0.838	0.3	7.629	1	0.006			
	N-E States	-0.244	0.34	0.53	1	0.467	0.783	0.406	1.512
	West	-0.335	0.18	3.671	1	0.055	0.715	0.508	1.008
	East	-0.495	0.23	4.68	1	0.031	0.61	0.389	0.955
	Central	-0.343	0.22	2.498	1	0.114	0.71	0.464	1.086
	North	0.276	0.19	2.196	1	0.138	1.317	0.915	1.896
	South	0	.	.	0	.	.	.	.
	Urban	0.319	0.12	6.603	1	0.01	1.376	1.079	1.755
	Rural	0	.	.	0	.	.	.	.
	Others	-0.526	0.18	8.433	1	0.004	0.591	0.414	0.843
	Muslim	0.365	0.16	5.032	1	0.025	1.441	1.047	1.982
	Hindu	0	.	.	0	.	.	.	.
	OBC	-7.78E-02	0.14	0.297	1	0.586	0.925	0.699	1.224
	ST	0.335	0.37	0.837	1	0.36	1.397	0.682	2.862
	SC	0.452	0.21	4.659	1	0.031	1.572	1.042	2.369
	Others	0	.	.	0	.	.	.	.
	Pucca	0.726	0.21	11.622	1	0.001	2.067	1.362	3.138
	Semi Pucca	0.408	0.2	4.093	1	0.043	1.504	1.013	2.232
	Kachcha	0	.	.	0	.	.	.	.
	35+	2.64E-02	0.19	0.019	1	0.889	1.027	0.708	1.488
	30-34	0.248	0.16	2.5	1	0.114	1.282	0.942	1.744
	15-24	-0.392	0.15	6.5	1	0.011	0.676	0.5	0.913
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	0.588	0.21	8.269	1	0.004	1.801	1.206	2.689
	6-10 yrs	6.83E-02	0.17	0.155	1	0.694	1.071	0.762	1.505
	1-5 yrs	-4.04E-02	0.22	0.035	1	0.851	0.96	0.63	1.464
	No Schooling	0	.	.	0	.	.	.	.
	4+	0.327	0.2	2.749	1	0.097	1.386	0.942	2.039
	3	7.15E-02	0.17	0.171	1	0.679	1.074	0.766	1.507
	1	0.556	0.16	12.295	1	0	1.744	1.278	2.38
	2	0	.	.	0	.	.	.	.
	Yes	-0.288	0.13	5	1	0.025	0.749	0.582	0.965
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.182	0.13	1.878	1	0.171	1.2	0.925	1.558
	Others	0	.	.	0	.	.	.	.
	Private health Sector	0.279	0.12	5.669	1	0.017	1.322	1.051	1.664
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.174	0.12	2.171	1	0.141	1.19	0.944	1.5
	No	0	.	.	0	.	.	.	.
	Yes	1.61E-02	0.15	0.011	1	0.917	1.016	0.751	1.375
	No	0	.	.	0	.	.	.	.

No. of Cases 1609 -2log likelihood 2617.606 Nagelkerke R Square 0.202

Source: Computed from RCH-RHS Data File.

Appendix Table 11

DETAILED RESULTS OF MULTINOMIAL LOGISTIC REGRESSION ANALYSIS FOR PILL USERS WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY IN INDIA

Treatment Received From	Socio-economic, demographic and programme variables	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Private Health Sector	Intercept	-1.839	0.417	19.459	1	0.000			
	N-E States	-0.982	0.425	5.345	1	0.021	0.375	0.163	0.861
	West	0.287	0.382	0.565	1	0.452	1.333	0.63	2.82
	East	-0.192	0.36	0.286	1	0.593	0.825	0.408	1.67
	Central	-0.577	0.38	2.3	1	0.129	0.562	0.267	1.184
	North	0.104	0.393	0.071	1	0.790	1.11	0.514	2.398
	South	0	.	.	0	.	.	.	.
	Urban	0.254	0.135	3.544	1	0.060	1.29	0.99	1.68
	Rural	0	.	.	0	.	.	.	.
	Others	0.312	0.283	1.209	1	0.272	1.366	0.784	2.38
	Muslim	0.318	0.141	5.068	1	0.024	1.374	1.042	1.812
	Hindu	0	.	.	0	.	.	.	.
	OBC	-3.36E-02	0.165	0.042	1	0.838	0.967	0.7	1.335
	ST	-0.612	0.313	3.817	1	0.051	0.542	0.294	1.002
	SC	-6.41E-02	0.17	0.141	1	0.707	0.938	0.672	1.31
	Others	0	.	.	0	.	.	.	.
	Pucca	0.474	0.169	7.853	1	0.005	1.607	1.153	2.239
	Semi Pucca	0.229	0.149	2.355	1	0.125	1.257	0.939	1.683
	Kachcha	0	.	.	0	.	.	.	.
	35+	4.86E-02	0.181	0.072	1	0.788	1.05	0.736	1.497
	30-34	5.13E-02	0.161	0.101	1	0.750	1.053	0.767	1.444
	15-24	-0.36	0.159	5.158	1	0.023	0.697	0.511	0.952
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	0.249	0.248	1.012	1	0.315	1.283	0.789	2.085
	6-10 yrs	-1.61E-02	0.155	0.011	1	0.917	0.984	0.726	1.334
	1-5 yrs	-2.54E-02	0.154	0.027	1	0.869	0.975	0.721	1.318
	No Schooling	0	.	.	0	.	.	.	.
	4+	0.237	0.174	1.856	1	0.173	1.267	0.901	1.781
	3	0.252	0.173	2.117	1	0.146	1.286	0.916	1.805
	1	0.215	0.179	1.452	1	0.228	1.24	0.874	1.76
	2	0	.	.	0	.	.	.	.
	Yes	0.487	0.123	15.829	1	0.000	1.628	1.281	2.07
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.22	0.135	2.664	1	0.103	1.246	0.957	1.622
	Others	0	.	.	0	.	.	.	.
	Private health Sector	0.593	0.155	14.678	1	0.000	1.81	1.336	2.452
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.636	0.127	25.274	1	0.000	1.889	1.474	2.421
	No	0	.	.	0	.	.	.	.
	Yes	0.292	0.188	2.401	1	0.121	1.339	0.926	1.936
	No	0	.	.	0	.	.	.	.

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Public Health Sector	**Intercept**	-2.061	0.624	10.915	1	0.001			
	N-E States	0.851	0.57	2.228	1	0.136	2.342	0.766	7.162
	West	-0.184	0.605	0.093	1	0.760	0.832	0.254	2.72
	East	-0.385	0.553	0.485	1	0.486	0.681	0.23	2.011
	Central	-3.61E-02	0.573	0.004	1	0.950	0.965	0.314	2.965
	North	1.142	0.57	4.012	1	0.045	3.133	1.025	9.576
	South	0	.	.	0	.	.	.	.
	Urban	8.87E-02	0.231	0.148	1	0.701	1.093	0.695	1.718
	Rural	0	.	.	0	.	.	.	.
	Others	-0.249	0.433	0.331	1	0.565	0.78	0.334	1.821
	Muslim	2.34E-02	0.246	0.009	1	0.924	1.024	0.633	1.657
	Hindu	0	.	.	0	.	.	.	.
	OBC	0.483	0.245	3.883	1	0.049	1.621	1.003	2.62
	ST	-0.635	0.507	1.566	1	0.211	0.53	0.196	1.432
	SC	0.553	0.25	4.895	1	0.027	1.739	1.065	2.838
	Others	0	.	.	0	.	.	.	.
	Pucca	6.88E-02	0.278	0.061	1	0.805	1.071	0.621	1.848
	Semi Pucca	8.52E-03	0.245	0.001	1	0.972	1.009	0.624	1.63
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.397	0.29	1.873	1	0.171	1.487	0.842	2.625
	30-34	0.353	0.251	1.975	1	0.160	1.424	0.87	2.331
	15-24	-0.442	0.271	2.66	1	0.103	0.643	0.378	1.093
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	-0.137	0.416	0.108	1	0.742	0.872	0.386	1.972
	6-10 yrs	0.425	0.234	3.298	1	0.069	1.53	0.967	2.421
	1-5 yrs	-0.495	0.298	2.746	1	0.097	0.61	0.34	1.095
	No Schooling	0	.	.	0	.	.	.	.
	4+	-0.353	0.271	1.698	1	0.193	0.702	0.413	1.195
	3	-0.19	0.265	0.515	1	0.473	0.827	0.492	1.39
	1	-0.647	0.338	3.665	1	0.056	0.524	0.27	1.015
	2	0	.	.	0	.	.	.	.
	Yes	-0.336	0.231	2.107	1	0.147	0.715	0.454	1.125
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.615	0.199	9.538	1	0.002	1.849	1.252	2.732
	Others	0	.	.	0	.	.	.	.
	Private health Sector	-0.777	0.197	15.598	1	0.000	0.46	0.312	0.676
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.911	0.198	21.244	1	0.000	2.486	1.688	3.662
	No	0	.	.	0	.	.	.	.
	Yes	0.29	0.272	1.136	1	0.287	1.336	0.784	2.278
	No	0	.	.	0	.	.	.	.

No. of Cases 1826 -2log likelihood 2671.1 Nagelkerke R Square 0.225

Source: Computed from RCH-RHS Data File.

Appendix Table 12

DETAILED RESULTS OF MULTINOMIAL LOGISTIC REGRESSION ANALYSIS FOR PILL USERS WHO SOUGHT TREATMENT FOR CONTRACEPTIVE MORBIDITY IN INDIA

Treatment Received From	Socio-economic, demographic and programme variables	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Nurse	Intercept	-4.885	1.15	18.165	1	0.000			
	N-E States	2.2	1.09	4.089	1	0.043	9.023	1.07	76.09
	West	0.543	1.15	0.224	1	0.636	1.721	0.182	16.304
	East	1.763	1.02	2.968	1	0.085	5.827	0.785	43.281
	Central	6.57E-02	1.14	0.003	1	0.954	1.068	0.114	10.006
	North	2.448	1.04	5.521	1	0.019	11.563	1.501	89.09
	South	0	.	.	0	.	.	.	.
	Urban	-0.2	0.42	0.229	1	0.632	0.819	0.362	1.854
	Rural	0	.	.	0	.	.	.	.
	Others	1.097	0.59	3.472	1	0.062	2.995	0.945	9.491
	Muslim	-0.195	0.43	0.208	1	0.648	0.823	0.357	1.899
	Hindu	0	.	.	0	.	.	.	.
	OBC	0.463	0.43	1.146	1	0.284	1.588	0.681	3.705
	ST	-0.705	0.74	0.914	1	0.339	0.494	0.117	2.095
	SC	0.187	0.42	0.196	1	0.658	1.206	0.527	2.763
	Others	0	.	.	0	.	.	.	.
	Pucca	0.402	0.49	0.666	1	0.414	1.495	0.569	3.923
	Semi Pucca	0.459	0.39	1.391	1	0.238	1.582	0.738	3.389
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.274	0.51	0.288	1	0.592	1.316	0.483	3.583
	30-34	2.71E-02	0.45	0.004	1	0.952	1.027	0.422	2.5
	15-24	0.111	0.42	0.07	1	0.792	1.117	0.49	2.546
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	-1.692	0.97	3.041	1	0.081	0.184	2.75E-02	1.233
	6-10 yrs	-0.246	0.39	0.41	1	0.522	0.782	0.368	1.661
	1-5 yrs	-0.897	0.48	3.435	1	0.064	0.408	0.158	1.053
	No Schooling	0	.	.	0	.	.	.	.
	4+	-0.295	0.46	0.413	1	0.521	0.744	0.302	1.833
	3	-0.209	0.46	0.203	1	0.652	0.812	0.327	2.012
	1	-0.188	0.51	0.137	1	0.711	0.828	0.306	2.243
	2	0	.	.	0	.	.	.	.
	Yes	-0.995	0.47	4.455	1	0.035	0.37	0.147	0.931
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	1.065	0.31	11.772	1	0.001	2.9	1.579	5.329
	Others	0	.	.	0	.	.	.	.
	Private health Sector	-1.538	0.34	20.134	1	0.000	0.215	0.11	0.42
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	1.599	0.34	21.893	1	0.000	4.947	2.532	9.664
	No	0	.	.	0	.	.	.	.
	Yes	1.271	0.36	12.593	1	0.000	3.565	1.767	7.194
	No	0	.	.	0	.	.	.	.

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Doctor	**Intercept**	-1.267	0.39	10.836	1	0.001			
	N-E States	-0.48	0.37	1.659	1	0.198	0.619	0.298	1.284
	West	0.132	0.36	0.136	1	0.713	1.141	0.564	2.308
	East	-0.376	0.34	1.247	1	0.264	0.686	0.355	1.328
	Central	-0.543	0.35	2.361	1	0.124	0.581	0.29	1.161
	North	0.222	0.37	0.37	1	0.543	1.249	0.611	2.553
	South	0	.	.	0	.	.	.	.
	Urban	0.255	0.13	3.995	1	0.046	1.291	1.005	1.657
	Rural	0	.	.	0	.	.	.	.
	Others	3.95E-02	0.27	0.021	1	0.884	1.04	0.612	1.767
	Muslim	0.296	0.13	4.893	1	0.027	1.344	1.034	1.747
	Hindu	0	.	.	0	.	.	.	.
	OBC	5.21E-02	0.15	0.117	1	0.732	1.053	0.782	1.419
	ST	-0.679	0.29	5.327	1	0.021	0.507	0.285	0.903
	SC	9.13E-02	0.16	0.341	1	0.559	1.096	0.806	1.489
	Others	0	.	.	0	.	.	.	.
	Pucca	0.353	0.16	4.967	1	0.026	1.424	1.044	1.943
	Semi Pucca	0.153	0.14	1.191	1	0.275	1.165	0.885	1.533
	Kachcha	0	.	.	0	.	.	.	.
	35+	0.109	0.17	0.416	1	0.519	1.115	0.801	1.553
	30-34	9.27E-02	0.15	0.383	1	0.536	1.097	0.818	1.471
	15-24	-0.413	0.15	7.605	1	0.006	0.662	0.494	0.888
	25-29	0	.	.	0	.	.	.	.
	>11 yrs	0.292	0.23	1.576	1	0.209	1.34	0.849	2.115
	6-10 yrs	0.145	0.14	1.018	1	0.313	1.156	0.872	1.532
	1-5 yrs	-4.26E-02	0.15	0.084	1	0.772	0.958	0.719	1.278
	No Schooling	0	.	.	0	.	.	.	.
	4+	0.131	0.16	0.651	1	0.420	1.139	0.83	1.565
	3	0.162	0.16	1.019	1	0.313	1.176	0.858	1.611
	1	4.52E-02	0.17	0.072	1	0.789	1.046	0.751	1.456
	2	0	.	.	0	.	.	.	.
	Yes	0.389	0.12	11.223	1	0.001	1.476	1.175	1.854
	No	0	.	.	0	.	.	.	.
	ANM/Doctor/Health Worker	0.238	0.13	3.563	1	0.059	1.269	0.991	1.624
	Others	0	.	.	0	.	.	.	.
	Private health Sector	0.353	0.14	6.609	1	0.010	1.423	1.087	1.863
	Public health Sector	0	.	.	0	.	.	.	.
	Yes	0.633	0.12	28.326	1	0.000	1.883	1.492	2.378
	No	0	.	.	0	.	.	.	.
	Yes	9.69E-02	0.18	0.284	1	0.594	1.102	0.772	1.573
	No	0	.	.	0	.	.	.	.

No. of Cases 1826 -2log likelihood 2369.937 Nagelkerke R Square 0.206

Source: Computed from RCH-RHS Data File.