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Gynecological Morbidity and Treatment Seeking Behaviour in South India: Evidence from the Reproductive and Child Health survey 1998-1999*

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Abstract

In the recent years, the issue of gynaecological problems of poor women in the developing countries has been receiving increasing attention. Gynaecological morbidity refers to reproductive morbidity other than related to pregnancy, abortion, childbearing, and contraception. High levels of gynaecological morbidity, especially reproductive tract infections and sexually transmitted infections (RTIs/STIs) may turn out to be fatal if not treated properly. The present paper tries to examine the influences of socio-economic and demographic factors on gynaecological morbidity and treatment seeking behaviour in Tamil Nadu. The data for this study have been drawn from the Reproductive and Child Health Survey that covered 18040 currently married women in the reproductive age group of 15-44 years in Tamil Nadu. The logistic regression technique has been used to estimate the net effects of various socio-economic and demographic variables on the likelihood of gynaecological morbidity. The paper also examines the influences of various factors on treatment seeking behaviour for gynaecological morbidity, that is, whether treatment is sought and if so, the source of treatment, public or private sector. For this purpose, the multinomial logistic regression technique has been used, with no treatment, treatment from public medical sector, and treatment from private medical sector as the multinomial response. The study found that 36.3 percent of women of childbearing ages had experienced any one symptom of RTI/STI and among them 31.5 percent had taken treatment. The results reveal that women in low level of education, pregnancy wastage, and contraceptive users are significantly more likely to report symptoms of RTI/STI. Further, the tendency to seek treatment from the public health sector is greater among those women belonging to the SC/ST, having experienced pregnancy wastage, and contraceptive users. Literate women are significantly more likely to seek treatment from the private medical sector. Some other factors show mild effects.

KEYWORDS: Reproductive Tract Infection, Sexually Transmitted Infection, Treatment, contraceptive, public sectors, private sectors.

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Introduction

India has the second largest population and the first national population programme in the world. The population programme saw a paradigm shift during the last decade especially after the importance of reproductive health was recognized in 1994 at the International Conference on Population and Development (ICPD), Cairo. Reproductive health is "a state of complete physical, mental and social well-being and not merely absence of disease or infirmity, in all matters relating to reproductive system and to its function and processes" (United Nations, 1994). The Reproductive and Child Health (RCH) approach was incorporated in India on October 1997 and is being implemented through the health service networks all over the country. Reproductive morbidity (RM) is defined as "any morbidity or dysfunction of the reproductive tract or any morbidity which is a consequence of reproductive behaviour including pregnancy, abortions, childbirths, or sexual behaviour" (World Health Organisation, 1990). Reproductive morbidity refers to conditions of ill health related to the reproductive process during and outside the childbearing period (Zurayk *et al*, 1993 and Oomman, 2000a). Reproductive morbidity has been classified into three types: Obstetric, Gynaecological, and Contraceptive (Zurayk et al 1993, Fortney 1995, and Dasupta 1995).

Obstetric morbidity can be defined as ill health related to pregnancy episode. Gynecological morbidity can be defined as structural and functional disorder of the reproductive tract (genital tract) not related to pregnancy, delivery and puerperum, basically diagnosed by clinical and laboratory tests. Contraceptive morbidity refers to morbidity caused by use of contraceptives. Reproductive tract infections (RTIs) are divided into three types of infection according to the mode of transmission that affect reproductive tract, endogenous infections, iatrogenic infections, and sexually transmitted infections (Antrobus *et a*l, 1994 and Van de wijgert and Elias, 2003): Endogenous Infections are caused by overgrowth of organism normally present in the genital tract (reproductive tract) such as bacterial vaginosis, candidiasis and others; Iatrogenic Infections are caused by the introduction of micro-organisms into the reproductive tract through medical procedures such as abortion, IUD (intrauterine devices) insertion and vaginal examination etc. carried without hygienic conditions; and Sexually Transmitted Infections (STIs) are caused by bacteria, virus, parasitic and other micro-organisms that are transmitted mainly through sexual contact or sexual intercourse, for instance gonorrhoea, genital ulcers, genital warts, abdominal genital tract discharge, pelvic pain, chlamydia, trichomoniasis, syphilis and HIV (Human Immunodeficiency Virus).

The identification of RTI/STIs as risk factors for the spread of HIV infection has contributed to a large extent to the global awareness of RTI/STIs. The incidence is relatively high in women of the age group 15-49 years; the number of AIDS (Acquired Immunity Deficiency Syndrome) cases is likely to continue to increase in the coming years. Worldwide, one million people die annually due to causes of reproductive tract infection, including STD (Sexually Transmitted Disease) other than HIV/AIDS (UNFPA, 1997). Indian women suffer from various reproductive health problems and more than one lakh women die in India annually for reasons related to pregnancy. Abortion accounts for 12.3 percent of all maternal deaths in India (India, Registrar General, 1993). The abortion related deaths amount to 15,000 to 20,000 annually. However, majority of pregnant women do not use health care services (Pachauri, 1999, Ramasubban, 2000). The National Family Health Survey-2 (NFHS-2) report shows that more than one third of ever married woman in India have at least one reproductive health problem (IIPS, 2000). The Reproductive and Child Health-Rapid Household Survey (RCH-RHS-1&2) report shows that reproductive health is poor all over the country 29.7 percent of married women of reproductive age report any symptom of RTI/STIs (IIPS, 2001a). Among large states, the prevalence of RTI/STI among women is the highest in Rajasthan (45.0 percent) and the lowest in Jammu & Kashmir (3.0 percent).

Tamil Nadu is the one of India's economically, educationally and industrially developed state. Still reproductive health conditions are poor among women in Tamil Nadu with the 36.3 percent reported prevalence of reproductive tract infection. This calls for an assessment of

reproductive tract infection of women in Tamil Nadu. Women's health issues cannot be addressed in isolation. Various individual, household, and community factors influence women's health as well as decisions about treatment seeking behavior (Bang *et al.*, 1989; Bhatia and Cleland, 1995).

The broad objective of this paper is to understand the various factors affecting women's reproductive health and treatment seeking behaviour in the state of Tamil Nadu. Specifically, the paper first examines differentials in the prevalence of reproductive tract infections and treatment seeking behaviour in Tamil Nadu by selected social-economic and demographic factors. It further assesses the net influences of various factors on the prevalence of reproductive tract infections and on treatment seeking behaviour in the state. An understanding of the relationships between prevalence rates and socio-economic and demographic factors can provide valuable information for social scientists, policy makers and health professionals who are concerned with improving the quality of life of women in India.

The Study Area

Tamil Nadu is one of the largest states in India. The population of Tamil Nadu was 62.11 millions at the time of the 2001 census accounting for 6.05 percent of the total population in India (India, Registrar General, 2001). Tamil Nadu is one of developed states in terms of demographic characteristics. According to the SRS (Sample Registration Systems) estimates, Tamil Nadu experienced gradual decline in fertility during 1971-2002. The crude birth rate (CBR) fell from 31.4 in 1971 to 19.0 in 2000 (India, Registrar General, 1999, 2002b). The decline has been rapid especially in the 1980s. The decadal population growth rate gradually declined from 17.5 percent in 1971-81 to 15.3 percent in 1981-91 and 11.1 percent in 1991-2001. There has been a remarkable improvement in couple protection rate (CPR) in Tamil Nadu, from 13.3 percent in 1971 to 50.8 percent in 1998 (Ministry of Health and Family Welfare, 1999). According to the 2001 census, Tamil Nadu has become one of the most urbanized states in the country. The total population living in urban areas increased from 33 percent in 1981 to 34 percent in 1991 and then rapidly increased to 43.8 percent in 2001. The level of urbanization is much higher in Tamil Nadu than the all India level, which is 28.1 percent (India, Registrar General, 2002a). Educationally, Tamil Nadu is one of the more developed states in India; according to the 2001 census (India, Registrar General, 2001), the literacy rate among the population age seven and above was 73.4 percent in the state compared with 65.3 percent in India (82.3 percent for males and 64.5 for females in Tamil Nadu compared to 75.8 percent of males and 54.1 percent for females in the country). The planning commission estimated that in 1999-2000 population living the below poverty line were 20.5 percent in rural areas and 22.2 percent in urban areas in Tamil Nadu (Government of India, 2002).Tamil Nadu has very good health infrastructure in rural and urban areas. The Infant Mortality Rate (IMR) is 49 per 1000 live births in Tamil Nadu, much lower compared to the all India level of 72 per 1000 live births. The IMR in Tamil Nadu has gradually declined from 113 per 1000 live births in 1971 to 49 per 1000 live births in 2002. The Crude Death Rate (CDR) also declined from 14.4 per 1000 population in 1971 to 7.6 in 2002 (India, Registrar General, 1999, 2002b).

Data and Methods

The data used in the present study are obtained from the Reproductive and Child Health-Rapid Household Survey (RCH-RHS-1&2) conducted in 1998-99. The RCH-RHS-1&2 surveys were conducted in two phases at the national level by the International Institute for Population Sciences (IIPS), Mumbai (IIPS, 2001a). The principal objective of the survey was to provide detailed information on reproductive health and

child health at district level, state level and national level. The survey estimated level of antenatal care (ANC) and immunization, delivery care, the contraceptive prevalence rate (CPR) and unmet need for family planning, the awareness of RTI/STI and HIV/AIDS, and the utilization of government health services. The Reproductive and Child Health survey was conducted in two phases in Tamil Nadu, which was organized by the Population Research Centre (PRC), Gandhigram, Tamil Nadu (IIPS, 2001b).

The first phase was conducted during September to December 1998 in 12 districts of the state and the second during April to July 1999 in the remaining 11 districts (listed as per 1991 census). The study covered 18040 currently married women in the reproductive age group 15-44 years and 6737 men in the age group 20-54 years (irrespective of their marital status) from 23850 households in 23 districts in Tamil Nadu. The principal findings of the RCH-RHS surveys have been published and these provide a large number of indicators at the district level as well as district and state reports. Further, the RCH-RHS has made the individual level data available to researchers. These form the principal source for the individual level analysis in this work. In the RCH-RHS the information on reproductive morbidity were obtained on the basis on self-reported symptoms, specifically, burning sensation or pain or difficulty while urination, lower abdominal pain or vaginal discharge, all during three months prior to survey. Thus, the analysis in this paper is based on self-reported morbidity rather than clinically diagnosed or based on laboratory tests, a limitation that needs to be noted. Further questions on the nature of discharge were also asked. In addition, women were asked whether they sought treatment for reproductive health problems.

Dependent Variables

The RCH-RHS survey asked to women: [*Q.No: 601 (phase-1) and 615 (phase-2)*] "During the past three months did you have burning sensation, pain or difficulty while urinating?" (Yes or No); [*Q.No: 602 (phase-1) and 616 (phase-2)*] "During the past three months did you experience pain in the lower abdomen or vagina during intercourse?" (Yes or No); [*Q.No: 603 (phase-1) and 617 (phase-2)*] "During the past three months did you have any problem of vaginal discharge?" (Yes or No); and [*Q.No: 608 (phase-1) and 622 (phase-2)*] "Have you consulted anyone for treatment ?" (Yes or No). Thus, there are three questions on symptoms and one on treatment. Further, reporting any one of the three symptoms is also tabulated. Two response variables or dependent variables are considered in the present study, reporting any one or more symptoms of reproductive tract infection (whether the woman reported suffering from Burning Sensation, Pain or Difficulty while urinating or experience pain in the lower abdomen or vagina during intercourse or any problem of vaginal discharge during the three months period preceding the survey: Dichotomous: Reported any symptom, Did not report any symptom), and treatment seeking behaviour (whether the woman who experienced any symptom sought consultation or treatment from public medical sector or private medical sector or no treatment for any reproductive health problem during the three months period preceding the survey: three categories: No treatment, Treatment from Public medical sector, Treatment from Private medical sector).

Explanatory Variables

Available literature has suggested that prevalence of RTIs and treatment seeking behaviour could possibly be influenced by a number of socio-economic factors such as education, income, community, rural or urban residence, as well as by demographic factors such as age, parity, pregnancy wastage, and contraceptive use (Bang *et al*. 1989; Bhatia and Cleland, 1995; Oomman, 2000b; Rangaiyan and Sureender, 2000; Rani and Bonu, 2003). Besides, as the health service infrastructure is primarily managed by state governments, the state of residence could also have an impact. Taking these issues into account, twelve selected socio-economic and demographic explanatory variables considered in the present study. These are: Place of residence- dichotomous (Urban and Rural), Religion- categorised (Hindus, Muslims and Others- mainly Christian), Caste of woman- categorised (OBC: Other Backward Caste, SC/ST: Scheduled Caste/Scheduled Tribe, and Other castes), Educational level of woman- categorised (No schooling, 1-5 years of schooling, 6-10 years of schooling and 11 and above years of schooling), Standard of living[‡] (Type of house used as proxy)- categorised (Pucca, Semi-Pucca, Kuchcha), Age of woman- categorised (15-19 years, 20-29 years, 25-29 years, and 30 and above years), Age at marriage- categorised (less than 18 years, 18-20 years and 21 and above years), Pregnancy wastage- dichotomous (No pregnancy wastage, Any pregnancy wastage), Parity- categorised (No live birth, At least one live birth), Current use of contraceptive methods- dichotomous (User, Non-user), Awareness of RTI- dichotomous (Aware, Not aware), Awareness of STI- dichotomous (Aware, Not aware).

First, the gross differences are obtained and examined. The multivariate statistical method used in the analysis logistic regression in order to estimate the net effect of each variable on the likelihood of reporting symptoms of reproductive tract infection and on the probability of seeking treatment or consultation. Because the dependent variable on reporting any one symptom is dichotomous (reported or not) the technique of logistic regression has been adopted instead of multiple linear regression (Retherford and Choe, 1993). For explanatory variables in a categorised form, a category is designated as 'reference' and if B_k is the logistic regression for category k, then exp (B_k) is the odds ratio, that is, the ratio of odds for the category k to the odds for the reference category. Further, since the variable on treatment seeking has three categories (no treatment, public medical sector, private medical sector); the multinomial logistic model has been adopted to examine the influences of various factors on this. In this model, two sets of coefficients (and odds ratios) are estimated: 1. for the probability of seeking treatment from public medical sector vis-à-vis no treatment, and 2. for the probability of seeking treatment from medical private sector vis-à-vis no treatment.

[‡] In the RCH-RHS, data on income were not collected. In many other surveys, an index of standard of living is computed from data on ownership of assets and housing conditions. However, the RCH-RHS did not obtain information on assets. The only relevant information is on the type of house occupied by the household. This is categorised as: Pucca (house made with high quality material though out, including the roof, walls, and floor, indicative of a relatively high standard of living), Semi-Pucca (made using partly high and partly low quality material, indicative of medium standard of living) and Kuchcha (made with mud, thatch, or other low quality materials, indicative of low standard of living).

Results and Discussion:

Prevalence Level and Sought Treatment

The large-scale survey namely RCH-RHS survey now provides estimates of the prevalence of reproductive morbidity. In Tamil Nadu, the prevalence of any one symptoms of reproductive tract infection/sexually transmitted infection is 36.3 percent. It is relatively higher than national level (29.7 percent). Table 2 shows types of reproductive tract infection among currently married women in the age group of 15-44 years, Tamil Nadu, RCH-RHS survey 1998-99. The prevalence of burning sensation is 7.8 percent, lower abdominal pain (6.7 percent) and any problem of vaginal discharge (32.2 percent). Out of 5800 women who reported symptoms of any problem of vaginal discharge, Muccid non-foul smelling discharge is reported by 73.7 percent, followed by Thick curdy while discharge (20.5 percent), Thin dirty foul smelling discharge (4.3 percent), Thick grey white foul smelling discharge (1.5 percent). Discharge with other conditions: Itching is reported by (8.9 percent), Ulcers (1.4 percent), Itching and Ulcers (3.9 percent), Ulcers (1.4 percent), Sever lower abdomen pain (22.0 percent) and Fever with discharge (8.4 percent). Among those who reported any one symptom of RTIs, more than two-thirds have not received any treatment or advice.

Table 3 shows the percent distribution of women who sought treatment for RTI/STI in Tamil Nadu. A higher proportion sought treatment from the private medical sector than the public medical sector. Of women who have obtained treatment from more than any one source, over 60 percent of women have received treatment from the private medical sector including private doctor, medical shop/private nurse/pharmacist and traditional practitioner, and less than 40 percent of women sought treatment from the public medical sectors, which includes government doctor/government nurse/ANM (Auxiliary Nurse Midwife) and LHV (Lady Health Visitors). Among women who sought treatment, 60.9 percent did so from private doctor, 2.7 percent from medical shop/private nurse/pharmacist and 2.0 percent from traditional practitioner*. Among women who sought treatment, 27.4 percent went to government doctor and 11.1 percent to government nurse/ANM and LHV. Other sources include relatives, friends, self-treatment etc. (7.5 percent).

Differentials by Socio-Economic and Demographic Variables

Table 4 shows the prevalence of the reproductive health problems and treatment seeking behaviour by socio-economic and demographic characteristics. Prevalence of any one symptom of RTI/STI is substantially higher in rural areas (39.0 percent) compared to the urban (31.1 percent). On the other hand, the treatment for RTI/STI is marginally higher (31.1 percent) in urban areas than rural area (27.1 percent). It may be due to more advantages enjoyed by urban women in terms of health facilities and education etc. In the religion category, any one symptom of RTI/STI (44.2 percent) is reported more among others than Christians and Hindus (35.8-37.6 percent); the differentials in treatment seeking are relatively small. Caste differentials in prevalence of reproductive tract infection are not large. There is no major difference in treatment seeking for RTI/STI among OBC, SC/ST and the other castes. The women with higher education show lower level of reported symptoms compared to the illiterate women, but there are only slight differences in the treatment seeking behaviour for RTI/STI by education. Symptoms of reproductive tract infection do not much differ by the type of house (used as proxy for standard of living).

Similarly, there is not much difference in treatment for RTI/STI by the type of housing and

also prevalence rate is not much different between younger and older women. The tendency to seek treatment is slightly lower among women in the age group of 15-19 years, compared to older women. But prevalence rate does not seem to differ notably by age at marriage. The prevalence of RTI is higher among women who had pregnancy wastage but the treatment seeking behaviour is also higher among who had pregnancy wastage. There are no notable differences in prevalence levels and treatment seeking behaviour by parity. Contraceptive users do report a marginally higher prevalence of any one symptom than non-users. The tendency to seek treatment is also moderately higher among users (30.2 percent) than non-users (26.1 percent). Those aware of RTI/STI report higher prevalence of symptoms (41.7 percent) than those not aware (32.4 percent); but the reciprocal effect is possible. The treatment seeking behaviour does not appear to vary by awareness.

The results of the logistic regression for the reporting of any one symptom of RTI/STI are shown in Table 5. Urban women are less likely to report any one symptom of RTI/STI than rural women even when other relevant factors are controlled. In the religion categories, other religions (mainly Christian) are significantly more likely to report any one symptom of RTI/STI compared to Hindu women. The probability of reporting symptom of RTI/STI is lower among SC/ST women than OBC women. In addition, other caste women are more likely to report any one symptom of RTI/STI than OBC women. Women with 1-5 years of schooling are significantly more likely to report symptom of RTI/STI than women with no schooling, but women with 11 and above years of schooling (high educated) are significantly less likely to report any one symptom of RTI/STI than women with no schooling.

Women living in Semi-Pucca houses are marginally more likely to report symptom of RTI/STI than women living in Kachcha houses. Women living in Pucca houses are significantly less likely to report any one symptom of RTI/STI than women living in Kachcha houses. Among age categories, the probability of reporting symptom of RTI/STI is significantly higher among women in the age group of years 20-29 years than women in the age group of 15-19 years. On the other hand, women in the age group of 30 and above years are less likely to report symptom of RTI/STI than women in the age group of 15-19 years. Women who had experience of pregnancy wastages are significantly more likely to report this symptom than women no experience of pregnancy wastage. Current users of contraceptive methods (either women or husband using contraceptive method) are significantly more likely to report any one symptom of RTI/STI than non-users. Similarly, currently married women who are aware of RTI are significantly more likely to report symptoms of RTI/STI than women who are not aware of RTI.

Finally, the multinomial logistic regression analysis results for seeking treatment for RTI/STI are shown in the Table 6. Women who belong to urban areas are significantly more likely to seek treatment from private sector than women in rural areas. In the caste categories, SC/ST women are more likely to seek treatment from public sector but less likely to seek treatment from private sector compared with women OBC women. Women with 6-10 and 11 and above years of schooling are significantly less likely to seek from public sector than women with no schooling. But women with 1-5, 6-10 and 11and above years of schooling are significantly more likely (odds ratios are 1.34, 1.40 and 1.59 respectively) to seek treatment from private sector compared to women with no schooling. Among age categories, the probability of seeking treatment from private sector is significantly higher among women in the age group of 20-29 years and 30 and above years than women in the age group of 15-19 years. Women who get married in the age groups 18-20 and 21 and above are found to be significantly less likely to seek treatment from private sector compared with women in the age group less than 18 years. The odds of seeking treatment from public medical sector among women with pregnancy wastage are 1.45 times those for women with no pregnancy wastage. Similarly, odds of treatment seeking from private sector among women with pregnancy wastage are 1.5 times those for women no pregnancy wastage. Women with any live birth are significantly more likely than nulliparous women to consult a public medical sector but less likely to consult a private sector. Contraceptive users (either husband or wife a user) are more likely to seek treatment from both public medical and public sectors. Women who aware of RTI are more likely to seek care for RTI from private sector than women unaware of RTI are.

Conclusions

The prevalence of any one symptom of RTI/STI is quite high among currently married women in the age group of 15-44 years in the state of Tamil Nadu. It is marginally higher than the prevalence at the all-India level. The tendency to seek treatment for RTIs is quite low among the women in the state; of those who reported any one symptom of RTI/STI, nearly seventy percent did not seek any treatment or consult anyone for it. Among those who sought treatment, private medical sector is more common than the public medical sector. A number of socio-economic and demographic variables influence the prevalence rates as well as treatment seeking behaviour. Urban residence and education seem to lower prevalence level whereas experience of wastage, awareness of RTI and contraceptive use raise it. The influences of standard of living and age are not clear. On the other hand, the tendency to approach the private medical sector for RTI/STI is higher among women who are urban, have a level of education, some experience of pregnancy wastage, with live births, are contraceptive users and aware of RTI.

Two issues arise. First, only a minority of women with symptoms of reproductive morbidity seek treatment for RTIs. This is indeed sad in a state like Tamil Nadu known to have relatively high level of social development in India, where mortality has fallen substantially, and where contraceptive acceptance has been quite high. Clearly, the awareness about reproductive morbidity and the need to obtain treatment for it is very poor, Second, the vulnerable sections, especially the poor and illiterate, face greater risk of reproductive tract infection but do not get treatment.

Clearly, there is a need to create awareness about reproductive health and provide appropriate education about reproductive and sexual health. Besides, affordability seems to be an important factor. The public sector should cater to the needs of the poor but even the poor have not been utilizing these services much. The general impression is that people go private sector for treatment because they perceive it to be more effective and easily available than public m sector. Besides, some financial cost is involved even in accessing the public sector health services. If the actual cost of public health sector services is large, even the poor may not opt for these and the private sector costs are high. In the process, the poor and disadvantaged are deprived of any treatment. The public health programmes should provide information on reproductive health care and also provide people friendly services, preventive and curative care, free or at genuinely nominal cost. The programme administration of Tamil Nadu, that according to many has shown remarkable success in raising contraceptive prevalence and lowering fertility, should be able to meet this challenge.

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Table 1: Definitions of the variables included in the analysis of gynaecological morbidity during the three months period preceding the survey

Variable	Dummy code	Definition and categories
Residence		**Place of residence (dichotomous)**
	1	Rural
	2	Urban
Religion		**Religion to which the woman belongs (categorised)**
	1	Hindu
	2	Muslim
	3	Others
Caste		**Caste of the woman (categorised)**
	1	SC/ST: Scheduled caste
	2	OBC: Other backward caste
	3	Others: Neither OBC nor SC nor ST
Educational level		**Educational level completed by woman (categorised)**
	1	0 : No schooling
	2	1-5 years : completed 1-5 years of schooling
	3	6-10 years: completed 6-10 years of schooling
	4	11+ : completed 11 years or more schooling
Type of house		**Type of house in which the woman resides (categorised)**
	1	Kuchcha : Roof, walls, floor of inferior material
	2	Semi-Pucca: Superior material for 1-2 of roof, walls, floor
	3	Pucca: Roof, walls, and floor of superior material
Age		**Age of the woman at survey (categorised)**
	1	15-19 years
	2	20-29 years
	3	>30 : 30 years or higher
Age at marriage		**Age at which woman started living with husband, i.e., at consummation, (categorised)**
	1	< 18
	2	18-20
	3	> 21: 21 years or higher
Pregnancy wastage		**Whether the woman experienced any pregnancy wastage; at least one still birth or induced abortion or spontaneous abortion in the reproductive period (dichotomous)**
	1	Yes
	2	No
Parity		**Parity of the woman at survey (dichotomous)**
	1	Yes
	2	No: 0 parity (nulliparous)
Contraceptive use		**Women or husband is currently using any contraceptive method (dichotomous)**
	1	User
	2	Non-user
Aware of RTI		**Whether aware of any RTI (dichotomous)**
	1	Aware
	2	Not aware
Aware of STI		**Whether aware of any STI (dichotomous)**
	1	Aware
	2	Not aware
Any one symptom of RTI/STI		**Whether the woman reported any one symptom of RTI/STI during the three months period preceding the survey (dichotomous)**
	1	Yes
	0	No
Treatment seeking behaviour		**Whether sought treatment for RTI/STI and source of treatment (categorised)**
	1	No treatment
	2	Treatment from Public medical sector
	3	Treatment from Private medical sector

Table2: Types of Reproductive Tract Infection, Tamil Nadu, RCH-RHS survey, 1998-99

Reproductive health problems	Among all married women of age 15-44	Among women who reported vaginal discharge
Burning sensation	7.8	
Lower abdominal pain	6.7	
Any problem of vaginal discharge	32.2	
(i) *Nature of vaginal discharge*		
Muccid non-foul smelling		73.7
Thick curdy while		20.5
Thin dirty foul smelling		4.3
Thick grey-white foul smelling		1.5
(ii) *Discharge with other conditions*		
Itching		8.9
Ulcers		1.4
Itching and Ulcers		3.9
Sever lower abdomen pain		22.0
Fever		8.4
Any symptom of reproductive tract infection	**36.3**	
All women	**18040**	**5800**

* Percent who reported the symptom during the three months period prior to survey
***Source**: Computed from RCH-RHS-1&2 data files for Tamil Nadu.*

Table3: Treatment seeking for RTI/STI, Tamil Nadu, RCH-RHS survey, 1998-99

Source of Treatment for RTI/STI	Percent among those who reported any symptoms	Percent among those who sought treatment	No. of Women
Public Medical Sector			
Government doctor	8.3	27.4	544
Government nurse/ANM/LHV	3.3	11.1	222
Private Medical Sector			
Private doctor	18.5	60.9	1218
Medical shop/private nurse/pharmacist	0.8	2.7	53
Traditional practitioner	0.6	2.0	49
Other(relative/friends/self-treatment/others)	2.2	7.5	151
Sought treatment from anyone source	30.5	100.0	1999
Did not seek any treatment	69.5	NA	4555
Number of Women	**6554**	**1999**	**6554**

***Sources**: Computed from RCH-RHS, 1998-1999 data files for Tamil Nadu. The percentage in a group may not add up to total for the group due to multiple response. Note: ANM=Auxiliary Nurse Midwife, LHV= Lady Health Visitors.*

Table 4: Prevalence of any one symptom of RTI/STI and treatment seeking behaviour by selected socio-economic and demographic characteristics, Tamil Nadu, 1998-99

Socio-Economic and Demographic Characteristics	Percent of Currently Married Women 15-44 Years		
	Reported Any One Symptom of RTI/STI	Sought Treatment for RTI/STI*	Number of Women
Residence			
Rural	39.0	27.1	11917
Urban	31.1	31.1	6123
Religion			
Hindu	35.8	28.2	15909
Muslim	37.6	25.9	1189
Others	44.2	30.7	939
Caste			
OBC	35.6	28.0	13324
SC/ST	38.4	29.2	4121
Others	39.4	26.4	592
Educational Level (Year of schooling)			
0 schooling	38.1	27.3	7681
1-5	37.5	31.8	2606
6-10	35.6	28.4	5775
11+	30.0	27.1	1978
Type of House			
Pucca	33.4	29.3	4394
Semi-Pucca	38.6	27.8	8372
Kachcha	36.1	27.8	4424
Age of Women (Years)			
15-19	37.4	24.3	855
20-29	40.2	28.7	7598
30 +	33.2	28.4	9587
Age at First Marriage (Years)			
<18 years	36.8	30.1	6442
18-20 years	36.8	27.2	7629
> 21 years	34.8	27.3	3969
Pregnancy Wastage			
No	34.9	27.3	14455
Yes	42.1	32.7	3585
Parity			
No	36.6	25.3	2036
Yes	36.3	28.8	16004
Contraceptive Use			
Yes	37.9	30.2	9243
No	34.6	26.1	8797
Aware RTI			
No	32.4	24.3	10383
Yes	41.7	29.8	7657
Aware STI			
No	35.3	26.5	12062
Yes	38.5	28.3	5978
All Women	**36.3**	**28.2**	**18040**

*Among those who reported a symptoms.
Sources*: Computed from RCH-RHS, 1998-1999 data files for Tamil Nadu.*

Table 5: Logistic Regression results of reporting of any problem of RTI/STI on selected socio-economic and demographic characteristic in Tamil Nadu, 1998-99

Background	Any one symptoms of RTI/STI	
	Exp(B)	Sig.
Residence		
Rural (RC)		
Urban	0.85**	0.00
Religion		
Hindu (RC)		
Muslim	0.97	0.47
Other	1.29**	0.00
Caste		
OBC (RC)		
SC/ST	0.92*	0.04
Other	1.23**	0.00
Educational levels (Year of schooling)		
0 schooling (RC)		
1-5	1.15**	0.00
6-10	1.01	0.85
11+	0.73**	0.00
Type of House		
Kachcha (RC)		
Semi-Pucca	1.11**	0.00
Pucca	0.93**	0.01
Age group (Years)		0.00
15-19 (RC)		
20-29	1.17**	0.00
30+	0.76**	0.00
Age at marriage (Years)		
<18 (RC)		
18-20	1.02	0.90
21+	1.04	0.21
Pregnancy wastage		
No (RC)		
Yes	1.18**	0.00
Parity		
No (RC)		
Yes	0.98	0.40
Contraceptive use		
No (RC)		
Yes	1.14**	0.00
Aware of RTI		
No (RC)		
Yes	1.24**	0.00
Aware of STI		
No (RC)		
Yes	1.02	0.40
Constant	0.82	0.00
No. of cases	**17190**	
-2log likelihood	**21963.70**	
Pseudo R square (Nagelkerke)	**0.04**	

* at 5% level of significant. ** at 1% level of significant. RC: Reference Category.

Table 6: Multinomial logistic regression analyses for sought treatment for any one symptoms of RTI/STI by selected variables, Tamil Nadu, 1998-99

	Public sector/ No treatment		Private sector/No treatment	
Background	**Exp(B)**	**Sig.**	**Exp(B)**	**Sig.**
Residence				
Rural (RC)				
Urban	1.10	0.35	1.27**	0.00
Religion				
Hindu (RC)				
Muslim	1.07	0.69	0.98	0.85
Other	1.13	0.50	1.13	0.37
Caste				
OBC (RC)				
SC/ST	1.32**	0.00	0.84*	0.04
Other	0.85	0.55	0.98	0.91
Educational levels (Year of schooling)				
0 Schooling (RC)				
1-5	1.01	0.96	1.34**	0.00
6-10	0.67**	0.00	1.41**	0.00
11+	0.38**	0.00	1.60**	0.00
Type of house				
Kachcha (RC)				
Semi-Pucca	0.89	0.22	1.12	0.17
Pucca	0.96	0.72	1.09	0.38
Age group (Years)				
15-19 (RC)				
20-29	1.44	0.16	1.79**	0.00
30+	1.34	0.28	1.59*	0.02
Age at marriage (Years)				
<18 (RC)				
18-20	0.87	0.13	0.74**	0.00
21+	0.79	0.08	0.73**	0.00
Pregnancy wastage				
No (RC)				
Yes	1.46**	0.00	1.50**	0.00
Parity				
No (RC)				
Yes	1.45*	0.05	0.79*	0.04
Contraceptive use				
No (RC)				
Yes	1.35**	0.00	1.17*	0.03
Aware of RTI				
No (RC)				
Yes	1.07	0.44	1.34**	0.00
Aware of STI				
No (RC)				
Yes	1.05	0.63	1.12	0.12
No. of cases		**6290**		
-2log likelihood		**6798.41**		
Pseudo R square (Nagelkerke)		**0.05**		

* at 5% level of significant. ** at 1% level of significant. RC: Reference Category.