A STUDY ON THE SELF REPORTED REPRODUCTIVE MORBIDITY IN THE CONTEXT OF CONTRACEPTIVE USE, AND ANALYSIS OF THE SERVICE RELATED DETERMINANTS OF REPRODUCTIVE MORBIDITY

Sowmini. C. V

Dissertation submitted in partial fulfilment of the requirements for the award of the degree of Master of Public Health

Achutha Menon Centre for Health Science Studies
Sree Chitra Tirunal Institute for Medical Sciences and Technology
Thiruvananthapuram, Kerala, India.

1999.

CERTIFICATE

This is to certify that the study on *"Self reported reproductive morbidity in the context of contraceptive use, and analysis of the service related determinants of reproductive morbidity"* is a bonafide work undertaken by **Sowmini C V** towards the study curriculum of Master of Public Health degree course under the guidance of Dr. P. Sankara Sarma and Dr. Mala Ramanathan.

Thiruvananthapuram.
19-05-1999.

Dr. P.Sankara Sarma
Assistant Professor
Guide

Dr. Mala Ramanathan
Assistant Professor
Co - Guide

Achutha menon center for health science studies.
Sree Chitra Tirunal Institute for Medical Sciences and Technology.
Thiruvananthapuram, Kerala, India.

ACKNOWLEDGEMENTS

I am extremely grateful to my dissertation guide Dr.P. Sankara Sarma for his untiring and timely guidance and innovative ideas, all throughout my study.

To my dissertation co-guide Dr. Mala Ramanathan, I am deeply indebted for patiently reading my whole script and making valuable suggestion from time to time. She was a source of inspiration and encouragement all along.

My sincere thanks are due to my teachers, Dr. K. R .Thankappan and Dr. D . Varadharajan who constantly lend their constructive critical comments, and to Mr. S. Jayasing for all academic help rendered during the study.

I wish to place on record my gratitude to Dr. Sundari Ravindran and Dr. Sajitha Basheer and to overseas consultants Dr. Arther Reingold and Dr. R.S Vasan for their professional expertise, offered at different stages of my dissertation.

My special thanks to RUWSEC for the financial assistance provided to carry out my dissertation.

Iam greatly indebted to all the mothers who readily participated in the study and especially to the AMO, JPHNs, JHIs, at the community out reach center, Pangappara with out whose help I could not have carried out this study to completion.

Last but not the least, I would be failing in my duties if I do not acknowledge my family who were constantly by my side during trying times.

CONTENTS

Chapter -4
Results

ABBREVIATIONS

IUD	Intrauterine device
NFHS	National Family Health Survey.
PHC	Primary Health Center
SC	Subcenter
JPHN	Junior Public Health Nurse
JHI	Junior Health Inspector
C Dblocks	Community Development Block
MTP	Medical Termination of Pregnancy
FW	Family Welfare
IFPP	International Family Planning Perspective
UN	United Nations
ICPD	International Conference on Population and Development
WHO	World Health Organization
OP	Oral pills
DHS	Demographic Health Survey
TFR	Total Fertility Rate.
STD	Sexually Transmitted Diseases.
PID	Pelvic Inflammatory Diseases.
IEC	Information Education Communication.
PPS	Post Patrum Sterilization
SES	Socio Economic Status
RTI	Reproductive Tract Infections
UTI	Urinary Tract Infections
OC	Oral Contraceptive and
CC	conventional contraceptive
ROME	Re Orientation Medical Education
MCH	Maternal Child Health
EC	Eligible Couple
minilap	minilaparotomy
LHI	Lady Health Inspector
LSCS	Lower segment cesarean section
LCB	Last Child Birth
CuT	Copper T
PRC	Population Research Center
IIPS	International'Institute for Population Science.
LB	Live Birth
SRS	Sample Registration System
IMR	Infant Mortality Rate
MMR	Maternal Mortality Rate
HDI	Human Development Index
RHI	Reproductive Health Index
GHI	Gender related Health Index
RRI	Reproductive risk Index.

LIST OF TABLES

LIST OF FIGURE

ABSTRACT

In the state of Kerala, use of contraceptive methods is relatively high and so is the reproductive morbidity. There is a need to study possible linkages with a view to improving the provision of services.

Given this, the objective of the study was to investigate the extend of self reported reproductive morbidity in the context of contraceptive use among women in the reproductive ages. Analysis of certain service related determinants of reproductive morbidity was done, in order to formulate strategies to improve the reproductive as well the general health of the women. The study also examined the role of reproductive morbidity as a factor in limited or non use of contraceptives and differentials in contraceptive practice.

The study was carried out in Trivandrum district, Kerala, between January first and February 20 th 1999. The study was conducted in three subcenter communities randomly selected from those attached to the mother PHC Pangappara.

A cross sectional survey was conducted among of three groups of women in the reproductive ages, 15-44, using both qualitative and quantitative methods for data collection. A sample of 523 respondents and four case study women were interviewed. Five reproductive morbidity conditions, RTI, menstrual problems, UTI, prolapse and fistula were studied.

The results of bivariate and multivariate logistic regression showed that the symptoms suggestive of total reproductive morbidity, RTI and menstrual problems were statistically significant among the contraceptive user group when compared with the non users. This significance was retained when these conditions were compared among IUD users and sterilization cases. Reproductive morbidity was high among those who accepted sterilization from camps and those who accepted from government hospitals when compared with those accepted from private hospitals. Middle SES groups are less likely to report morbidity when compared with lower SES category as well the duration of use increases morbidity also increases.

IUD use and continuation rate was low in the studied community. Health related problems and fear of side effects are the major reasons reported for discontinuation and non use . Case studies also show that morbidity is a factor in non use of IUD.

High prevalence of reproductive morbidity among contraceptive users is a matter of concern for health of women. Need for improvement of existing methods or introduction of new methods with less side effects are essential.

The use of spacing methods was low, there is the need to improve the IEC strategies. Provision of information about both effectiveness and side effects to the clients should be strictly implemented.

The quality of services provided through camps and government hospitals should be strengthened. The quality can be improved either by limiting the number of cases sterilized in a single day or by sharing the burden of care with the private sector. The medical and paramedical professional should be trained to provide quality services. There is the need for ensuring adequate infrastructure facility in government hospitals to improve the quality of services provided.

Chapter -1
Introduction

1.1- Definition of reproductive morbidity

Reproductive morbidity includes both obstetrics and gynecological morbidity. Reproductive morbidity is the diseases related to reproductive process either during (obstetric morbidity) or outside child bearing. Gynecological morbidity consists of conditions unrelated to the pregnancy episode such as reproductive tract infections(RTI), menstrual disorders, genital prolapse. Other morbidity conditions which are related to reproductive morbidity include urinary tract infections (UTI), anemia, hypertension, obesity.

1.2- Back ground information

There are many hospital based studies on reproductive morbidity (Spinillo A et al 1996, Wilkinson D et al 1997, Anandalekshmi and Buckshee 1997). Hospital based studies, though with many advantages, have the limitation that they look into only those who visit the hospital. The subject of reproductive health and the nature of the cultural of silence surrounding it in developing countries render the estimation of the extend of reproductive morbidity in hospital setting very difficult. Many community based studies have well documented, the asymptotic nature of the problem (Wasserheit 1989, Bulut et al 1997) and low compliance for clinical evaluation (Omran and Standley,1981, Wasserheit 1989).

Contraceptive prevalence has increased globally from 9 percent of couples in 69-70 to over 50 percent in 1985-90 (Progress 21,1992). World wide, studies both from developing and developed countries on reproductive morbidity specially on gynecological

morbidity report the high prevalence of the condition (Wasserheit et al 1989, Younis et al 1993, Barbin et al 1995, Wilkinson et al 1997, Bulut et al 1997).

Contraceptive user population analyzed and in many of these studies, tubectomy was associated with increased infections (Wasserheit et al 1989). IUD use was also associated with increased chances of infections (Wasserheit et al 1989,Younis et al 1993), and increased incidence of menstrual problems (Bulut et al 1997).

Number of studies from India on reproductive morbidity specially on gynecological morbidity reveal the high prevalence of the condition (Bhatia and Cleland 1989, Bang et al 1989, Bhatia and Cleland 1995, Latha et al 1997). Some of these studies had shown that female sterilization was associated with increased incidence of reproductive tract infection (Bhatia and Cleland 1989, Bhatia and Cleland 1995). IUD use also had shown increased chances of infection that was clinically diagnosed (Bhatia and Cleland 1995). However none of the above mentioned studies were designed to study the relationship between contraceptive use and reproductive morbidity, except for the study by Bulut et al (1997).

1.3- Need for the study

The health standards in Kerala is reported to be high (Thankappan and Valiathan 1998) when compared with other Indian states. General morbidity is said to be high in Kerala (Panikar and Soman 1984). The causal factors are not well known. Two possibilities are, one is the real morbidity may not be high, but more people report morbidity because of the easy accessibility to health care, high literacy and associated increased health seeking behavior. Secondly the real morbidity itself may be high because the state is densely populated (749 person per square kilometer), poor nutritional status (Panikar and Soman 1984), inadequate coverage of drinking water supply and sanitation facility that prevail in Kerala (Srinivasan et al 1998).

A study of reproductive health and gynecological morbidity in Trivandrum district reveals a high level of gynecological morbidity within the community. The contraceptive user population from the study sample shows that people who had undergone postpartum sterilization have experienced reproductive morbidity more often than those who had not (Shenoy, Shenoy and Gopalakrishnan, 1995). The association between contraceptive practice and extent of increase in reproductive morbidity in Kerala has not studied in detail in any of these studies.

Contraceptive prevalence is very high, 64perent, in Kerala (PRC Tvm and IIPS, 1995), a level comparable with other western countries (Goldberg and Toros,1994). The total fertility rate in Kerala is 1.7, which is below the replacement level (Government of India 1997). There is a high level of use of permanent methods of contraception and low use of temporary (PRC Tvm and IIPS, 1995)) methods. Kerala has achieved almost all indicators in family planning except spacing between the births. Out of the total birthsof two and above, 35.2 percent occurred within 24 months of a previous birth (UNFPA, 1998). The age at sterilization was 26.7 years which is rather low (PRC, Tvm and IIPS, 1995). . Maternal mortality is still high in Kerala (87/100000LB) when compared with industrialized countries (3/100000LB). This indicates that while the overall health scenario in Kerala is good, the reproductive health status of women still needs attention, specifically reproductive morbidity associated with the increased contraceptive use.

Reproductive morbidity, whether self perceived or clinically diagnosed, affects the use of contraceptives as well the continuation (Hopcraft et al 1973, Wasserheit et al 1989). Morbidity may be direct result of, or exacerbation of already existing symptoms by contraceptives. Contraceptive morbidity if not identified or treated early will affects the health of individual women. Secondly, the high rate of discontinuation or non-use of contraceptive methods could result in unwanted pregnancies and unsafe abortion. Frequent

pregnancies and shorter birth intervals causes high infant and maternal mortality (Elder et al 1992,). There is reason to believe that improvements in the quality of services would increase contraceptive use and its continuation (Jain, 1989, Bruce, 1990).

Self reported morbidity has its own contribution in medical science particularly in developing countries. Perceived morbidity reflects the experiences of ill health and measurement of it is useful in identifying the health status of the women, their health seeking behavior and possible burden on the health system. Secondly, from a cost perspective, developing countries may not be able to incorporate clinical diagnosis, as medical examinations are eight times more costly than interviews (Belcher et al 1976).

Given this,

1.4-The objectives of this study are:

To estimate the extent of self reported reproductive morbidity among contraceptive users and to analyze the possible service related determining factors that might have influenced the morbidity.

1.4.1- Sub objectives

To examine the differences, if any, in perceived morbidity among the permanent and temporary contraceptive method users that contribute for the differentials in contraceptive use. And to examine if the perceived morbidity contributes to the limited, non use or discontinuation of contraceptive methods.

1.5- Scope of the study

The study was undertaken in an urban and urban out growth area of Trivandrum district. There is no urban rural difference in contraceptive prevalence, 66 percent Vs 64 percent (PRC Tvm and IIPS, 1995) and also unlike other states the rural urban difference

with respect to general and socio- demographic phenomenon is minimum in Kerala. Further, except for selected districts like Malapuram and Palakkad, the contraceptive prevalence in the other districts of Kerala are more or less the same. Therefore Trivandrum may be said to be representative of Kerala to a certain extent. However, it should be remembered that generalizations to the whole population of Kerala cannot be made and the results of this study are only indicative of the association between contraceptive use and reproductive morbidity.

1.6- Chapterisation

This dissertation have 5 chapters. Chapter one contains the back ground information need for the study, study objectives and scope for the study. The second chapter looks into the review of literature on contraceptive practices, reproductive morbidity and quality of care in family planning services. Chapter three explain how the study was carried, study design, study population, sampling procedure, sample size of the study, study variables, limitations and constraints encountered and the strength of the study. The fourth chapter have the study results to answer the study objectives. The findings of the study were discussed in the fifth chapter. This chapter contains the conclusion of the study and policy implications.

Chapter-2
Literature review

Modern contraceptive use is a primary determinant of declining fertility in the third world where eighty percent of the world population reside (Segal 1989). Contraceptives use and fertility regulation may be expected to improve the reproductive health of the women. They have an impact on infertility, sexuality, child survival, safe motherhood and sexually transmitted diseases. There were an estimated 500 million married contraceptive users in the world in 1989 (United Nations 1989). This makes the safety and effectiveness of contraceptive use important.

Demographic and Health Survey conducted in 44 developing countries report that many women who begin using contraceptive methods abandon it because of the concern about side effects, supply problems, misinformation's, fears or other reasons. Approximately two out of three women of the reproductive age in the developing world (excluding China) are not currently using any modern method of contraception.

The association between reproductive morbidity and contraceptive use is related partly to the provision and use of the method Improving the quality of care has emerged as one of the priority objectives of the family planning program in the 90's. The 1994 International Conference on Population and Development (ICPD) set target for improvement in quality of care in family planning(Anita Hardon et al1997).

This chapter will therefore review the contraceptive practices, Reproductive morbidity and quality of care in family planning.

2.1- Pattern of contraceptive use in different countries

In the developing world 38 percent of all women in the reproductive age group are current users of family planning, excluding China It is 70 percent in the developed world.

Three methods are more common in developing world. Female sterilization, Oral pills and IUD's. Voluntary female sterilization is the most widely used method in the developing world as a whole (Robey,B et al 1992)

2.2- Fertility and contraception

DHS survey in 44 developing countries indicates that where contraceptive use is low, fertility is high. Differences in the levels of contraceptive use explain 92 percent of the variation in fertility among the 50 countries studied. An increase of approximately 15 percentage points in contraceptive prevalence has accounted for a decrease of one birth in the Total Fertility Rate (Robey,B et al 1992)

2.3- Family planning policies

In 1973 five methods of fertility control were included in national family planning programs around the world, IUD's, Pills, condoms, sterilization and abortions. Minimum age of marriage was legalized in many countries.

2.4- Family planning benefits

Three major rationales for contraceptive use that enhance reproductive health of women have been identified (Segal, 1989). They are the human rights rationale, the demographic rationale and the health rationale.

The human right rationale emphasizes that women should have control over her fertility. Reproductive right endorses "all couples and individuals have the basic right to decide freely and responsibly the numbers, spacing and timing of their children and to have information and means to do so." The demographic rationale is that population growth is a major impediment for socio-economic development which is a powerful determinant of reproductive health. The health rationale identifies the health benefits of family planning as

those that occur through the avoidance of unwanted pregnancies, a change in the total number of children born, variation in the intervals between pregnancies and changes in the time at which birth occur, particularly in the first and last birth, in relation to the age of the mother

2.4.1- Use of abortion and maternal mortality and morbidity

Maternal mortality and morbidity are higher with unwanted pregnancies than wanted pregnancies (Fathalla 1989). A series of studies by WHO (1986b) report that illegal induced abortion accounted for 7-50 percent of the maternal deaths with a median of 15 percent. An estimated 20 million unsafe abortions take place each year accounting for between 50000 and 100000 death annually (Chaya, Nada and Karan Helsing 1995). Jones et al (1987) had reported that there is a clear trend towards lower abortion rates when women use effective contraception. If no contraceptives were used 31.2 abortion could be expected by a sexually active woman between ages of 17-44. Only 0.3 abortions would be expected if the woman uses an effective way of contraception (Ory, Forrest and Lincoln 1985).

2.4.2- Contraceptive use and Maternal mortality

Maternal mortality is only the tip of the iceberg of maternal morbidity and ill health. A women's life time risk of dying of maternal causes depends on both on the chances of dying during a given pregnancy and the frequency of exposure to that risk, thus a decline in the number of births will reduce maternal death. A study in Bangladesh indicated that the maternal mortality would decline by one third if births were confined to women between the ages of 20 and 39, who were having their first through fifth births(Trussel and Pebley 1984). A Worldwide assessment of women's sexual and reproductive health reveals that in industrialized countries women face low level of reproductive risk. Over 75 percent of the women use effective contraception in these countries and the average family size is low and

MMR is less than 1 in 17000 (Chaya, Nada and Karan Helsing 1995). Evidence from around the world shows that the risk of maternal or infant illness and death is highest in four specific type of pregnancies, ie, pregnancy before the age of 18, pregnancy after the age 35, pregnancy after fourth and pregnancy less than 2 years apart. Pregnancy in adolescents and after the age 35 involve life threatening complications such as hemorrhage and high blood pressure. Closely spaced births may contribute to malnutrition and other maternal health problems.

2.4.3- Contraceptive use and child survival.

An infant born to a teenager mother is 24 percent more likely to die in the first month of life than an infant born to a mother aged 25-34 years. The excess mortality is 37 percent for the remainder of the first year of life and 33 percent in early childhood. A badly spaced birth raises the average chances of dying in infancy by about 60-70 percent and the chances of dying before the age of 5 by about 50 percent (Hobcraft , 1987). Spacing of less than 2 years between births are hazardous because of low birth weight, poor nutrition shorter period of breast feeding, more competition for family resources and care(Chaya, Nada and Karan Helsing 1995).

2.4.4- Other health benefits

Early childbearing and repeated child births have been associated with increased risk of cancer cervix (Aras RY and Nalini P Nair. 1995). Closely spaced births contribute to malnutrition and health problems to mother and low birth weight babies, poor nutrition and short period of breast feeding to the child.

2.4.5- Non contraceptive benefits to the women's health

Some methods provide benefits beyond the control of fertility. Condoms and spermicides prevent the spread of Sexually Transmitted diseases(STDs). High levels of

infertility are generally linked to STD. African countries with large incidence of STDs have the lowest prevalence of contraceptive use. Oral contraceptives reduce the menstrual problems and protect against PID (Spinillo A et al 1996), cancer of the uterine lining, cancer of the ovaries, anemia and Rheumatoid arthritis. Contraceptive use enhances the sexual health by avoiding the fear of pregnancy.

2.5- Contraceptive use and discontinuation

More than one women in every five who wanted to avoid pregnancy, is not using contraception. The potential demand for Family planning is large (Robey,B et al 1992).

Abortion rates remain high in both developing and developed countries reflecting the lack of availability, low acceptance or high discontinuation and high failure rates. Reported discontinuation rates for reversible methods are high, ranging from 30-80 per cent for the birth control pills, and 15-60 percent for IUD after 1 year use (Kreager, 1977). High discontinuation rates may imply user dissatisfaction because of either real or perceived morbidity. Studies on use effectiveness have shown that the common reason for discontinuation is the perception of method associated side effects (Jain and Sivin 1977, Bhatia et al 1980, Akbar et al 1982, Rob et al 1987, Othman 1994).). A study in Yugoslovia had shown that 56 per cent of former pill users gave physiological side effects as the reason for discontinuation, and 42 percent of the IUD users cited excessive bleeding. Irritation and unpleasant to use were the reasons cited by 52 percent of spermicide users and 44 percent of the condom users were against condoms because of their negative experiences attributed to gender differences in their relations (Raseric 1994). Health concern including side effects were given as the reasons for discontinuation (Ali and Cleland 1995, Datey et al 1995, Anh Dang 1995, Trong H A. et al 1995, Rajeswari N.V. and J.B.Hasalkar March 1996).

2.6- Quality of care in Family planning

In 1960's birth control was a priority among all planners that the means used to achieve it did not always consider the individual's rights under the human rights charter, and for the same reason, these efforts did not produce the expected results. During 1970s and 1980s such policies were re-evaluated and in the 1990s with the concepts of reproductive health and rights taking the centre stage, the need to avoid target oriented programs that imposed specific contraceptives methods on the community, especially the women, to integrate contraceptive services with in a comprehensive women's health care program and to emphasize the importance of quality of care, became accepted (Faundes and Hardy, 1995).

Family planning administrators increasingly realized that enhancing contraceptive prevalence has limited effect on the fertility rates if quality of care is lacking (Barbara, 1998, Gangopadhyay B, 1997). There have been reports to indicate that FP services are inadequate in 80 out of the 95 developing countries. These 80 countries contain 58 percent of the population (Segal 1989).

A frame work for assessing the quality of care in family planning programs was developed by Bruce consisting of 6 elements, namely, choice of methods, information given to the clients, technical competence, interpersonal relations, follow up and continuity mechanism and the appropriate constellation of services. Improvements in various dimensions of quality would result gain at individual level (Bruce 1990). Analyzing six element of quality with respect to fertility, another study found that improvement in quality of services by enhancing the choice of contraceptive methods available in the country would increase the overall practice of contraception and this would result in fertility reduction (Jain, 1989). A study on the family planning program in rural poor community in Tamil Nadu

showed the various aspect of quality of program lacking. Training of the providers were inadequate, their knowledge about new technology was nothing, there were no check up or counseling before method introduction, practically no follow up after adoption, limited choices in the national program, incentives which enhances the quantity not the quality and poor performance of the Information Education Communication (IEC) program were all obvious (Ravindran,1993).

2.7- Reproductive morbidity in contraceptive use

The contraceptive benefits for the reproductive health of the women have been discussed widely, however by the late eighties studies had begun to report on the reproductive morbidity associated with contraceptive use. The pattern of contraceptive use changed in many developing countries. Sterilization, especially female has been the most favored method in several national programs. Spacing methods like, the condom, the Intra-uterine device (IUD) and Oral Contraceptives(OCs) were minimally used. The fear of unwanted pregnancies is a powerful motivation for contraceptive use. High contraceptive prevalence does not mean that people like it or always deal with it rationally. Often it is tolerated because of lack of alternative choices.

The analysis of contraceptive users in major studies on gynecological morbidity have shown the relationship between contraceptive use and reproductive morbidity.

A study conducted by Shenoy, Shenoy and Gopalakrishnan(1995) in five panchayats of Thiruvananthapuram district on reproductive health and gynecological morbidity indicates the strong association between contraceptive use and lower abdominal pain and Pelvic Inflammatory Diseases(PID). Persons belonging to the low socioeconomic status (SES) had a 2.8 time higher risk of falling ill as compared to high SES women. An analysis of the contraceptive users showed that urban women were three time more likely to under go post

patrum sterilization (PPS) compared to rural women. Women with high SES and manual laborers were 2-3 times more likely to undergo PPS and the level of education was not associated with PPS. Women with PPS had 26 times higher risk for illness.

Another study in south India, Karnataka reports on the relationship between gynecological morbidity and contraceptives use (Bhatia and Cleland, 1989). Sterilized women were more likely to report all problems except menstrual problems. In the multivariate analysis, the odds ratio of contraceptive users relative to nonusers was 1.57 for vaginal discharge and 2.50 for lower abdominal pain or discharge with fever. The statistical association of sterilization with infection may be procedure related. The tubectomy procedure may introduce infection if high standards of hygiene are not maintained. The same study also found that personal hygiene remained significantly associated to menstrual disorders and RTI (also in study by Apte H,1999). This has got far reaching implication in India's family planning programs, which put a major emphasis on female sterilization.

Another study on the levels and determinants of gynecological morbidity in a district of South India (Bhatia and Cleland Bhagavan and Rao, 1997) shows that significantly higher proportion of women who had under gone sterilization reported dysmenorrhoea than those who were not using any contraception. Urban and sterilized women had higher incidence of laboratory diagnosed vaginitis. Laboratory diagnosed vaginitis were higher than self reported (56 percent and 36 percent respectively). This can be due to asymptomatic nature of the infection or due to non reporting. Some evidence exists that untreated bacterial vaginosis is a risk factor in PID (Moi, 1990)

A community based study of gynecological and related morbidity (Younis et al 1993) in rural Egypt had 91.4 percent clinical response for examination and the prevalence of contraceptive use were 43 percent. Most of the women, 97 percent of the women who

responded to clinical examination, were suffering from at least one morbidity. Genital prolapse was diagnosed in 56 percent, RTI in 52 percent and abnormal cervical cell change in 11 percent and UTI in 14 percent of the women. The risk of RTI was 1.79 times higher in IUD user than a non user. RTI was significantly higher among women with less hygienic practices with an odds ratio of 1.66. Every increase of one age increase the risk of prolapse by 7 percent. Prolapse increase the chances of RTI almost four times. For every increase in the number of births, the chance of prolapse increased two times. The high morbidity was common in uneducated and low socioeconomic status women. It was also found that IUD use among women in addition to sexual activity is associated with higher risk of nonspecific vaginitis (Amsel et al.,1983). The contamination during the insertion procedure may be a factor in infection during the first month .

A study on reproductive tract infection in family planning population in rural Bangladesh had a 22 percent report for RTI. Among the symptomatic women examined, 68 percent had clinically or laboratory diagnosed infections. The likely chance for reported symptoms were 4 times higher with IUD or tubectomy users and it is seven times higher for the examination confirmed findings (Wasserheit, 1989, Teles E etal 1997).

A study on contraceptive choices and reproductive morbidity in Istanbul by Bulut et al (1997) noted that 37 percent women reported morbidity including backache and 81 percent reported morbidity when a check list of 3 months recall administered. Morbidity levels were found to be higher when self reported morbidity was considered instead of that indicated by medical examination for almost all conditions of reproductive morbidity except in the case of pelvic relaxation and menstrual disorders. The reason for non use of modern methods was stated to be health risks. One percent of withdrawal method users and 36 percent of IUD users mentioned the fear of side effects as the major reason for discontinuation. Switching was more common among those using withdrawal or the

traditional rhythm or the IUD. Slightly less than a quarter (23 per cent) of the acceptors of IUD switched away from it with 35 per cent of those who switched stating the fear of side effects as the reason for switching. Among those who practiced withdrawal fourteen per cent switched to other options and of these, about half (50 %) gave fear of pregnancy as the main reason for change. IUD use was found to be more in association with menstrual disorder, and not with PID. RTIs were found to be more common in the age group 25-34yrs and when menstrual hygiene is poor. Pelvic relaxation more common in older age group and when the parity is more.

An international study from Sweden on the association between contraceptive use and Human Papilloma virus infection indicate the high correlation between high dose of oral contraceptive pill use and Human papilloma virus infection (Sikstrtom et al 1997). In another study by Dong W and others observed that even low dose combined oral contraceptive pill use produce slightly but significantly higher blood pressure (Dong et al 1997). They have adviced the need for screening before contraceptive prescription. A study on the risk of ischemic stroke shows that the risk is more if the women had history of migraine and particularly if she also took oral pills (MacGregor and Guilleband,1998).

A study from USA on risk factors for symptomatic urinary infection in young women had shown higher incidence of UTI with Diaphragm with spermicide use (Hooton et al 1996). Another study from USA on condom use and first time UTI showed that unlubricated condom use was strongly associated with first time UTI (Foxman B et al 1997)

A study to determine the prevalence of asymptotic and unrecognized genital tract infection among women attending a family planning clinic in rural Africa revealed that 63 percent had at least one infection, most of it are asymptomatic and symptomatic are often

unrecognized (Wilkinson et al 1997). Another study among adolescent girls in rural area of south east Nigeria had shown a high incidence of RTI (Brabin et al 1995).

Perforation of uterus following IUD insertion in the post partum period were studied in Turku university central hospital, Finland. Among three cases of perforation of uterus, one underwent laparotomy and two underwent laparoscopy to treat the condition (Kiilholme, et al 1990).

2.8- Summary of Literature review

Review of literature on contraceptive practices and reproductive morbidity had shown that contraceptive use has both beneficial effects as well as increases the chances for reproductive morbidity. The benefits of contraceptive practice are prevention of unwanted pregnancies, unsafe abortions and reduction of maternal risk. It had the effect on other basic elements like safe mother hood, child survival, infertility, sexual health and prevention of STDs.

On the other hand, the high incidence of reproductive morbidity in the context of contraceptive use cannot also be ignored. Contraceptive use increases the chances for RTI,UTI, menstrual problems and other related morbidity conditions. This has considerable implications for the health of women.

Chapter 3
Methodology

Introduction

This chapter explains how the study was carried out and the constraints and limitations encountered. The aim of the study was to investigate the extend of symptoms suggestive of reproductive morbidity among women in the reproductive age group who were both users and non-users of contraception and to study the service related factors associated with the morbidity.

3.1-Research questions

Is there an increased reproductive morbidity in relation to contraceptive use?

Is there a difference in morbidity associated with temporary and permanent methods that contribute to the differentials in contraceptive practice?

Does the reproductive morbidity contribute to nonuse or limited use of contraceptives?

How much do certain service related factors contribute to high reproductive morbidity?

3.2- Objectives

3.2.1- Main objective

To estimate the extent of self reported reproductive morbidity among contraceptive users, and to analyze the possible service related determining factors that might have influenced the morbidity.

3.2.2- Sub Objectives

To examine the differences, if any, in perceived morbidity among the permanent and temporary contraceptive users that contribute to differentials in contraceptive use.

To examine if the perceived morbidity contributes to the limited, non use or discontinuation of method.

3.3- Study design

Cross sectional survey was done among the contraceptive users and non users to find out the symptoms suggestive of five reproductive morbidity conditions.

The five reproductive morbidity conditions studied include reproductive tract infections (RTIs), Menstrual problems, UTI (urinary tract infections), prolapse and fistula.

Case studies were undertaken among a series of oral contraceptive users and Condom (Barrier contraceptive) users. Women who had used these contraceptives continuously for 6 months were few in number and these were insufficient for a detailed morbidity analysis. Therefore, individual case studies were undertaken for the users of these two methods. The studies explore the characteristics of the women who accepted these methods.

Both qualitative and quantitative methods were used for data collection. Quantitative data were collected by individual interview with questionnaire (annexure 2) to measure the reproductive morbidity among contraceptive users and non users and to see the morbidity relation with different study variables.

Qualitative data were collected using in-depth interviews among the users of oral pills and condoms (guidelines for these in-depth interviews are included in annexure 3)

3.4- Study location

The study area was the MCH unit at Pangappara. The Pangappara MCH unit is a Primary Health Center (PHC) and the Re Orientation Medical Education(ROME) PHC

under the medical college, Trivandrum, which is located at the urban periphery of Trivandrum. This PHC unit has 10 subcenters. Three subcenters from this unit were selected by a simple random procedure. There is not much variability among the 10 subcenters in percentage distribution of different contraceptive methods. Most of the study area is covered by the Trivandrum Municipal corporation water supply and sanitation facility .

The total population of the study area was 68282, comprising of about 61 percent of the total population of the main PHC (112642). The eligible couples (ECs) in the study area were 4536, which was 35 percent of the total ECs in the main PHC. The couples protected by different methods as on June, 1998 were, 74.5 per cent protected by tubectomy, 0.79 per cent by vasectomy, 2.2 per cent by IUD, 3.9 per cent by conventional contraceptives, 1.0 per cent oral pills, and 17.5 per cent of non users.

3.5- Study population

The study population consisted of ever married women in the reproductive age group, 15-44 years. Three groups of women were selected for the study.

Group1- All women those who had accepted Intrauterine device (IUD) and female sterilization during the time period June, 1996 to June, 1998 were enrolled for the study. All women who had at least one child and were non users of any modern method of contraception from June 1996 till the date of interview and not suffering from any other major diseases were selected as non users of contraceptives.

Group2- To study the morbidity in long duration sterilized women, a 25 percent sample of women from those who have accepted female sterilization in the last 8 year period before June 1996 were selected.

Group 3- Case studies were done on two cases each of oral pill users and condom users.

3.6- Sampling method and sample size

Simple random selection of the three subcenters were done by lottery procedure from among the 10 subcenters under the main PHC. From the sub center register a list of all women in the age group 15-44 years, those who had accepted IUD and female sterilization during the June 96 to June 98 and non users any modern methods from June 1996 to till date of interview were prepared. All these women were chosen for the study. There were 79 IUD subjects, 163 female sterilization acceptors and 89 cases of non users in this list.

Another list of women who had accepted sterilization during the 8 year period from June 88 to June 96 was prepared. A random sample of 25 percent of these women were selected to study the long term effects of sterilization. This comprised of 192 women. The total sample studied for morbidity assessment was 523 women in the reproductive age group of 15- 44 years.

This list was verified with the list of PHC for confirmation. The subcenter list regarding the contraceptive status of the each house hold were complete on the type of methods they were using, though detailed information on other aspect of contraceptive use were not there.

For the case studies, the women were selected only if they had used the same contraceptive for at least for a minimum period of one year and a purposive sampling consisting of two cases each of oral pills and condom users was done.

A two year period of June 1996 to June 1998 were fixed for the study because of two reasons. A current cross sectional survey of a sample population will provide enough

cases for morbidity study among temporary methods users only if a large population is covered. The prevalence of temporary methods is very low. Again current users are those with out too many problems associated with contraceptive use and therefore are likely to continue, while those with morbidity usually tend to discontinue use. This may result in a distorted picture of morbidity.

Secondly, though the study was done in January 1999, a cut of date of those accepted up to June 1998 were fixed in order to reduce the sample loss to the study of one of the major morbidity conditions viz. menstrual problems. The major type of sterilization was post partum (with in the first 6 week following delivery) sterilization in the state. If cases selected were in the immediate post partum period those subjects would be in the amenorrhoea phase, thus reducing the sample size to study menstrual problems. Moreover most of the morbidity among contraceptive users is related to the menstrual cycle.

3.7- Research tools

A questionnaire with open and close ended questions was used to interview individual women. Questions were structured to obtain information on the main study variables.

3.8- Study variables

1- Socioeconomic characteristics-The subjects were classified into lower, middle, and upper status groups. SES classification was done by considering 6 objective criteria along with few subjective findings at the time of house hold visit. A maximum score of three and a minimum of one was given to each of the 6 different criteria. The six criteria selected were education of the woman, employment, monthly income of the family, type of house,

number of rooms in the house and the presence of means of media communication like television.

2- Educational level- Number of years of formal school education was taken into consideration here. Then the educational status was grouped into six groups. These groups were; no formal school education, 1-4 years of schooling, 5-7 years of education, 8-10 years of education, 11-15 years of education and 15 and above years of education.

3- Demographic characteristics- Current age of husband and wife, parity (number of live births and number of surviving children), abortions or MTPs, sex of children –male/ female, gap between pregnancies, any problem related to last child birth, previous history of cesarean section and still birth.

4- Contraceptive history- Type of method accepted, its duration of use, continuation status, reason for choosing the method, for non use, for discontinuation in ever users and regret of sterilization.

Obstetric status of the women at the time of contraceptive acceptance- like the contraceptive was accepted along with undergoing an MTP (post MTP) or during the post partum period (within 6 weeks after delivery) or during the interval time.

Place of contraceptive acceptance- like sterilization done from a camp[1], from other government hospitals and from private institutions.

Type of procedure in the case of sterilization- The three procedure now commonly used are the laparoscopic sterilization, minilaparotomy and post partum sterilization (PPS).

---

[1] Camp sterilization: In the health service system almost all the PHCs will have a sterilization camp day once in a month. Such camps are organised for the benifit of communities that do not have access to specialists with the skills to perform the surgical procedures and the equipment to perform these procedures.

Person who provided the services in the case of temporary methods- The paramedical staff like the Lady Health Inspector(LHI) and trained Junior Public Health Nurse (JPHNs) can perform an IUD insertion, in addition to the doctors who can do so.

Follow up pattern after choosing particular methods- A regular follow up in a hospital set up at every 6 months are routinely advised after an IUD insertion. But only one follow up is advised 6 weeks after sterilization.

5 - Reproductive morbidity- This will be identified by symptoms suggestive of the following 5 conditions during past 3 months (October , November and December 98). The five reproductive morbidity studied are RTI , menstrual problem, UTI, prolapse and fistula.

3.9- Definition of five reproductive morbidity variables (see annexure 4)

Each reproductive morbidity condition will be assessed using the following clinical presentation of reproductive symptoms.

3.9.1- Categories of menstrual problem

Dysmenorrhoea or painful menstruation.

Menorrhagia-prolonged duration of bleeding of more than five days and excessive bleeding with history of passing clots.

Polymenorrhoea- frequent menses less than 21 days duration, either excessive not.

Oligomenorrhoea- duration of bleeding less than 3 days with scanty periods or spotting.

Delayed cycles- more than 45 days duration.

3.9.2- Categories of RTI

Upper RTI- pain in iliac fossa or lower abdominal pain with associated vaginal discharge and with or without associated fever.

Lower RTI- vaginal discharge with associated itching or irritation, white or colored discharge with or with out foul odor.

3.9.3- Categories of UTI

Lower UTI- disuria (pain or burning sensation while passing urine) and frequent urination, with or with out incontinence (leakage of urine when coughing or sneezing).

Upper UTI -recurrent dysuria with fever, back pain and high coloured urine.

3.9.4- Symptoms of prolapse

A feeling of something coming out. Only symptoms suggestive of second or third degree prolapse were taken into consideration here. Because incontinence which is an early symptom of first degree prolapse can occur with UTI as well. Because of the diagnostic difficulty in self reported symptoms, first degree prolapse was not considered here in this study.

3.9.5- Symptoms of fistula

Constant leaking of feces or urine from the vagina or soiling of cloths.

3.10- Pre testing of the questionnaire

This was done in the 2 nd week of December and necessary modifications were made to the questionnaire to answer the study objective. The questionnaire was not translated into the local language as all the studied women were interviewed by the investigator herself, who is a native speaker of Malayalam, the local language.

3.11- Data collection strategy

Between 10-20 individuals were interviewed per day. Information was collected from the study subjects, and no other substitute for the informants was considered. Confidentiality

was ensured to the subjects. Each interview took 30- 45 minutes. One woman who had undergone sterilization six years back was not willing to participate in the study. This lady was excluded and the one next in the list were chosen for interview. Interviews were done for six days in a week, barring Sundays. The households were identified with the help of the JPHNs working in that area.

3.12- Data storage and analysis

Data entry in a computer was done simultaneously while the interviews were being conducted. This data was then cleaned for data entry errors and analyzed using the statistical package SPSS.

The statistical procedures used were frequency tables, bivariate analysis with chi-square, and Fisher's exact test. For multivariate analysis, multivariate logistic regression was used.

3.13- Constraints and limitation of the study

The study was based only on self reported morbidity. No clinical and laboratory verification was undertaken to validate self-reported morbidity. Since this is a cross sectional survey the problem of inferring causation from association does exist. This study was proposed to study the morbidity in all modern methods of contraceptive users. But because of the inadequate sample size for a morbidity study among the oral pill users and condom users, case studies were undertaken for this group. A cut off date that is fixed for six months before the date of commencement of the study was fixed for various reasons. As a consequence immediately occurring morbidity associated with contraceptive use could not captured by the study.

3.14- Strengths of the study

The study was conducted by a single investigator with medical background and experience in the field of gynecology.

Chapter 4
Results

Introduction

Contraceptive user group- This group refers to women who have either accepted an IUD or female sterilization. The temporary methods in this study refer to IUD and permanent methods to female sterilization.

Total reproductive morbidity- A woman is considered to have total reproductive morbidity if she reports any one of the symptoms suggestive of the four different reproductive morbidity ie, RTI, menstrual problems, UTI and prolapse (As there were no women with symptoms suggestive of fistula in the study population, this was not considered in identifying women with reproductive morbidity). Many people have reported more than one form of morbidity.

The findings of quantitative descriptions are presented in four sections A,B,C and D. This is followed by the results derived from the qualitative analysis of the case study on oral contraceptives and condom users.

Section A- This section has the findings of the socioeconomic and demographic characteristics of the study population. The next three sections B, C and D have the results pertaining to the stated objectives.

Section B- Reproductive morbidity among the contraceptive users and nonusers are presented here. The contraceptive user group was re-categorized as IUD and female sterilization and the morbidity conditions were assessed among these groups.

Section C- This section details the results pertaining to clients' satisfaction with IUD and female sterilization, and the reasons for discontinuation and non use.

Section D- The results of certain service related determinants like, place of sterilization, type of sterilization, nature of follow-up, personnel providing the service and the duration of use,. that may influence reproductive morbidity are reported in this section.

Section A

4.1- Sample population

Table 4.1 shows the distribution of the various categories in the studied population. A total 523 subjects were studied to examine the reproductive morbidity. This includes 163 cases of recent female sterilization acceptors and 192 long term acceptors, 79 cases of IUD acceptors during the period June, 1996 to June, 1998 and 89 cases of non users from June, 96. Case studies were conducted among two cases each of oral contraceptive pill and condom users.

Table 4.1 Distribution of studied population by use category

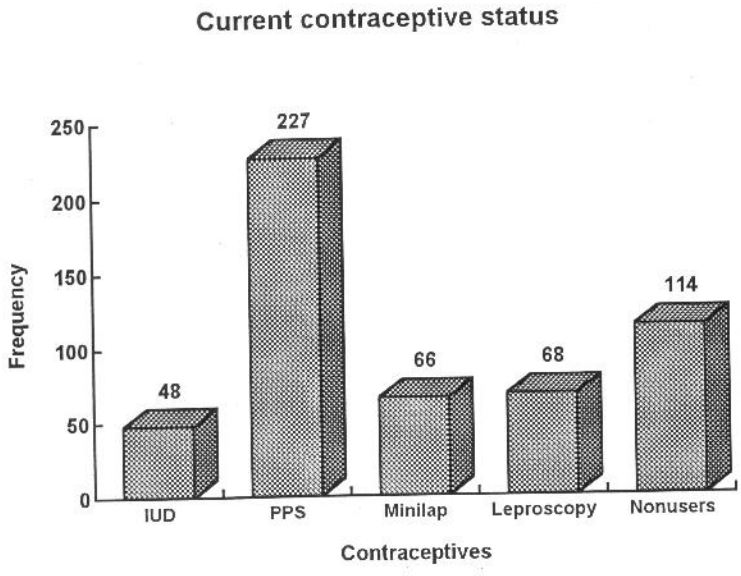
Methods	June 96-98 June	1988-1996	Case study	
Female Sterilization	163	192	Condoms	2
IUD	79		Oral Pills	2
Nonusers	89			
Total	**523**			**4**

4.2- Current contraceptive status of the studied population

Figure 4.1 shows the current contraceptive practices in the studied population. There were 48 cases of IUD users currently continuing use. During the two year period 31 IUD users discontinued use. Of this thirty one women, 25 became non users and 6 accepted sterilization. Thus there were 114 women currently not using any contraceptives.

Sterilization cases include 227 cases of Post Partum Sterilization (PPS), 66 cases of minilaprotomy (minilap) and 68 cases of laparoscopic sterilization's .

Figure 4.1 Current contraceptive status of the respondents.



4.3- Socioeconomic characteristics

Table 4.2 shows the Socioeconomic and demographic characteristics of the respondents.

4.3.1- Socioeconomic status (SES)

Using the predefined categorization, 44.9 percent (235 cases) of the sample belonged to the middle SES group and 34.2 percent (179 cases) low SES group. Upper SES group consisted of 20.5 percent (109). This variation from the routine finding that any community will have higher proportion of low SES group may be a peculiarity of the study area which is urban in character.

4.3.2- Educational level

Literacy rate of women in the study population was found to be high as it is also in the case of the state of Kerala. Only 0.8 percent (4 cases) of the sample had no formal school education, 99.2 percent of the studied population had formal schooling.

More than half the sample (50.5 percent or 264 cases) had 8-10 years of school education and more than a quarter had more than 10 year of schooling (28 .9 percent or 151 cases).

4.3.3- Religion

Hindus constituted 85.9 percent of the sample. Christians were 6.9 percent and Muslims were 3.6 percent of the studied sample. Households with husband and wife from two different caste were 3.6 percent.

4.3.4- Occupational status of the women

In the sample 89 percent of the women were housewives. Six per cent were wage earners and 5 percent were salaried employees. Husbands' employment was reported for 65.2 per cent of the women as wage earners, 17.8 per cent as salaried, 10.3 per cent involved in business, 5.2 percent employed outside the country and the rest, 1.5 percent reported as unemployed.

4.4- Demographic characteristics

4.4.1- Age distribution of the subjects

Table 4.2 shows the age distribution of the study population. Majority of the respondents, 39.2 percent (209 cases) are of the age group 25-29 years. Women in the age group 30-34 years comprised 27 percent (141 cases) and 14.7 percent (77) were in the age group 35-39 years. The extreme age group of 40- 44 consisted of only 5 percent(26 cases) of the sample and there was only one woman in the 15-19 age group. The age distribution of the users and non users was similar. A majority of non uses were in the age group 25-29 years (49.9percent) and 27 percent in the age group 30-34 years.

Table 4.2 Socioeconomic status and demographic characteristic of the respondents.

Characteristics	Percent	Characteristics	Percent
Socioeconomic		**Demographic**	
Education women <1	0.8	Age 15-19	0.2
1-4	5	20-24	14
5-7	11.9	25-29	39.2
8-10	50.5	30-34	27
11-15	28.9	35-39	14.7
>15	3.1	40-44	5
Economic status		Parity 0	0.2
Lower	34.2	1	23.5
Middle	44.9	2	66.9
Upper	20.5	3	8.4
Religion Hindu	85.9	4	0.8
Christians	6.9	Mean age of marriage	21.87
Muslims	3.6	Mean age of pregnancy	22.41
Inter cast	3.6	Spontaneous abortions	10.9
Occupation House wife	89	Still birth	1.9
Waged	6	Home delivery	3.8
Salaried	5	Previous Cesarean Section	13

4.4.2- Parity of the respondents.

About two thirds (66.9 %)of the respondents were with two children and 23.5 percent had only one child. Those with three children were 8.4 percent and 0.8 percent had four children. Those with out any children were 0.2 percent (one case). This was an IUD user, who had one abortion and accepted IUD after that.

4.4.3- Still birth and home delivery.

In the studied population, 1.9 percent of the women had at least one experience of still births, the women who had at least one home delivery was 3.8 percent (20 cases) and those with at least one cesarean section was 13 percent (68 cases).

Section B

4.5- Reproductive morbidity among contraceptive users and non users

The total sample that was analyzed in this section was 498 cases. This includes 409 current contraceptive users (48 IUD and 361 sterilization cases) and 89 non users.

There were 20 cases of amenorrhoea in this sample and these were excluded for menstrual problem analysis.

4.5.1- Total reproductive morbidity and contraceptive use

Table 4.3 has the result of bivariate analysis of reproductive morbidity among the contraceptive users and non users. Table 4.4 has the results separately for the IUD users, sterilization users with non users.

The total morbidity was 56.7 percent in the contraceptive user group as against 23.9 percent among the non users. Total morbidity was again higher among IUD users, 62.5 percent against 56 percent among sterilization cases. Total reproductive morbidity (any one of the four morbidity conditions) was associated with contraceptive use, ($p < .001$) when use was categorized into three groups and when the IUD and sterilization users were clubbed together as well.

4.5.2- Five type of reproductive morbidity conditions and contraceptive use

A statistically significant association was found between contraceptive use status and three reproductive morbidity conditions; menstrual problems, RTI and UTI. The statistical significance persisted even when the contraceptive use status was re-categorized as IUD users, sterilization users and non users. However, in the re-categorized group, UTI was no

longer significant. This may be because of the fewer number of cases with UTI in the two comparison groups.

Forty one percent of the contraceptive users and 12.8 percent of the non users reported menstrual problems. Among contraceptive users, 30.1 percent reported symptoms suggestive of RTI and 11.2 percent of the nonusers reported RTI symptoms.

Both RTI and menstrual problems were reported more frequently by the IUD users, 37.5 and 48.9 respectively against 29.1 and 39.9 percent in the sterilized group. Symptoms suggestive of prolapse among the contraceptive users were also (3.4 percent) minimum.

There were no cases of fistula in the studied population. In two cases immediate complication had occurred during procedure. In one case of IUD, insertion perforation of uterus had occurred at the time of insertion, but diagnosed early and treated immediately. Secondly, in the case of one female sterilization procedure done at the PHC, bladder injury occurred and the case was diagnosed and referred to a tertiary care center and treated promptly. None of these women developed fistula.

4.5.3- Categories of RTI, menstrual problems, UTI and contraceptive use

When the categories of morbidity were analyzed, upper RTI and lower UTI had statistically significant associations with contraceptive use. The statistically significant association was weakened when the contraceptive use status was re- categorized as IUD, sterilization and non users.

Of the menstrual problems studied, dysmenorrhoea had a statistically significant association with contraceptive use. Both dysmenorrhoea and menorrhagia were significant when these two conditions were looked separately among the IUD and sterilization with

reference to the non users. Dysmenorrhoea is more common among sterilization users (22.1 Vs 19.1 percent) and menorrhagia is more frequent among IUD users (25.5 Vs 9.3 percent).

Table 4.3- Bivariate comparisons of reported reproductive morbidity and contraceptive use.

Reproductive Morbidity	IUD+ Sterilization (n= 409)	Non users (n= 89)
RTI	30.1 ***	11.2
Menstrual problems	41.0 (400) ***	12.8 (78)
UTI	10*	3.4
Prolapse	3.4	3.4
Fistula	0	0
Upper RTI	7.8*	2.2
Lower RTI	14.9	9.0
Polymenorrhoea	9.3(400)	3.8(78)
Menorrahagia	11.3(400)	5.1(78)
Dysmenorrhoea	21.8(400) ***	1.3(78)
Upper UTI	1.2	0
Lower UTI	9.5*	3.4
Total reproductive morbidity	**56.7** ***	**23.6**

n = Number of cases in each category.

25 cases of IUD who discontinued use and currently became non users, were removed from the analysis.

'n' is different for menstrual problems analysis which is given in the brackets against each category, because 20 cases of amenorrhoea were removed from the original sample.

* = p value <.05 ** = p value <.01 *** = p value <.001

4.5.4- Reproductive morbidity among users of IUD and sterilization.

Total reproductive morbidity and four morbidity conditions analyzed among IUD and sterilization users showed that none of these condtions were statistically significant between these two groups. IUD users reported a higher percentage of morbidity.

Table 4.4- Bivariate comparisons of reproductive morbidity among IUD and Sterilization and non users.

Reproductive Morbidity	Non users (n=89)	IUD (n=48)	Sterilization (n=361)
RTI ***	11.2	37.5	29.1
Menstrual problems ***	12.8 (78)	48.9 (47)	39.9 (353)
UTI	3.4	10.4	10
Prolapse	3.4	0	3.9
Fistula	0	0	0
Upper RTI	2.2	10.4	7.5
Lower RTI	9.0	20.8	14.1
Polymenorrhoea	3.8(78)	10.6(47)	9.1(353)
Menorrahagia**	5.1(78)	25.5(47)	9.3(353)
Dysmenorrhoea***	1.3(78)	19.1(47)	22.1(353)
Upper UTI **	0	6.3	0.6
Lower UTI	3.4	6.3	10
Total morbidity* **	**23.6**	**62.5**	**56**

n = Number of cases in each category.

25 cases of IUD who discontinued use and currently became non users were removed from the analysis.

'n' is different for menstrual problems analysis which is given in the brackets against each category, because 20 cases of amenorrhoea were removed from the original sample.

** = p value <.01 *** = p value <.001

4.5.5- Morbidity between those who discontinued IUD, those continuing and nonusers

There were 25 cases of IUD in the studied sample who discontinued the use and became non users and 48 cases were continuing the use. These cases were analysed for the total and four reproductive morbidity conditions. Only menstrual problem showed a statistically significant association with IUD continuation status ($p < .01$). Menstrual problems were more among the continuing users than those who discontinued. All other morbidity conditions were not statistically significant (Table 4.5).

The percentages of women with reproductive morbidity was higher even in the discontinued IUD group (45.8 %), when compared to those among the non users of any contraception (23.6 %). A statistically significant association was noticed when IUD discontinuers were compared with the non user group($P<.01$), with respect to total reproductive morbidity and UTI (Table 4.5).

Table 4.5- Bivariate analysis of reproductive morbidity among those discontinued IUD, with those continuing IUD and non users.

Reproductive morbidity	Continuing IUD	Discontinued IUD	Discontinued IUD	Nonusers.
RTI	37.5	24	25.0	11.2
Menstrual problems	47.9**	16	16.7	11.2
UTI	10.4	12	8.3***	3.4
Total morbidity	62.5	48	45.8*	23.6

* = p value <.05 ** = p value <.01 *** = p value <.001

4.5.6- Results of multivariate logistic regression of total reproductive morbidity, RTI and menstrual problems with selected characteristics of the women.

Table 4.6- represents the logistic regression results of the three dependent variables, total reproductive morbidity, RTI and menstrual problems with selected characteristics of the women. The independent variables included in the logistic regression were SES, occupation of the women, demographic characteristics like age, parity and whether the women had undergone MTP or not, last pregnancy related complication, previous cesarean section (CS) and duration of contraceptive use.

Total reproductive morbidity, RTI and menstrual problems were statistically significantly associated with contraceptive use, with odds ratios adjusted for the other variables being 3.6, 2.6 and 4.72 respectively.

The total morbidity was 6.03 times higher among IUD users and the chances for RTI was 4.32 times higher when compared to nonusers. It is noticed that the chances for menstrual problems were 8.26 times higher among IUD users when compared with nonusers.

The sterilization group had significant total reproductive morbidity with an odds ratio of 2.39 when compared with non users. For this group RTIs were not statistically significant where as the chances for menstrual problems were 3.47 times higher than the non users of contraception.

4.5.7- Socioeconomic status and reproductive morbidity

Persons of lower socioeconomic status were more prone to morbidity (see Table 4.6). Middle SES group had a statistically significant low total reproductive morbidity when compared with lower SES group, with an odds ratio of 0.64. The chances for RTI was less among higher SES group with an of odds ratio 0.55 when compared with the lower SES group.

Table 4.6- Results of multivariate logistic regression: Dep. Variables=total reproductive morbidity, RTI and menstrual problems by selected characteristics of the women.

		Odds ratio of symptoms		
Characteristics	**reference category**	**Total reproductive morbidity**	**RTI**	**Menstrual problems**
Socioeconomic	Lower	1.00	1.00	1.00
Middle		0.64*	0.83	0.74
Upper		0.62	0.55*	0.71
Occupation	House wife	1.00	1.00	1.00
Employed		0.74	1.07	0.58
Demographic Age	<25	1.00	1.00	1.00
25-29		1.57	1.00	2.14*
30-34		1.72	1.07	2.32*
>35		1.00	1.03	1.42
Number of children	1	1.00	1.00	1.00
2		1.61	1.08	1.43
3+		1.36	1.47	0.75
No of MTP	No	1.00	1.00	1.00
Yes		1.38	1.2	1.34
Pregnancy related				
Last child birth problem	No	1.00	1.00	1.00
Yes		0.78	0.71	0.84
Previous CS	No	1.00	1.00	1.00
Yes		1.00	0.99	1.14
Duration of use	< 2 years	1.00	1.00	1.00
> 2 years		1.74**	1.68*	1.29
Contraceptive use	Nonuser	1.00	1.00	1.00
IUD		6.03***	4.32***	8.26***
Sterilization		2.39**	2.00	3.47**

* = p value <.05 ** = p value = < .01 *** = p value <.001

4.5.8- Duration of use of contraception and morbidity

Those with more than two years of contraceptive use were shown statistically significant higher morbidity with an odds ratio of 1.78 (see Table 4.6).

Menstrual problems were statistically significant in age group 25-34 years.

Section C

4.6- Differentials in contraceptive use

The total sample of 523 cases has been included in analysis for this section. This section looks into two factors. One, whether there is a limited use of temporary methods in the study community. If so, whether reproductive morbidity has contributed for limited use or non use of contraception.

4.6.1- Satisfaction with respect to temporary and permanent contraceptives

In order to study the satisfaction with respect to both temporary and permanent contraceptive methods a few indicators have been considered.

Table 4.7 shows a selection of variables to indicate satisfaction with contraceptive use. The result shows that 70 percent of the study population had accepted sterilization as a first contraceptive. They had not used any temporary methods in between. Once the family size was completed, they immediately accept sterilization. Slightly more than a quarter (26 percent) had accepted sterilization as a second time contraceptive and the remaining 4 percent accepted sterilization third time .

Of the 79 IUD acceptors during the two year period, 31 (39 percent) had already discontinued the method. The duration of use varied from one month to 2 years. The average closed birth interval for the population was 29.8 years. Seventeen percent of the

sample had used MTP. Sterilization regret was reported by 11.9 percent of those accepted sterilization.

The timing of initial contraceptive use with respect to child birth was studied. Only 1.9 percent of the sample had used any modern methods of contraception to space the first child. Contraceptives were used for the first time after the first birth by 26.4 percent of the study group. The rest, 71.7 percent had used modern methods for the first time after the second birth or after completing the family size.

The average age at marriage in the study population was 21.87 years and age at first conception was 22.41years. Thus the average waiting time for first conception was only 0.54 years. Husbands' awareness about their wives using contraceptive was very high, 99.8 percent. Only in the case of one IUD user, the husband was not aware of the use.

These indicators point to the fact that use of temporary methods is very low in the studied community.

Table 4.7 Percentage distribution of the study population by selected contraceptive use characteristics.

Indicators	**percent.**	6-Contraceptive use before first child birth	1.9 percent.
1-sterilization as first contraceptive	70	7-first time contraceptive use after first child birth	26.4 percent
2-Discontinuation rate	39	8- contraceptive use after second child birth	71.7 percent
3-Closed birth interval	29.83	9- Age at marriage	21.87 years.
4-Percent of MTPs	17.2	10- Age at first conception	22.41years.
5-Regret of sterilization	11.9	11- Husbands awareness of contraceptive use by wife	99.8

4.6.2- Morbidity and contraceptive choice

In order to see whether morbidity or perceptions of morbidity contribute to limited use or non use of different methods, the reasons for non use as well as the reasons for discontinuation were looked into. The reasons for regret of sterilization and for undergoing an MTP were also examined in the following Tables (Tables 4.8and 4.9).

Table 4.8 illustrates the reasons for non use and discontinuation. The reasons for nonuse of contraceptives were studied in the 89 cases of non users. More than two thirds (69 %) of non users reported "worry about the side effects" as the reason for nonuse and 11 percent said "it is inconvenient to accept sterilization now", though they wanted to accept sterilization at a later date. Some 8 percent said they were non users because "husband opposed the method". "Afraid of sterilization operation" was reported by 7 percent and another 7 percent said that "their husband was employed out side the country". Few women (6 %) said they "do not like the existing methods".

The reasons for discontinuation were studied among 186 ever users of temporary methods users who had discontinued use in their life time. Health problems were the major reason cited for discontinuation among 31 percent. The health problems reported were menstrual problems (14 percent), and the remaining 17 percent had symptoms suggestive of RTI and UTI, and development of general ill health after contraceptive use. Those who discontinued for next pregnancy were 24 percent, 13 percent reported method failure as reason for discontinuation.

Table 4.8- The reasons for nonuse and discontinuation of the method.

Reasons for non use	Percent	Reason for Discontinuation	Percent
Worry about side effects	69	Side effects with method use	31
Inconvenient now	11	For next pregnancy	24
Husband opposed	8	Failure pregnancy	13
Afraid of sterilization	7	Family completed	6
Husband employed out side	7	Does not like the method	5
Dosent like existing methods	6	Health workers decision	4
Wants another child	5	Period of contraceptive over	4

The percent does not add up to 100 because more than one reason for non use was reported by each of the subjects. All reasons are not shown, reasons for which the percentage was less than 4 are not shown.

Table 4.9 shows the reasons for undergoing an MTP and reasons for those who regret sterilization. Eighty six women had under gone one MTP and 6 had undergone 2 MTPs. Among the various reasons reported, 48 percent said they did not want any more children and another 48 percent said that previous child was too young. Contraceptive failure as reason for termination was reported by 8 percent and 3 percent gave the reason of exposure to drugs during pregnancy.

Those who regret sterilization were not doing so due to morbidity or fear of side effects. The major reasons was desire for a female child (21 percent) when the existing two children were male. Second common reason was the desire for son (12 percent). The death of the previous child and desire for another child were reported as the reasons by 10 percent each. The illness of the existing child were reported by 7 percent. Thus morbidity is not a factor for sterilization regret.

Table 4.9- The reasons for MTP and those who regret sterilization

Reason for MTP	Percent	Regret	Percent
Did not want any more child	48	Wanted daughter	21
Previous child too young	48	Wanted a son	12
Contraceptive failure	8	Children died	10
Exposed to drugs	3	Wanted another child	10
		Ill health of the existing child	7

The percent does not add up to 100 because more than one reason for non use was reported by each of the subjects. All reasons are not shown, reasons for which the percentage was less than 3 are not shown.

Section D

4.7- Analysis of service related determinant factors

An analysis of service related factors for those who accepted sterilization and IUD has been undertaken.

A sample of 361 cases of sterilization have been analyzed for the following four factors, namely, type of method (like Laproscopy, Minilaparotomy and PPS), timing of acceptance (like post partum, interval, post MTP/abortion), place of acceptance (Government , Private, Camp) and duration of method use (<2 years and >2 years).

The current users of IUD were analyzed for five determinant factors viz, timing of acceptance (post partum, interval, post MTP / abortion), place of acceptance (Government, Private), person providing services (doctors, paramedical), follow up pattern (regular or irregular) and duration of use.

4.7.1- Services related factors and sterilization

Table 4.10 shows the bivariate analysis of reproductive morbidity among those who accepted sterilization. Significant differences in morbidity especially, menstrual problems and RTIs exist in association with different sterilization procedures. PPS users experienced the least morbidity among the three procedures of sterilization examined.

People who had under gone sterilization from the private hospitals were less likely to report morbidity. Camp sterilizations and those accepted from government hospitals had statistically significant morbidity for menstrual problems and RTIs. Between the two, camp and government hospitals there was no significant differences in the morbidity levels.

When the duration of sterilization was more than two years the chances to develop total reproductive morbidity and UTI were more.

Table 4.10 Distribution of sterilization users by reproductive morbidity.

Determinants	**Total morbidity**	**RTI**	**⊕Menstrual problems**	**UTI**	**Prolapse**
Method type P P S (n=227)	51.1*	25.1	35.19 (n=220)	11.5	1.8
Minilap (n=66)	63.6*	43.9**	41.5(n=65)	10.6	9.1**
Laparoscopy.(n=68)	64.7*	27.9	51.5 (n=68)	4.4	5.9
Period of acceptance MTP/abortion.(n=36)	63.9	30.6	44.4 (n=36)	8.3	5.6
post partum,(n=232)	51.7	25	36.99(n=225)	11.2	2.2
interval (n=93)	63.4	37.6	45.7(n=92)	7.5	7.5
Place Camp (n=72)	66.7***	43.1**	46.5(n=71)**	12.5	9.7**
Government(n=259)	56.8	27	41.1	10	2.3
Private (n=30)	23.3	13.3	13.8(n=29)	3.3	3.3
sterilization Duration < 2Yrs (n=142)	49.3	23.9	34.8(n=135)	5.6	4.2
>2Yrs (n=219)	60.3*	32.4	43.1(n=218)	12.8*	3.7

⊕ 8 cases of amenorrhoea were excluded.

* = p value <.05 ** = p value = < .01 *** = p value <.001

n= number of cases in each category. For menstrual problems 'n' is different and this is given in brackets.

Table 4.11 shows the results of multivariate logistic regression with service related determinants. The dependent variable here was the presence of total reproductive morbidity (any one of the four reproductive morbidity)conditions. The independent variables included are age group of the respondents, SES, parity, whether the women had undergone MTP or not, problems related to last delivery, previous cesarean section, place of sterilization, type of procedure, duration of use of contraceptive and obstetrics status of the woman at time of acceptance.

Table 4.11- Results of multivariate logistic regression. Dependent variable: Total reproductive morbidity with service related determinants and other characteristics of the women.

Characteristics	Reference category	Odds ratios	Characteristics	Reference category	Odds ratios
Socioeconomic	Lower		**Pregnancy related**		
middle		0.86	LCB problem	No	
Upper		1.07	yes		0.93
Job of women	House wife		Previous CS	No	
Employed		0.64	yes		1.54
Demographic			**Duration of use**	< 2 years	
Age	<25		> 2 years		1.55
25-29		1.25	**Place**	Private	
30-34		1.37	camp		6.02***
>35		0.62	government		4.41***
Parity	1		**Period**	interval	
2		1.63	MTP/abortion		0.80
3+		1.56	post partum		1.12
No of MTP	No		**Method type**	PPS	
yes		1.54	Minilap		1.73
			Laparoscopy.		1.73

*** = p value <.001

The place of sterilization was significantly associated with morbidity. Those who accepted sterilization from a camp had a higher chance of morbidity when compared to private hospitals(odds ratio 6.02). Those who accepted from government hospitals when compared with private hospital, also had higher probability for morbidity with an odds ratio of 4.41. The type of sterilization procedure which was significant in bivariate analysis lost significance in multivariate analysis.

Table 4.12 Bivariate analysis of determinants of IUD use.

Determinants	Total morbidity (%)	RTI(%)	Menstrual problems(%)	UTI(%)
Period of acceptance MTP/abortion.(N=12)	58.3	50	50	8.3
post partum,(n=8)	62.5	50	37.5	12.5
interval (n=28)	64.3	28.6	50	10.7
Place Government (n=42)	66.7	40.5	50	11.9
Private (n=6)	33.3	16.7	33.3	0
Duration < 12 months (n=25)	48	28	44	12
13-24 (n=11)	72.7	27.3	63.6	0
>25(n=12)	83.3	66.3 *	41.7	41.7
Provider Doctor(n=46)	60.9	34.8	45.7	10.9
Paramedical(n=2)	100	100	100	0
Follow up Regular	75	37.5	50	6.3
No follow up	56.3	37.5	46.9	12.5

4.7.2- Service related factors and IUD

Bivariate analysis for IUD users indicates that longer the duration of IUD use, the higher the chance of RTI(see Table 4.12). Logistic regression using the dependent variable as total reproductive morbidity, and the independent variables; age group of the respondents, SES, parity, whether the women had undergone MTP or not, problems related to last delivery, previous cesarean section, place of sterilization, duration of use of contraceptive, person who provided the services, the presence of a regular follow up pattern and obstetrics status of the women at time of acceptance. None of these variables were statistically significant.

Case Studies

Case studies were done for two conventional contraceptive users and two oral pill users. The names of the clients and the providers have been changed to maintain their anonymity.

Case Study- 1- Conventional contraceptive user(Nirodh)

Suni, a 28 years old house wife was from a Hindu family and had schooling up to the tenth class. She was married at the age of 21 years, and her husband was a manual laborer. One month after marriage she became pregnant and now her son is 7.4 years old. One year after first delivery a second pregnancy was terminated, as the previous child was too young. She started to use a CuT after that termination of pregnancy, though her husband had fears about CuT, but she had no negative attitude towards it. CuT produced pain in the abdomen, and therefore a gynecologist was consulted. The gynecologist did a scan test and CuT was removed. She had a course of medicine, however she can not remember the duration for which she took the medicines.

The doctor advised oral pills, which she and her husband did not want to use. They felt it would produce sterility and any way it was difficult to remember to take every day. She wanted only one child, but her husband wanted two after an interval. They decided to use Nirodh, and have been using it for the last four years. Even though her husband does not like Nirodh, he continued using it, because of his concern for her health.

They get nirodh from the health worker most of the time and on rare occasions the husband get it from the private store. They practice abstinence when they do not have a stock of nirodh, because she is not prepared for a pregnancy now

She liked nirodh because it never produced any side effects and she never had a pregnancy caused by failure of the contraceptive while on use. But she has a fear that Nirodh can break and it is inconvenient to use it each time. She prefers to accept sterilization once she complete her family and for spacing she still feel IUD is good. She prefers methods that are used with medical supervision like the IUD, because she thinks if a doctor or a paramedical person inserted it, it would definitely be safe and effective. Whereas in the case of the condom, she and her husband are totally responsible for what ever happens.

She said she had pain in the lower abdomen from the time of CuT use, and now has vaginal discharge with itching and irritation. She was on treatment for this.

Case Study- 2- Conventional contraceptive user(Nirodh)

Jaya was 32 years old and has been educated up to Tenth class, and her husband has studied upto 12 th class. They are from the Hindu community and Jaya got married at the age of 28 years, and six months later she became pregnant. Her son is 2.9 years old now. The health worker advised her to use CuT during the post partum period and she also told

her about the Nirodh and Oral pills. After discussing with her husband, they decided together to use nirodh.

The health worker repeatedly told her to accept CuT, which can be inserted from a health facility. But she did not accept CuT because it was inconvenient for her to visit a hospital and nobody was available at home to look after her son. Both she and her husband feel that oral pills can produce some side effects, and both these methods have to be used all the time.

She was satisfied with nirodh because it was a method that could be used only when needed and she does not feel that contraceptive failure would result in pregnancy , nor have they experienced any incidence of condom breakage. The health worker brings the condoms to her home. They had sexual contact without condoms on occasions when stock of condom was not there. She feels that even in a failure pregnancy she will not be worried, because she wants one more child and prefers to accept sterilization after that.

Case Study-3- Oral Pill User

Suja was a 32 year old house wife, from a Hindu family and her husband was a driver of a private vehicle. She has been educated upto 10 th class. At the age of 18 she got married, five months later became pregnant. Now her daughter is 3.6 years old. Four months after first birth she became pregnant, and this was terminated. She did not tell anybody except her husband, because she felt other members would object to the termination of the pregnancy.

In the post termination week the health worker advised CuT which she did not accept because of fear about the side effects like allergic reaction. They decided to use oral pills as the husband was not willing to use nirodh. She feels that other members of her

household will never allow her to use oral pills or CuT as they feel such methods would produce side effects.

Most of the time the health worker brings oral pills to her home and her husband also gets it from outside. She had irregular spotting initially when she started the pill, later only she understood it is because of the frequent missing of pills. It was difficult to remember every day. Pills never had produced any health problems to her.

She stopped the pills after two years and six months use and waited for next pregnancy, which did not happen for another three months. She considered it to be the after effect of pill usage. She consulted a gynecologist who examined her, and to her surprise she removed a CuT and showed it to her. The first gynecologist, who had carried out the MTP, was a friend of Suja, and she said she had inserted a CuT along with MTP which she thought she will inform her later. But she forgot to do so.

She prefer to accept sterilization after second child birth, but still she has not decided. Her co sister now regrets having undergone sterilization (PPS) after her second child birth, because now her child had a tumor in back of head.

Case Study-4- Oral Pill User

Sujatha was a 31 year old mother of a five year old girl. She was working in a shop and she and her husband had been educated up to the 10 th class. At the age of 18 she got married and after eight months became pregnant. That pregnancy was terminated because she had exposure to medicine for allergic rashes. The next pregnancy spontaneously aborted. A third pregnancy happened five years later and cesarean section was performed.

In the post partum period CuT was inserted. After which she had repeated urinary tract infection and CuT was removed. The doctor advised her to use oral pills. She prefers to

have only one child, but is reluctant to accept sterilization with one child. The pill use was her own decision, she said her husband was an alcoholic and had no say in this decision and did not co operate with her in all these matters. She never forgets to take the pill.

She used to have palpitation, sweating and pain abdomen after pill use which reduced gradually. With certain brands even now she gets these side effects. For the last three years she was on pills and used to get the pills both from the subcenter and from private stores.

Discussion

From these case studies, it is clear that motivation for birth control is very high, both with the husbands and wives. However, sometimes when male responsibility is lacking, women choose to use oral pills. Two of these oral pill or condom users had previous experience with the IUD and had experienced health complications associated with it. Even so, given the high level of motivation to prevent births, these couples switched to alternatives. Another rather glaring phenomenon is the insertion of an IUD without informed consent. This results in loss of credibility for the whole system.

Chapter 5
Discussion

The aim of this study was to assess the reproductive morbidity among contraceptive users in comparison with non users. The association of morbidity in relation to use and continuation of contraceptive use has been studied. Identification of possible determinants may help to formulate strategies to reduce morbidity. The result of the study are discussed under the following headings.

- Reproductive morbidity and contraceptive use.
- The four different morbidity conditions and contraceptive use.
- Difference in morbidity associated with IUD and sterilization.
- Morbidity among discontinued and present IUD users.
- Differentials in practices associated with temporary and permanent method use.
  - ⇒ Choice of different methods.
  - ⇒ Practice of spacing between births.
  - ⇒ Satisfaction with methods.
  - ⇒ Reasons for non use and discontinuation.
- Place of sterilization and morbidity.
- Duration of contraceptive use and morbidity.

5.1- Reproductive morbidity and contraceptive use

The present study points to higher reproductive morbidity among the contraceptive users. The presence of any one of the four reproductive morbidity conditions was considered as total reproductive morbidity. The probability of total reproductive morbidity is 3.2 times higher among contraceptive users than the non users. The chance for morbidity is 6.03 time

higher for the IUD users when compared with non users, and the probability for morbidity is 4.39 times in sterilized cases.

This finding has considerable implication for the health of women. The beneficial effects of contraception or pregnancy prevention can very well be neutralized if enough attention is not paid to reproductive morbidity.

The prevalence of contraceptive use is high in Kerala. The contraceptive prevalence rate is 64 % (IIPS and PRC, Tvm, 1995). The morbidity levels are also high. In Kerala, 80 percent of the total contraceptive protection is by female sterilization. There are several reasons that can explain this paradox of high contraceptive prevalence and high morbidity. Firstly, the motivation from the couples to limit the family size and avoid unwanted pregnancies could be very high. If resources are scarce, the poor socioeconomic condition of the family may not be able to afford an additional child. The change in family pattern to a nuclear family type reduces the physical and psychological manpower support to the most vulnerable group in the family, namely the women. Childbearing and childbirth are the crucial times where women need more support from others especially from other female family members. Naturally the tendency will be to reduce burden. Here in this study the people who regretted sterilization for the want of either a female or male child said that the bad socioeconomic status at that time was the reason for choosing sterilization after first delivery and some people reported that there was nobody else available at home to cater to their needs if another child birth occurs. The alternative is to avoid the additional birth and accept contraception whatever be the consequences.

The second important reason could be Government policies. The national family welfare program had long standing compaign with stress on sterilization. The previous target oriented approach (one sterilization is equated with 3 cases of IUD in target approach),

higher incentives for sterilization (Rs.145 per individuals undergone sterilization and Rs. 7 for IUD cases), one additional increment to either the husband or wife who ever was employed in the government sector if the women accept sterilization and incentives for promoters of cases, may all have strong influences on use. A study had reported that nearly quarter of the women who had started IUD, the initial decision was not their own, but was the decision of the service providers (Perea, 1994).

Even though there are high levels of reproductive morbidity among the women of the community, early detection and prompt treatment is compromised because of the 'culture of silence' surrounding the symptoms. Because of the cultural influences, women tend to not seek any medical assistance for these symptoms. Secondly, the morbidity if not identified and treated will lead to discontinuation and possibly non use of other methods. Thus the women are exposed to the risk of unsafe abortions and high risk pregnancies.

Since a high prevalence of contraceptive use in the community exist, it is essential to ensure safety. The alternative stand here is improvement of the existing methods and introduction of new methods with less side effects and cost. Development of male methods and promoting existing methods with less side effects like condom can also improve the situation.

5.2- The four different morbidity conditions and contraceptive use

Of the four reproductive morbidity conditions considered here, the two morbidity conditions, RTI and menstrual problems had a statistically significant association with contraceptive use, with an odds ratio of 2.6 for RTI and 4.72 for menstrual problems. The IUD users are 4.32 times more likely to report RTI and the probability for menstrual problems is 8.26 times higher than among the nonusers. Those who had undergone

sterilization, the probability for menstrual problems was 3.47 times higher where as RTI was not statistically significant in these group.

The analysis shows that among the menstrual problems, dysmenorrhoea and menorrhagia were statistically significant association with IUD use and sterilization use. Dysmenorrhoea was reported by 21.8 percent of the contraceptive users and 1.3 percent of the non users. Dysmenorrhoea was higher among those sterilized than among the IUD users (22.1 Vs 19.1). A study in Karnataka had reported 15 percent of dysmenorrhoea among women in the reproductive ages (Bhatia 1989).

Menorrhoagia was reported by 11.3 percent of the contraceptive users. The IUD users reported 25.5 percent as against 9.3 percent reported by those sterilized. Four percent of the non users reported menorrhagia. These findings are in keeping with the expected side effects of IUD use as has been documented. Menorrhagia either excessive, prolonged or intermenstrual bleeding are associated with IUD use (Dutta 1988).

Previous studies indicate a variety of results with respect to the association between RTIs and menstrual problems with use of different contraceptives. This means multiple factors are responsible for these conditions.

The relationship between RTI and IUD use can be explained in two ways. Either the preexisting infection or infection after IUD insertion is more likely to ascend up because of the retained thread of the IUD in the vagina. A review of earlier studies indicate that the chance of infection in IUD insertion is more in the initial 20 days of IUD insertion (Ravindran, 1994). Secondly, the chances for attracting infection may be higher in the retained foreign body.

The increased reporting of menstrual problems by IUD users may either be due to the biological changes made by the IUD in the uterine cavity, or due to perceptions of a change in menstrual cycle which other wise is not a serious problem. The increased perception may be due to the fear of development of side effects caused by IUD use.

The association of higher chance for menstrual problems in relation to sterilization can be explained as the post ligation syndrome, where the patient will have menorrhagia, chronic pelvic pain and cystic changes in ovaries (Dutta 1988).

The association of RTIs and menstrual problems with contraceptive use implies that there is a strong need to improve quality of services. The emphasis on screening before insertion of IUD is essential, adequate training for paramedicals to identify pre existent infection and training to health professionals for maintaining sterile conditions during procedures is important. The contraceptive users should be informed about the possible symptoms of infection, so that early detection and prompt treatment is not compromised. The need for a regular follow up should be emphasized. Another factor that may be involved here is professional neglect. Even when the possibility of infection exists, professionals may either confirm it, treat and provide contraceptives simultaneously, because they do not want to lose one person from their set target (moving targets).

One of the suggestions for minimizing the chances for post ligation syndrome and subsequent menorrhagia following sterilization was that if the blood vessels adjacent to mesosalpinx are not unduly disturbed during procedure (Dutta, 1988). This points to need for adequate surgical training to reduce one of the disturbing symptoms associated with sterilization for women.

The occurrence of symptoms suggestive of prolapse (3.4 percent) were very low in this community. Symptoms suggestive of second and third degree prolapse alone were taken

into consideration. The occurrence of prolapse was slightly higher than those reported from the Karnataka study by Bhatia (3.5% Vs 0.5 %). Age, parity and obstetric trauma in home deliveries are reported as the risk factors for prolapse in earlier studies(Younis, 1993; Bulut, 1997). This risk factor is less in the studied community, 66.9 percent of the women have two children only. Home deliveries are very few (3.8 percent). In the present study the occurrence of prolapse is neither a hindrance to contraceptive acceptance, nor contraceptive use directly related to the development of prolapse.

High socioeconomic status was associated with low morbidity, this may be because of the high educational level and the hygienic practices. Health education at the time of provision is also important.

5.3- Difference in morbidity between IUD and sterilization use

Though a higher percentage of IUD users report morbidity conditions as opposed to those sterilized, this difference is not statistically significant. This means both sterilization and IUD use are associated with morbidity conditions but couples accept sterilization more often. The strong desire for a small family could be a factor.

5.4- Morbidity among discontinued and present IUD users.

There was no difference in morbidity between discontinued and present users of IUD except for menstrual problems which was more among present IUD users. The total reproductive morbidity was statistically significant between non users and past users of IUD. This means morbidity still persist even after discontinuation of IUD.

5.5- Differentials in practices associated with temporary and permanent method use

5.5.1- Choice of different methods.

Temporary methods of contraception are used minimally in the studied community. Discontinuation rate is very high for oral pills and condoms. A statistical valid examination

of the different morbidity conditions could not be done for these persons. The discontinuation rate for IUD use, among those accepted in this two year period was 61 percent.

In this sample of respondents, 70 percent had accepted sterilization as the first contraceptive. This means 70 percent had not used any temporary methods. Once they complete their family size they immediately accept sterilization to stop the family building process. A report of the UNFPA (1998) indicates that 70 percent those using contraception are sterilized in India. This is about five times higher than that of the other developing countries(Muller D1993).

5.5.2- Practice of spacing between births

The present study had a closed pregnancy interval of 29.5 months. Kerala has done poorly in birth spacing (Jejeebhoy 1996) when compared to the Govt. of India's set target in this respect, though it has achieved almost all other targets for family welfare. The birth interval was below 24 months in 35.2 percent of the population with two or more children. When the temporary contraceptive prevalence is lower than 30 percent it is difficult to achieve higher pregnancy gap (UNFPA1998).

In this study, the timing of contraceptive acceptance with respect to child birth was studied. Only 1.9 percent of the studied sample had used any modern methods of contraception to space the first child. Contraceptives were used for the first time after the first child birth by 26.4 percent of the studied population. The rest, 71.7 percent had used any modern method for the first time after the second child birth or after completing the family building. The age at marriage in the studied population is 21.87 years and age at first conception is 22.41years. Thus the average spacing for first conception is only 0.54 years.

The reason for the low spacing could be that the desire for spacing may not be so strong as the motivation for a smaller family size, where they tend to accept sterilization neglecting the morbidity possibility. It could be due to the lack of knowledge about the consequences of poor spacing, like low birth weight and poor nutritional status of the mother and child by repeated pregnancies.

5.5.3- Satisfaction with the methods

Utilization of a method and its continuation rate depend on satisfaction with the method. In the studied population 17.2 percent had undergone MTP and 48 percent of these had reported the reason for MTP as they did not want another pregnancy and another 48 percent said that the previous child was too young. This points to the fact that such people are neither using method to space their family nor accepting methods to stop family size. Sterilization regret was experienced by 11.9 percent of those who accepted it (close to the study by Platz C et al 1992). and the desire for a either female child or for a male child was the major reason. It is possible that they had accepted sterilization with out realizing its long term implications.

5.5.4- Reasons for non use and discontinuation

The non users of any type of contraceptives, 46 percent reported that worry about the side effects is the major reason for non use. Menstrual disorders and health concerns are the major reasons for discontinuation of the accepted contraceptives.

Case studies of oral pill and condom users indicate that morbidity conditions and fear about side effects were reasons for discontinuation and non use. Quality of services, especially, the aspect of informed choice, was neglected. Women tolerate the discomfort associated with contraceptive use because of the strong desire to avoid another birth.

5.6- Place of sterilization and morbidity

Multivariate analysis of the factors associated with sterilization had shown significant association with place of acceptance and duration of use. The association with follow up pattern could not be studied. There is no practice of regular follow up after sterilization.

Those who accepted sterilization from private hospitals were less likely to report morbidity conditions. The chances for total reproductive morbidity is 6.03 times higher among those who accepted camp sterilization when compared to those who accepted at private facilities. For those who accepted from government hospitals the chance of reproductive morbidity is 4.41 time higher when compared with non users. The Karnataka study (Bhatia 1989) had also reported reduced incidence of reproductive morbidity among those who delivered in private hospitals. The higher morbidity for those who accepted from the government set up suggests that the quality of care and hygienic conditions may be lower in the government hospitals or that the burden in the public sector health system is very high. Camp sterilization was associated with higher reported morbidity. The maintenance of quality of care and hygienic conditions are rendered difficult when the turn over of the cases per day are high. There is a need reduce the number of cases or increase the infrastructure facility and provision of good quality services in camps in order to reduce morbidity. Alternatively, the Govt. could share the burden for provision of such services with the private sector where the services seem to be better.

5.7- Duration of contraceptive use and morbidity

The proportion of women experiencing morbidity increases with the duration of sterilization. Menstrual problems and RTI were common among those sterilized more than two years ago. Early identification of morbidity and prompt treatment will reduce chronic

PID . This can be done by regular follow up. At present no regular follow up was advised after sterilization.

5.8- Conclusion

Contraceptives use is significantly associated with reproductive morbidity conditions. The two major contraceptives in the National program, the IUD and female sterilization had significantly high morbidity. This has major implications for the health of women.

Both RTI and menstrual problems are more among the IUD users. Sterilized women are more prone to report menstrual problems. The chances for morbidity are high in low SES group and when the duration of contraceptive use was more. The important aspect of quality of care, that is, screening before provision of methods, training regarding hygienic practices during provision of contraceptives and regular follow up are to be emphasized. For the clients, provision of information regarding the early detection of morbidity symptoms would reduce the burden of delayed care seeking and the concomitant increase in morbidity burden.

Temporary methods of contraceptives are minimally used and birth spacing is less. Morbidity and fear about side effects are the major reasons for limited use of temporary methods. Technical improvement of the existing methods and introduction of new methods with less side effects are important.

Those who had accepted sterilization from camp and government hospitals have a higher probability for reporting morbidity. There is an essential need to improve the quality of services through adequate training of professionals and supervision, improvement of infrastructure facilities and reducing the work load.

5.9- Policy implication

Improvement in quality of services with respect to contraceptive provision is important. Information, Education and Communication strategies need to be strengthened. Infrastructure facilities in government hospitals have to be improved. Technical competence is to be maintained by training and adequate supervision. Research in contraceptive technologies to improve the existing methods as well for development of new the contraceptive methods are important.

References

1. Akbar J, J . Chahraborty,N. Jahan, J.F.Philips and AP Satterth waite (1982). Dynamics of depot medroxy progesterone acetate (DMPA), use effectiveness in Matlab family planning health service project Bangladesh fertility research program, seventh Annual contributors conference, Dhaka.

2. Ali, M and John Cleland (1995). Contraceptive discontinuation in six developing countries; A cause specific Analysis. *International Family Planning Perspective*, 21(3); 92-97.

3. Amsel, Richard PA. Totten, CA Spiegel KCS Chen, D.E scenbach,and KK. Holmes(1983). Nonspecific vaginitis diagnostic criteria and microbial and epidemiology associations. *American journal of medicine*, 74(1), 14-22.

4. Anandalekshmy PN and Buckshee K (1997). Maternal mortality in a referral hospital of Northern India. A sixteen year review. *The Journal of Family Welfare*, Vol:43 (3), 1-4.

5. Anh Dang (1995). Differential in contraceptive use and method choice in Vietnam. *International family planning perspective*. Vol:21 (1), 2-5, March 1995.

6. Anita Hardon, Ann Mutua, Sandra Kabin, Elly, Engelekes(1997) *Monitoring family planning and reproductive rights. A manual for empowerment.* Women's Health Action Foundation, Zed Book limited, London.

7. Apte H and Surinder Athwal. Personal hygiene and self reported symptoms suggesting UTI and RTI among 100 women in Pune city. *AIDS Research and review* Vol:2 (1), January - March 1999. National AIDS research institute ICMR Pune India.

8. Aras RY and Nalini P Nair.(1995). High fertility and risk of carcinoma cervix. *The Journal of Family Welfare*, Vol: 41(3), 48-52.

9. Bang et, al: (1989) High prevalence of gynecological diseases in rural Indian women, *Lancet*, 8, 629, 1:85-88.

10. Barbara Shane Kate Chalkley (1998). From research to operation How operations research is improving reproductive health services.

11. Barbin et al (1995). Reproductive tract infections and abortion among adolescent girls in rural Nigeria. *Lancet* 345; 300-304, 1995.

12. Barbin.L.et al (1995). Reproductive tract infections and abortions among adolescent girls in rural Nigeria. *Lancet* 345(8945); 300-4.

13. Barbir L.et al (1998). Reproductive tract infections, gynaecological morbidity and HIV seroprevalence among women in Mumbai India. *The scientific Journal of WHO* Vol:46, No3 1998

14. Belcher, D W. FK Warupa, AK Neumann, and IM Lourie (1976). Comparison of morbidity interview with health examination survey in Rural Africa. *American journal of Tropical Medicine and Hygiene* 25(5), 751-758.

15. Bhat PN, Navaneetham K, Rajan S I (1995). Maternal mortality in India; estimate from a regression model. *Studies in family planning* 26 (4): 217-32.

16. Bhatia J.C, John Cleland, Leela bhagavan and N S N Rao (1997). Levels and determinants of Gynecological morbidity a district of south India. *Studies in family planning* 1997, 28(2): 95-103.

17. Bhatia J.C. and John Cleland (1995). Self reported symptoms of Gynecological morbidity and their treatment in south India. *Studies in Family planning* 1995; 26(4) : 203-216.

18. Bhatia S, W.H. Mosely ASG Faruque and J. Chakraborty(1980). The Matlab family planning health service project. *Studies in family planning* 11: 202-212.

19. Bruce.J. (1990). Fundamental element of the quality care . A simple frame work. *Studies in Family Planning* 21(2), 61-91.

20. Chaya, nada and Karen Helsing (1995). Reproductive risk: A world wide assessment of women's sexual and maternal health, (eds) Shanti R Conly; Report on progress towards world population stabilization, *Population Action international* Washington DC.

21. Das RP(1989) Status report seres-1- Contraceptive Technology- past, present and future. *National Institute of health and family welfare* , New Delhi.

22. Datey, S, L N Gaur and B N Saxena (1995). Method related menstrual irregularities, especially increased bleeding, often lead to discontinuation. *International Family Planning Perspective*, 21(3).

23. Dong W, Colhoun HM, Poulter NR (1994). Blood pressure in women using oral contraceptives: Result from the health survey for England. *Journal of Hypertension* 15(10): 1063-68.

24. Dutta DC (1988). *Text book of obstetrics and gynecology including perinatology and contraception*, New central book agency.

25. Faundes A;Hardy E (1995). From birth control to reproductive health. *International Journal gynecology and obstetrics* 49(1) 55-62.

26. Foxman, B et al (1997). Condom use and first time UTI. *Journal of epidemiology*, 8(6): 637-41.

27. Gangopadhyay Bhaswati and Das DN (1997). Quality of Family Planning services in India , users perspective. *Journal of Family welfare*, Vol:43(3), 5-12, September 1997.

28. Goldberg, Howard I, and Kykut Torob(1994). The use of traditional methods of contraeption among Turish couples. *Studies in family planning*, 25(2), 122-128.

29. *Government of India*(1995). Year book 95-96. Family welfare program in India. Department of family welfare Ministry of health and family welfare, , New Delhi.

30. Hooton et al (1996). A prospective study of risk factors for symptomatic urinary tract infection in young women. *New England Journal of Medicine* 335(7): 468-74.

31. Hopcreft, M, AR Verhagen, S.Naihi and ACA Haga (1973). Genital infectins in developing countries: Experience in a family planning clinic. Bulletin of the world health organisations, 48, 581-586.

32. Howkins John. Shows text book of gynecology (eight edition revised).

33. Jain A.K. (1987). Fertility reduction and quality of family planning services. *Studies in family planning* 20(1): 1-16.

34. Jain, AK and I. Sivin (1977). Life table analysis of IUDs: Problems and recommendations. *Studies in family planning*, 8(2), 24-47.

35. Keith .L. Wester. A Lash A.(1971). A comparison between puerperal and non puerperal laparoscopic sterilization. *Inter national Journal Surgery* 56(5);325-330.

36. Kiilhome.P, MiaKinen .J, Mlaenpala. J(1990). Perforation of uterus following IUD insertion in the puerperium. *Advances in contraception*, 6 (1): 57-61.

37. Latha et al (1997). Prevalence of clinically detectable gynecological morbidity in India: Result of four community based studies. *The Journal of Family Welfare* ,vol: 43(4), 8-17.

38. MacGregor EA and Guilleband J. (1998). Combined oral contraceptives migraine and stroke. *British Journal of Family planning*, 24(2), 55-60.

39. Madhavan K (1989). *Fertility policies of Asian countries*. Sage publication New Delhi Newburry Park London 1989.

40. Maternal mortality in Africa- Update. *International family planning perspective* September 1998.

41. Miller K; Rosenfield A (1996). Population and women's reproductive health an international perspective. *Annual review public health* 1 (1); 359-82.

42. Moi, H.(1990). Prevalence of bacterial vaginosis and its association with genetal infections, inflamation, and contraceptive methods in women attending sexually transmitted diseases and primary health clinic. *International journal of STD and AIDS* 1,2: 86-94.

43. Muller D R (1993). Population policy and womens right: Transforming reproductive choice. westport connecticut Praeger.

44. Nair Balakrishnan(1994) Social development and demographic changes in South India. A focus on Kerala. M D Publications New Delhi.

45. *National Family Health Survey* (MCH and Family planning). Kerala 92-93; PRC and IIPS 1995.

46. Omran, AR and CC Standley (1981). Family formation patterns and health, Further studies: An international collaborative study in Columbia, Egypt, Pakistan and Syria. Geneva. *World Health Organisation*. page 271-300.

47. Othman S K (1994). A study on the perception and practices of women in the birth spacing in Trivandrum. India. Dissertation submitted to the University of Liverpool for Master in community health degree 1994 (unpublished)

48. Pannikar PGK and CR Soman(1984) Health status of Kerala Paradox of economic backwardness and health development *Center for development studies*, Trivandrum.

49. Perea, J G F.(1994). The introduction of new methods of contraception: Ethical perspective. *Reproductive Health Matters*, No 3; 13-19.

50. Platz-Christensen J.J etal (1992). Evaluation of regret after tubal sterilization. *Inter national Journal of gynecology and obstetrics* 1992: 38: 223-226.

51. *Population reports*(1984). Family planning programs series- 1-No 27 , May - June 1984 "Healthier mother and childern through family planning."

52. Rajaram (1991). Gynecological problems of rural women, status and intervention requirement. Proceedings of the workshop on improving young womens health and development. ICMR , page 86-89.

53. Rajaretnam. T.(1998). Genuineness of statistics on reversible methods of Family planning. A field investigation in Rural Karnataka. *The Journal of family welfare* Vol:44, (3), September 1998.

54. Rajeswari N.V. and J.B.Hasalkar (1996). IUD Retention in Shimoga district of Karnataka. *Journal of Family Welfare*, Vol: 42(1), March 96, Page 44 -50.

55. Rasevic M (1994). Yugoslavia: Abortion as a preferred method of birth control. *Reproductive Health Matters*, No 3; 13-19.

56. Ravindran Sundari (1993). Women and the politics of population and development in India. *Reproductive Health Matters*, No 1; 26-38.

57. Ravindran Sundari TK and Marge Berger(1994). Contraceptive safety and effectiveness. Re-evaluatng womens need and Professional criteria. *Reproductive Health Matters*, No 3; 6-11.

58. Rob U, JF Phillips, J Chakraborty and MA Koeng (1987). The use effectiveness of copper T 200 in Matlab Bangladesh. *International journal of gynecology and obstetrics*, 25(4), 315-322.

59. Robey B et al, (1992). The reproductive revolution: New survey findings. Series M, No 11,Special topic Vol:20(4). *Population report*, Johns Hopkins university, population information program.

60. Satya sekhar and Nagi Reddy (1994). Regional variation in contraceptive choices in Andra Pradesh. *The Journal of Family welfare* Vol: 40(2), 51-60.

61. Sheldon J. Segal, Any O. Tsui and Susan M. Rogers(1989). Demographoic and programmatic consequences of contraceptive innovations. Plenum press, New York.

62. Shenoy K.T, Seela Shenoy and Kaveri Gopalakrishnan.(1996). Reproductive health and Gynaecological morbidity in Kerala, Project of the *United Nations Development Program.*

63. Shireen J. Jejeebhoy (1996). Reproductive health information needs in India. Has NFHS filled the data gap. *The Journal of Family welfare*, Vol:42(1), 7-23, March 1996.

64. Sikstrtom B et al (1995). Contraceptive use and reproductive history in women with cervical human papilloma virus infection. *Advances in Contraception11*(4): 273-84.

65. Sobti J.C. et al (1996) Promotion of Family Planning by IMA , A study in Utter Pradesh. *The Journal of Family welfare*, Vol: 42, (1), March 1996,

66. Spinillo A et al (1996). The impact of oral contraception on Chlamydial infection among patients with pelvic inflamatory diseases. *Contraception* 54(3);163-8.

67. Srinivasan K (1995). Regulating reproduction in India's population, Efforts, Results and recommendations. Sage publications, New Delhi.

68. Srinivasan K. et al (1997). India Towards population and development goals UNFPA for united nations system in India, United nations population Fund, Oxford university press.

69. Still growing , but more slowly- Update 1998. *International family planning perspective* September 1998.

70. Teles E etal (1997). Reassessing Risk assessment : Limit to predicting reproductive tract infections in contraceptive users. *International family planning perspective* Vol: 23 (4), 179-182, December 1997.

71. Thankappan KR and Valiathan MS (1998). Health at low cost - the Kerala model. *The Lancet*, Vol: 351(9111), page 11274-1275.

72. Trong H A. etal 91995). Patterrn of IUD use in Vietnam. *International family planning perspective.* Vol:21, (1),6-10, March 1995.

73. Trussell, J and AR Pebley (1984). The potential impact of changes in fertility on infant, child and maternal mortality. *Studies in family planning*, 15(6), 267-280.

74. Varma R K and Baburajan PK (1994). Determinants of contraceptive choices in India. *The Journal of Family Welfare*, Vol:40 (3), 1-9.

75. Wasserheit et al (1989). Reproductive tract infections in a family planning population in rural Bangladesh. *Studies in family planning* 20(2): 69-80.

76. WHO(1970) technical report series No 442 1970. Health aspect of family planning. Report of a WHO scientific group.

77. Wilkinson D et al (1997). Family planning services in developing countries: an oppertunity to treat asymptomatic and unrecognised genital tract infections. *Genitourinary medicine* 73(6): 558-6.

78. William. J. Ledger(1997). Infections in the females. Henry publishers, London.

79. World Health Forum. *An international Journal of health and development* Vol:19, No:3 1998. WHO Geneva.

80. Younis et al (1993). A community based study of gynecological and related morbidity's in rural Egypt. *Studies in family planning* 24(3): 175-186.

Annexure-1

Introduction to the House holder

Iam a student of the Achutha menon center for health science studies, Sree chitra institute Trivandrum. I would like to have your co operation in answering the questions regarding your health.

Professionally Iam a medical doctor. Iam married and mother of two children. The information collected will be kept confidential.

Annexure-2

Questionnaire

Schedule No. ----------

SELF REPORTED REPRODUCTIVE MORBIDITY IN THE CONTEXT OF CONTRACEPTIVE USE. ANALYSIS OF THE DETERMINANTS OF REPRODUCTIVE MORBIDITY.

Master of Public Health Programme

Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram 695 011

Investigator: Dr. Sowmini

INTERVIEW SCHEDULE

1.Category of respondent:

Sterilized after 1996 Sterilized before 1996 IUD
OC CC None

2.Date of interview: ----------

3.Name of center and ward number ----------

4.Place of residence of the respondent: 1 Urban 2 Urban out growth

5.Distance from the PHC.---------(kms)

6.Name of the respondent: ----------

7.Name of the spouse:----------

8.Address: ----------

9.Number of members in the Household : M--------F----------Total --------
(including the children and respondent)

10.SOCIOECONOMIC AND DEMOGRAPHIC DETAILS

	Age (completed years)	Age at marriage (completed years)	Age at first conception (completed years)	Education	Religion	Waged/ Salaried/ Housewife	Type of house and number of rooms and TV set	Family income (monthly)
Wife								
Husband								

11.Number of surviving children: Boys------- Girls---------- Total----------

12.Is the number of pregnancies equal to number of surviving children :
Yes/ No

13.Is the respondent currently Pregnant
Yes/no

14.Is the respondent currently Lactating
Yes/no

15.Pregnancy history

	First	Second	Third	Fourth	Fifth	Sixth
Age at conception						
Outcome of Pregnancy(live birth,still birth,abortion)						
Duration of pregnancy(months)						
Place attended for delivery or abortion.						
If live birth, age of child (years and months)						
Sex						

16.MORBIDITY HISTORY OF ALL RESPONDENTS.

Do you have any of the following problems during the past three months(tick)

RTI	yes	no	treatment	place
Upper RTI Pain in iliac fossa,				
lower abdominal pain				
vaginal discharge with or without associated fever.				
Lower RTI- Vaginal discharge with itching or irritation				
white or colored (yellowish green ,curdy white)				
foul odor discharge.				

Menstrual problem	yes	no	treatment	place
change in cycle pattern				
painful menses				
prolonged , excessive bleeding and passing clots				
frequent menses less than 21 days duration, excessive or not				
Duration of bleeding less than 3 days with scanty periods or spotting .				
intermenstrual irregular bleeding. excessive or scanty				

Lower UTI	yes	no	treatment	place
pain or burning sensation while passing urine				
frequent urination with above symptoms				
incontinence				
high colored urine with above symptoms				
Upper UTI				
Back pain, fever, disuria.				

Prolapse	yes	no	treatment	place
feeling of something coming out,				
incontinence.				
Fistula-Constant leaking of feces or urine from the vagina				

17.do you have any of these problem before contraceptive use?

1- yes 2-No.

18.CONTRACEPTIVE HISTORY OF THE COUPLE

Have you or your husband ever used contraceptives? Yes/ No

	used before	currently using	not at all used
Husband			
Wife			
Both			

19.If No- Reason for non use

20.CURRENT CONTRACEPTIVE USE

Are you/husband currently using any contraceptives? Yes/ No

If Yes,

	Month and year of acceptance	Any screening/ before acceptance? Yes/No	Medicine(s) prescribed if any after screening	reason for choosing the particular method
IUD				
OC				
PPS				
Minilaparotomy				
Laparoscopy				
Vasectomy				
Condom				
Others				

21.Obstetrics status of the women when contraceptives accepted?

1. Concurrent with MTP
2. Concurrent with cesarean section
3. Post partum (within 6 weeks)
4. Current with other surgery
5. Interval

22.Who provided the method
1. Doctor 2. JPHN 3. Nurse 4. Others

23.From where did you obtain this contraceptive?
1. SC 2. PHC 3.Camp 4. Govt. Hospital 5. Private

24.Did you visit the (hospital) after obtaining the services? Yes/ No

25.If Yes, when? Within the first one month/After one month within 6 months/ 6+ months

26.Were you asked to come for follow up visit?
1. No 2. Yes, asked to come once 3. Yes, asked to come regularly

27.How frequently you visit the hospital after contraceptive acceptance?
1. Never 2. When problem arise3. Regularly

28.Does your husband know that you have used/ are using a contraceptives?
Yes/ No

29.Does your husband suffers from any (diseases like STD)? Yes/ No

30.if Yes, ask related symptoms

31.Have you had any problem during last delivery? Yes/ No

32.If Yes, specify.....

33. Have you adopted the contraceptives for the first time switched over to this method or restarted using the method after some gap
1. First time 2. Switcher 3. Restarter

34.if Switcher, Reasons: .....

35. Did you ever repent on sterilization
1- yes 2-No.

36. Any Immediate complication at the time of acceptance
For sterilization
1-Wound infections 2-Injury to pelvic organs
3-peritonitis 4- others

IUD complications
1-bleeding 2-infection 3-expulsion
4-failure 5-Others

37. If used before

Details of all contraceptives used till now.

type of contraceptives				
duration of use (years and months)				
time of acceptance(interval, post partum, post abortal)				
use in relation to pregnancy order				
place of acceptance(SC,PHC, Govt:Private)				
person providedservices				
follow up pattern				
complications				
reason for discontinuation				

38.When did you use contraceptive for the first time? Age------

1. Just after marriage
2. After the birth of the first child
3. Between 1st and 2nd child
4-After 2nd birth
5-After stopping breastfeeding
6- Between 2nd and 3rd child
7-After 3 or more children
8- After completing the family

39.ABORTION HISTORY

No of unwanted pregnancy	outcome	on contraceptives	place of termination	period of pregnancy	Accepted FP after

40.Reason for abortion

1-Pregnancy was due to contraceptive failure
2-exposed to x-ray, drugs, illness during pregnancy
3-Didnot want any more children
4-didnot want any daughters
5-the previous child was too young

41.Any complication during the procedure

I f yes, what happened (Specify)

Remarks:----------

Name of person collected information:

Annexure-3

Guide lines for Case study

1.Socioeconomic characteristics of the respondents

2-Demographic characteristics.

3-Contraceptive practice.

4-Reason for choosing particular method

5-Duration of use.

6-Influence of other people in contraceptive choice.

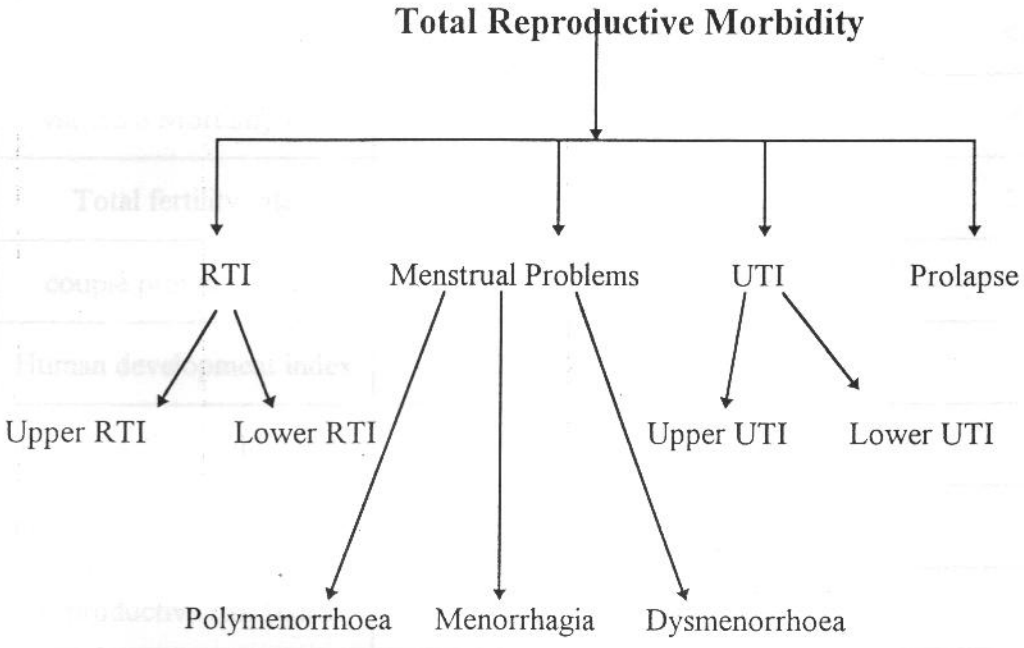
7-Any problem after contraceptive use.

8-Treatment seeking behavior.

9-Method satisfaction.

Annexure 4

Categories of reproductive morbidity



Annexure 5

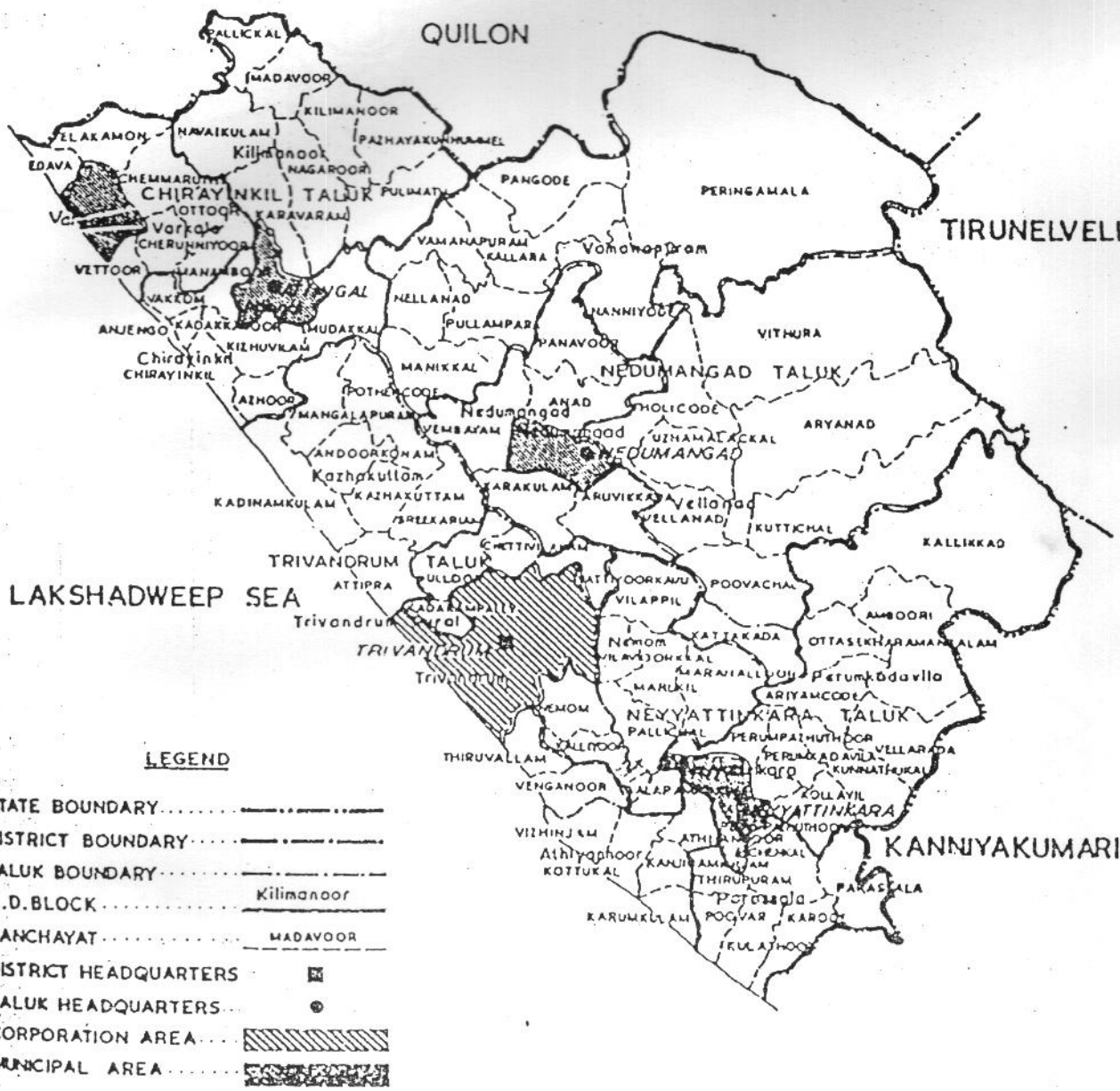
Health standards in Kerala, India

Health indicators of kerala, India and the goal for the year 2000AD

Health Indicators	Kerala/1000	India/1000 pln	Goal 2000AD
Crude birth rate	18.0	28.3(95)	21
Crude death rate	6.0(95)	9.0 (95)	9.0
Infant mortality rate	15(95)	74 (95)	<60
Maternal Mortality rate	0.87	4.37(92-93)	<2
Total fertility rate	1.7	3.5	2.1
couple protection rate	48.5(96)	46.5(96)	
Human development index	62.8	42.8	
Reproductive health index	84.6		
Gender development index	88.1		
Reproductive risk Index		39.5	
life expectancy Female	72.3(Females)	58.1(Females)	

Source: Family Welfare India Year book 1995; UNFPA 1998; SRS 95; NFHS 92-93.

Chaya, nada and Karen Helsing (1995), Population action international,



	Thiruvananthapuram	Kerala
Population	29.46 lakhs (1991)	290.98 (1991)
Density	1344 person/sq	749 person/sq
Urban inhabitation	-	26.39% (UNFPA)