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Knowledge, attitude and treatment seeking behaviour for reproductive tract infections (RTI) and sexually transmitted infections (STIs) among married women attending Suraksha Clinic, Madhya Pradesh, India

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ABSTRACT

Introduction

Reproductive tract infections (RTIs) represent a vast reservoir of infections and cause major health problems among women of reproductive age. Such infections are frequently observed in developing countries. The aim of this study is to explore knowledge of, and attitudes to RTIs/STIs, practice of safe sex and treatment seeking behaviour among selected married women attending Suraksha Clinic in North Madhya Pradesh, India.

Methods

A hospital-based cross-sectional study was carried out by involving 440 participants at the RTI/STIs Suraksha Clinic of G R Medical College, Gwalior. An anonymous questionnaire was developed as the survey instrument.

Results

Out of 440 patients diagnosed with RTIs, 312 (71%) had some knowledge of reproductive tract infections. The most commonly experienced symptom was vaginal discharge, experienced by 305 (69%) of the women. The main barriers to seeking treatment were embarrassment and only considering the symptoms to be a minor disease that did not warrant medical attention. Only 67 (22%) women reported that their partner used a condom during intercourse. Prevalence of the symptoms was found to be higher among the age group 25-35 years than in either the older age group >35 years or the younger age group 15-25 years. Housewives, those with lower educational status and those from lower classes were represented in greater numbers in the cohort than working women, more educated women and women from higher social classes.

Conclusion

There was a high level of knowledge among married women regarding RTIs and STIs but their attitudes towards safer sex and their treatment seeking behaviour does not appear to be translated into practice. We found that the influence of sociodemographic factors such as age, educational status, socioeconomic status and menstrual hygiene all have direct effects on the occurrence of RTI and STI in the community.

Keywords: Reproductive Tract Infections, Sexually Transmitted Infections, Knowledge, Attitude, Treatment Seeking Behaviour

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INTRODUCTION

Reproductive tract infections (RTIs) and sexually transmitted infections (STIs) are a major health concern among women of reproductive age. According to the World Health Organization (WHO), it is estimated that more than one million STIs are acquired every day and annually about 376 million new infections worldwide are reported for one of just four curable STIs: chlamydia, gonorrhea, syphilis and trichomoniasis.[1] WHO recommends a syndromic approach for the management of RTIs, with diagnosis based on the identification of a group of symptoms and signs associated with infection.

Sociodemographic factors along with behavioural practices influence the dynamics of RTI health-seeking behaviour.[2] Women, and particularly those living in low- and middle-income countries, are highly vulnerable to RTIs/STIs due to poverty and gender inequity which act as an important barrier to accessing healthcare services.[3] In India, The prevalence of RTI symptoms among women has been found to range from 17% to 44% in national and international studies and most of the women with symptoms of RTI either never seek treatment or delay seeking treatment.[4,5] Despite the availability of low cost and appropriate technologies for the management of RTIs/STIs, very few seek treatment either due to lack of knowledge or due to taboos regarding sexual and reproductive health.[6] This is an important aspect to consider, as the majority of RTIs/STIs have no symptoms, mild symptoms or sub-clinical symptoms, which if left untreated can cause women to go through a lot of emotional distress from infertility, along with gynaecological morbidity.[7] RTIs have an additional element of shame and humiliation for many women because they are considered unclean in Indian culture. Women avoid seeking treatment for RTIs due to lack of awareness, asymptomatic nature of RTIs and lack of treatment facilities. Indian women need accurate health education about reproductive health to reduce the stigma of RTIs and to enhance health-seeking behavior.[8] Studies have indicated an association between prevalence of RTI and factors such as lack of education, early marriage, menstrual hygiene practice, contraceptive usage, knowledge about RTIs and treatment seeking behaviour. In rural communities, cultural beliefs and practice further hinder women's health seeking behaviour.[8] In India, married women of child bearing age (18-44 years) constitute 19% of the total population. They are a vulnerable or special risk group, so need special health services. Various social, cultural and economic factors have a direct bearing on the incidence, course and outcome of a wide variety of diseases.[9] We need to understand the factors associated to be in a position to address this silent epidemic. Although programmes for prevention and control of RTI/STI exist in India they are not always able to create awareness about RTIs/STIs among married couples. Keeping this in mind, the present hospital-based study was carried out to assess the knowledge, health seeking behaviour and barriers to treatment among married women of reproductive age group in Surksha Clinic, part of a tertiary hospital in Gwalior, India.

METHODS AND MATERIALS

This study was conducted with the objective of evaluating the sociodemographic profile, knowledge, attitudes and treatment-seeking behaviour related to RTIs and STIs, and safe sexual practice, among married women of reproductive age attending Suraksha Clinic in J.A. Group of Hospital of G.R. Medical College, Gwalior. Information was recorded in the presence of a counsellor/physician. A cross-sectional study was conducted by using verbally administered questionnaires. The questionnaire was developed in the Hindi language. The researcher gave guidance by reading out the questions to the participants who gave answers that were recorded on the questionnaire. The respondent's identity remained anonymous throughout the whole study. Ethics approval was obtained from Research Ethics, G. R. Medical College and J. A. Group hospital.

The study population was married women attending Suraksha Clinic from November 2021 to February 2022. Inclusion criteria was that the married women had to be of reproductive age (15-49 years), were willing to give consent to participate in the study, and were willing to notify their partner of their

participation. Unmarried women, those under 15 and above 49 years of age and those who did not consent were excluded. Four hundred and forty (440) married women who met the inclusion criteria and were shortlisted, upon approval from management to conduct the study. Consent was taken from all patients during data collection. A few patients declined to participate and were thus excluded.

RTI symptoms were defined according to the syndromic case management guideline developed by the World Health Organization.[10] Symptoms include abnormal vaginal discharge accompanied by foul smell, ulcers in and around the genital region, pain in the lower abdomen not related to menstruation, burning sensation during urination, itching around the vulva and swelling in the groin.

A structured questionnaire included questions that recorded participants' sociodemographic profile, knowledge regarding RTI symptoms, attitude towards the STIs, safer sex and menstrual hygiene practices, and treatment-seeking behaviour. The categories of socioeconomic status by per capita income were adapted from the Agarwal A social classification.[11] The study participants' knowledge regarding RTI was assessed by asking them whether they had heard about such conditions and could name any symptoms. Condom practices were elicited by asking study participants about use. Those showing symptoms of RTI were asked if they had sought healthcare previously and whether they disclosed the problem to their family members or friends.

The questionnaire was built upon existing literature and by exploring respondents' knowledge, attitude and practice about STIs.[12,13] Part A was the demographic section. Part B tested the respondent's knowledge of sexual practice and STIs. Finally, Part C contained questions regarding the respondent's attitude towards sex, premarital/extramarital sexual activity, multiple sex partners and sexually transmitted infections. Response options were ranked according to a 5-point Likert scale, 'strongly disagree / disagree/ neutral/ agree/ strongly agree'. Data was collected using a predesigned, semi-structured, semi-open ended, questionnaire administered by the interviewer to assess socio-demographic factors, patients' knowledge of symptoms, mode of spread, delayed consequences of untreated RTIs/STIs, and whether or not RTIs/STIs are preventable or treatable. Participants were also questioned about their health-seeking behaviours and barriers to the same, such as whether they had suffered from an RTI/STI in the past, whether treatment was taken and, if not, reasons for not taking treatment. Descriptive analysis was carried out for the demographic variables. A statistical test, Chi Square, was employed to determine associations. Significance was determined to be p-value of <0.05.

RESULTS

A total of 440 participants were involved, and were divided by criteria according to age, residence, occupation, caste, marital status, education level and family income per month; this is shown in Table 1. The mean age for the participants in this study was 32.45±9.13 years old with the youngest 15 years old and eldest 47 years old. The largest group of women (199, 45%) were in the age group 25-35 years and 272 (61%) were either illiterate or educated only up to middle school level. Most (365, 83%) were married and the rest (17%) were divorced, widowed or separated. More than 60% resided in an urban area while rest were from rural areas. The majority of them 233 (53%) were classed as 'other backward class' caste and most belonged to nuclear families 282 (64%). The most common occupational status was unemployed or homemaker (258, 59%) followed by unskilled labourer or farmer 80 (18%), with 183 (42%) belonging to lower classes with an income less than 3000 Indian Rupees (approx. USD$35) per month. The prevalence of STI was higher in women who had less education (up to primary class, n=156, 35%). The prevalence of RTIs was highest in those with one or two children (266, 60%) and lowest (64, 13.5%) in the nullipara. Regarding the practice of menstrual hygiene, only 167 (38%) were using sanitary napkins and only 67 (22 %) had a partner who used condoms during sex. Just over three-quarters (71, 77%) of participants' spouses were also infected with an STI. (Table1)

Table 1 Sociodemographic characteristics of participants

Variables		STDs / RTIs Patients No (%)
Age group	15-25	101 (23%)
	25-35	199 (45%)
	>35	140 (32%)
	Mean Age = 32.45 ±9.13	
Marital status	Married	365 (83%)
	Others (Divorced, Widowed, Separated)	75 (17%)
Caste	General	95 (22%)
	OBC (Other Backward Category	233 (53%)
	SC (Schedule caste)	94 (21%)
	ST (Schedule Tribe)	18 (4%)
Education status	Illiterate	116 (26%)
	Up to Middle	156 (35%)
	Up to Secondary	96 (22%)
	>Secondary /Graduate	72 (16%)
Family type	Single /Nuclear	282 (64%)
	Joint / 3 generation	158 (36%)
Residence	Urban	282 (64%)
	Rural	158 (36%)
Socio Economic Status	Upper	51 (12%)
	Upper Middle	77 (17%)
	Lower Middle	129 (29%)
	Lower	183 (42%)
Occupation	Unemployment/Housewives	258 (59%)
	Skilled	10 (2%)
	Unskilled /Labourer/Farmer	80 (18%)
	Service	57 (13%)
Parity	Nullipara	64 (14%)
	1- 2 children	266 (60%)
	>2 children	110 (25%)
Menstrual hygiene practice	Ordinary cloth	181 (41%)
	Sanitary Pad	167 (38%)
	Not Aware	92 (21%)
Condom use	Yes	67 (22%)
	No	373 (78%)
STI/RTI in spouse (n=92)	Yes	71 (77%)
	No	21 (23%)

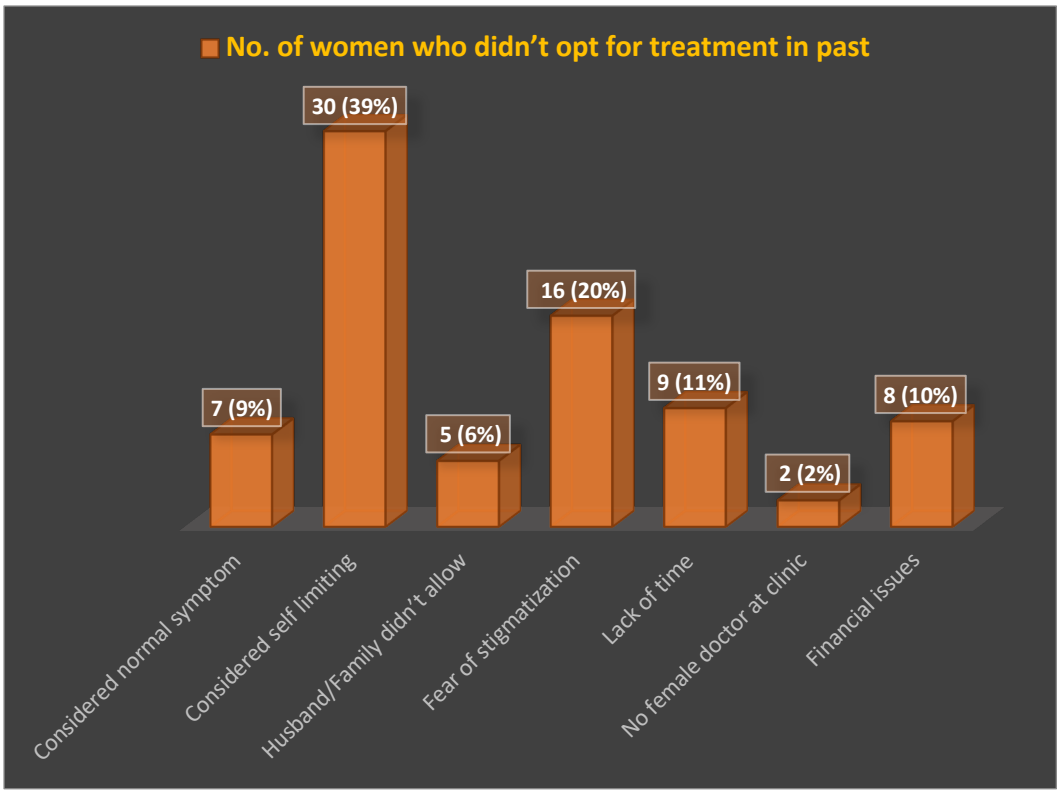

Fig 1: Previous health-seeking behaviour of women known to have had a prior infection.

The health-seeking behaviour and barriers related to treatment of RTI/STI were assessed within the 389 study participants who reported a history of RTI/STI. Those who knew of RTIs were asked about the symptoms that may indicate that a person was suffering from an RTI. Of these, 127 (29%) women said that they did not know any of the symptoms. Among those who knew about symptoms, the most common response (given by 305, 69%) was vaginal discharge, followed by vulvar/genital itching (199, 45%), while 65% gave multiple answers (e.g., pain, vaginal discharge, vulvar/genital itching and burning, micturition etc.). When asked about the causes of RTIs, just over half of the participants (231, 52%) said sexual contact, while 109 (25%) reported that it was due to sex with multiple partners; 103 (23%) said that they did not know the cause. Most (82%) said they understood that RTIs were preventable. Most commonly stated preventive measures were condom use during sexual intercourse (42%) and maintaining genital hygiene (15%). A significant number of women (99, 22.5%) said that RTI/STI can be prevented by avoiding hot foods (Table 2).

The main reasons for not seeking or completing treatment were feeling embarrassed to go to a doctor or because the treatment was considered self-limiting (39%) with 21% being afraid of stigmatization. 12% women reported that they were too busy and had no time for seeking treatment, 10% women cited financial barriers and 9% women considered the problem normal and not a reason to seek medical treatment. (Figure 1)

Out of 389 previously symptomatic women (Table 3), 312 (80%) had sought treatment, the majority of whom (145, 46.5%) had visited Government facilities, and 81 (26%) had gone to a private practitioner. A high percentage of the participants said they would not have sexual intercourse with someone who was known to have a sexually transmitted disease 403 (92%) and nearly all said they disapproved of sex with multiple partners 428 (97%). All agreed that it is important to seek medical help after getting infected. 348 (79%) agreed that condom use was prudent when RTI was suspected, or during sex with a different partner (Table 4).

Table 2: Knowledge of symptoms, mode of tansmission and preventive measures amongst respondents

Knowledge of variables status (**Multiple Response Possible)*		No (%) *
Awareness of RTI/STI symptoms	Vaginal discharge	305 (69%)
	Vulvar/genital itching	199 (45%)
	Burning/painful micturition	88 (2%)
	Lower abdominal pain	107 (24%)
	Dyspareunia	29 (7%)
	Menorrhagia/unusual vaginal bleeding	18 (4%)
	Foul smell in vaginal discharge	113 (26%)
	Genital ulcer	80 (18%)
	Don't know	127 (29%)
Knowledge of transmission of RTI/STI	Sexual contact	231 (53%)
	Multiple sex partners	109 (25%)
	Unsafe delivery	87 (20%)
	BT/Infected needles	89 (20%)
	Poor menstrual genital hygiene	125 (28%)
	Warm/spicy food	99 (22%)
	Don't know	103 (23%)
Knowledge about preventive measures for RTI	Avoiding intercourse with infected partner	155 (35%)
	Avoiding multiple sex partner	104 (24%)
	Use of condom	228 (52%)
	Safe delivery / abortion	87 (20%)
	Good genital /menstrual hygiene	189 (43%)
	Avoiding warm /spicy food	99 (23%)
	Don't know	121 (27%)

Table 3 Healthcare/treatment seeking behaviour among participants attending Suraksha Clinic (n=389)

Treatment-seeking behavior		No. (%)
Treatment status	Treatment taken	312 (80%)
	Treatment not taken	77 (20%)
Source of treatment	Government facilities	145 (46%)
	Private practitioner	81 (26%)
	Medicine directly from pharmacy	57 (18%)
	Traditional healer	7 (2%)
	Self /natural remedies	22 (7%)
First contact with the treatment provider (n=312)	Within 7 days	86 (28%)
	More than 7 days	226 (72%)
Compliance	Treatment completed	174 (56%)
	Treatment not completed	138 (44%)
Follow up	Yes	62 (20)
	No	250 (80)
Treatment for husband	Taken	24 (8)
	Not taken	288 (92)

Table 4: Attitudes towards sexually transmitted diseases

Attitude	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	n (%)	n (%)	n (%)	n (%)	n (%)
Avoiding 'being together' (sexual intercourse) with someone who has sexually transmitted diseases are necessary because it can be contagious	116(26%)	287(66%)	37 (8%)	0 (0)	0 (0)
An STD infected person should seek medical help	349 (79%)	91 (21%)	0	0	0
What do you think about sex before marriage?	0 (0)	14 (3%)	89 (20%)	285 (65%)	52 (12%)
What do you think about multiple sexual partners (more than one)?	0	0	12 (3%)	36 (8%)	392 (89%)
What do think about condom use during suspected or another partner	92 (21%)	256(58%)	59 (13%)	35(8%)	0(0)
If you have symptoms of sexual illness, are you willing to see a doctor?	134(30%)	184(42%)	109(25%)	13(3%)	0

DISCUSSION

According to the US Centers for Disease Control and Prevention (CDC) in 2017, South and Southeast Asia reports the largest number of new cases of curable STIs annually.[14] However, knowledge and awareness among the public regarding this is still questionable, especially for those who are most at risk. The main purpose of conducting this study on married women who attended Suraksha Clinic was to understand the prevalence of RTI symptoms and treatment-seeking behaviour.[15] The prevalence of RTIs was high in the age group 25–35 years (45%) and lower in the age group <25 years (23%). Kosambiya et al,[16] and Durga et al[17] in their studies of Gujrat and Tamil Nādu, India also reported high prevalence of STI in the age group of 26–30 years. However, another study by Thomas et al[16] in Tamil Nadu, India reported that the age groups between 30-39 years (35.8%) and 20-29 years (35.3%) were at highest risk of contracting STI. Mishra et al[19] reported 70% of the women in their study were in the age group 25-44 yrs. These findings suggest that interventions for prevention of STI should begin at an early age of sexual activity.

The prevalence of STI was lower in women who had better education 72 (16% for those with at least secondary education compared with 35% and 22% for those with primary or middle school education, respectively) and this was found statistically significant (p<0.001). Thomas et al[18] in his study found that 25.3% of those infected were illiterate, 32.4% had primary education only, 30.3% had at least high school education and 13.8% had undertaken higher education.[8] Similar findings were observed by Durga et al,[17] who found 183 (41.6%) of women whose monthly income was below 3000 INRs had a higher risk of acquiring STI, which indicates that low socioeconomic group is a risk factor; Kosambiya et al[16] and Durga et al[17] found the same.

STI positive women were most likely (258, 59%) to be unemployed/housewives and 80 (18%) were unskilled labourer/farmers, this may suggest that housewives are less aware about RTI risks and how to prevent them or may be a reflection of the numbers of housewives in this social demographic; this was not explored in this study. Thomas et al[18] also found that 42.5% of infected women were unemployed, and the majority of them were housewives; Kosambiya et al[16] found that 71% of women in their study were housewives. Jasmin Helen et al,[20] in a study of RTIs in

women of Vellore District, India reported that 55% of STI positive women were performing household chores and 32% worked as agricultural labourers.[12] Similarly Durga et al[17] stated that 43.3% of STI positive women were housemaids (independent risk 50.8%) and 20.5% were building labourers (independent risk of 58.9%).

A little under half (181, 41%) of women who were diagnosed as having STI used cloths during menstruation (i.e., washable cloths rather than disposable napkins) and 92 (21%) women were not aware of sanitary napkins but were using soap and water for washing their genitals during their menstrual period. Similarly, Durga et al[17] mentioned that only 13.5% of women who were diagnosed as having STI used fresh cloths every day. Reusing the same cloths for more than one day, using cloths rather than disposable sanitary napkins and not washing properly are all risk factors for acquiring an RTI.

Nearly four in five (373, 78%) of STI-positive women reported that their partner(s) did not use a condom. Similarly, Jasmin Helen et al[20] and Durga et al[17] found condom use in <5% of the partner(s) of infected women. Not using a condom during sex with a husband or extramarital partner with a suspected or unsuspected STI is a major cause of infection. In our study, 77% of STI positive women had partners symptomatic for STI; this finding was similar to Durga et al[17] who reported 83.7%.

Having knowledge that a disease is treatable can be an important factor in deciding to take complete treatment but only around 50% women in our study were aware that RTI/STIs are treatable and only 231 (52.5%) knew about the mode of spread i.e., through sexual intercourse. In another study of Tamil Nādu in India, 57% women knew sexual contact was a way of transmitting RTIs, whereas in contrast only 27.3% of the participants in a study conducted in Lahore[21,22] mentioned sexual contact as mode of transmission. This difference could be a result of different study settings or different socioeconomic characteristics of the study participants. Incorrect knowledge about mode of spread can act as a hindrance in adopting preventive measures: in the present study 41% of the women thought it can spread through toilet seats, which is similar to that reported by Rabiu et al.[23]

Vaginal discharge was the most common symptom, reported by 305 (69%), followed by vulvar/genital itching (199, 45%), foul smell in vaginal discharge (113, 26%) and lower abdominal pain (107, 24%). Durga et al[17] identified high figures for vaginal discharge (96%) followed by itching (34%), dyspareunia (24%), urinary complaints (20%) and lower abdomen pain (18%). Symptoms such as fever and genital ulcer were specific for the symptom positive group. Mishra et al[17] and Kosambiya et al[16] also reported that vaginal discharge (84%) was the most common presenting symptom, followed by lower abdomen pain. A large proportion of the women in our study (231, 52.5%) knew that STIs are transmitted by sexual intercourse but the majority of women >80% did not know about safe sex, and might be engaging in sexual activity without accurate information, which risks STIs and unwanted pregnancy.[24] Out of 389 women who had had symptoms of RTI/STI in the past, 312 (80%) had taken treatment, but only 174 (56%) of those had completed the course. Earlier studies conducted in Delhi, India have also reported similar findings and in a study conducted in Bangalore only 29% of the symptomatic women took treatment; this is lower than in our study, but the proportion of women completing treatment were comparable.[25-27]

We found that women were most likely (47%) to belong to lower and lower-middle class, so the majority of them approached government hospitals, rather than the more expensive private hospitals, for treatment. Accessibility, availability and opening times of government health facilities in the study area could be some of the possible reasons for the differences we observed.[28,29] In the present study, when the study participants were asked about their reasons for not seeking treatment in the past, the most frequent reason given was that it was considered to be self-limiting (39%) and due to fear of stigmatization (21%); also, the women find it difficult

to describe genital symptoms openly to family members and friends. A similar finding has been reported in a study from Haryana[30] and another in Tamil Nādu.[31] Morris et al.[32] reported that less RTI-related stigma was associated with increased seeking of health care and increased testing. Other studies[17,33] have also reported that stigma associated with RTI contributes to decreased health-seeking behaviour.

Nine out of 19 (91%) of the women agreed that avoiding sexual activity with an STD-infected person would prevent spread. Studies done in the USA have shown a high percentage of respondents (up to 71%) also agreed with this.[11,34,35] This study found that almost all women agreed that an STI infected person should seek medical help. A previous study in Malaysia showed similar findings of 85.5% agreeing to seek immediate treatment if they or their partners have STI symptoms.[36] With regards to having sex with multiple partners, 97% claimed to oppose it but their practices suggested that the women contracting STIs either have multiple sexual partners or that their partners may have multiple partners and then pass it to them.

Our findings suggest that the attitudes of the participants is influenced by their knowledge of RTIs; a study in Penang also found a similar correlation.[17,37] Their attitude also seems to be influenced by age. As they get older, knowledge and awareness increases, and they show more positive attitudes. Although 77% of the participants believed that condom can prevent STD, less than 25% say they use one during sexual acts. Other studies corroborate this, reporting a high tendency for non-condom use at a woman's first sexual act and on most occasions of sexual intercourse.[38, 39] A study in Brazil reported that while 94% were aware of the role of condom use in STI prevention, only 34% used one during casual sex.[40]

The major barriers for not taking treatment in our study were embarrassment (46%) followed by not considering it to be an important health problem (21%). Considering it as a normal condition, being too busy, not being able to afford to go to a doctor and lack of privacy in the health facility were other reasons why women were not seeking treatment. Similar findings have been reported with regard to treatment-seeking behaviour and barriers for seeking treatment for RTI/STI by various other studies in India.[41,42] Mathew et al reported that factors such as considering gynecological morbidity normal, shyness, not knowing how to explain the symptoms, lack of money, high cost of service, distance to the healthcare facility and fear of complication were the barriers reported for seeking treatment – few of the barriers were different from those observed in our study.[43] This difference could be attributed to a difference in study settings, urbanized villages compared to rural settings, and different levels of education among the respondents.

Limitations of this study include that we could not study factors such as partner history of RTI. The results obtained in this study represent only the selective participants of married women of one tertiary level facility, Suraksha Clinic in one State, Madhya Pradesh, and not the whole community of reproductive age women across India. Although the questionnaire was guided, it was self-filled by the participants. Therefore, there might be under-reporting on some questions related to sexual behaviour since sex is a taboo topic in conservative Indian society. Recall bias was possible due to close-ended questions and multiple-choice answers.

CONCLUSION

There is a changing trend in sexual and reproductive behaviour among youths in India and this requires more attention and awareness from healthcare professionals to provide necessary sexual or reproductive care and education.[44] Regular health screening for STIs and adequate correct information is essential for youth before they commence in sexual activity and marriage. Furthermore, this is a cross-sectional study and the results can be descriptive only. Hence, exploratory study should be carried out in future for better understanding on knowledge, attitude and practice of STI among these women. The gaps observed in knowledge regarding physical and genital hygiene are a platform for action to increase awareness and hence improve hygiene practices.

REFERENCES

1. World Health Organization. Factsheet sexually transmitted infections (STIs) Updated June 2019. Available at http:// www. WHO. int/ newsroom/newsletter. Accessed on 25May 2022.
2. National Guidelines on Prevention, Management and Control of Reproductive Tract Infections Including Sexually Transmitted Infections. Available from: http://www.naco.gov.in/upload/STI%20 RTI%20services/ National Guidelines_ on PMC _of_RTI_Including_STI%201.pdf. [Last accessed on 2022 June 6].
3. Nielsen A, Lan PT, Marrone G, Phuc HD, Chuc NTK, Lundborg CS. Reproductive tract infections in rural vietnam women's knowledge and healthseeking behavior: a cross-sectional study. Health Care Women Int. 2016; 37:392-411.
4. Nagarkar A, Mhaskar P. A systematic review on the prevalence and utilization of health care services for reproductive tract infections/sexually transmitted infections: Evidence from India. Indian J Sex Transm Dis AIDS. 2015;36(1):18-25.
5. Garg S, Sharma N, Bhalla P, Sahay R, Saha R, Raina U, et al. Reproductive morbidity in an Indian urban slum: Need for health action. *Sex Transm Infect.* 2002; 78:68–9. [PMC free article] [PubMed] [Google Scholar]
6. Shingade PP, Kazi Y, Lh M. Treatment seeking behavior for sexually transmitted infections/reproductive tract infections among married women in urban slums of Mumbai, India. South East Asia J Public Health. 2015; 5:65-70.]
7. Puthuchira RR, Athimulam KR. Care seeking behaviour and barriers to accessing services for sexual health problems among women in rural areas of Tamil Nādu State in India. J Sex Transm Dis. 2014; 2014:292157.]
8. Elahee SMA, Muhmud S, Tanvir S, Rahman MZ. Breaking the silence: reproductive tract infections (RTIs) among women in slums of Khulna City, Bangladesh. Bangladesh e-J Sociol. 2013;10(2):119- 34.
9. Park K. Social sciences and medicine. Park's text book of preventive and social medicine. 25th edn. M/s Banarsidas Bhanot; 2019: pp 572.]
10. WHO Guidelines for the management of symptomatic sexually transmitted infections. July 2021. Available at https://www.who.int/publications/i/item/9789240024168. [Last access on 28th June 2022
11. Agarwal A. Social classification: the need to update in the present scenario. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine 2008, 33(1), 50–51. https://doi.org/10.4103/0970- 0218.39245
12. Noraziah Mohamad Zin, Ismarulyusda Ishak and Kasturi Manoharan. Knowledge, attitude and practice towards sexually transmitted diseases amongst the inmates of women shelters homes at Klang Valley. BMC Public Health 2019, 19(Suppl 4):639 https://doi.org/10.1186/s12889-019-6863-5.
13. Trajman A, Belo MT, Teixeira EG, Dantas V, Salomao FM, Cunha AJ. Knowledge about STD/AIDS and sexual behavior among high school students in Rio de Janeiro, Brazil. Cadernos de Saúde Pública. 2003; 19:127–33.]
14. Centers for Disease Control and Prevention. Sexually transmitted disease surveillance 2011. Atlanta: U.S. Department of Health and Human Services. Accessed 15 Oct 2017.
15. Mustapa MC, Ismail KH, Mohamad MS, Ibrahim F. Knowledge on sexuality and reproductive health of Malaysian adolescents - a short review. Procedia Soc Behav Sci. 2015; 211:221–5.]
16. Kosambiya JK, Desai VK, Bhardwaj P, Chakraborty T. RTI/STI prevalence among urban and rural women of Surat: A community-based study. Indian J Sex Transm Dis AIDS. 2009 Jul;30(2):89-93. doi: 10.4103/0253-7184.62764. PMID: 21938127; PMCID: PMC3168065.
17. Durga K, Karthika K. Prevalence of sexually transmitted infections at a tertiary hospital in Tamil Nadu. Int J Reprod Contracept Obstet Gynecol 2017; 6:3573-80
18. Thomas K, Thyagarajan SP, Jeyaseelan L, Varghese JC, Krishnamurthy P, Bai LA et al. Community prevalence of sexually transmitted diseases and human immunodeficiency virus infection in Tamil Nadu, India: a probability proportional to size cluster survey. Natl Med J India. 2002;15(3):135-40.
19. Mishra A, Verma P, Marathe N. Study of the Profile of Patients with STDs Attending an STD Clinic in J.A.H., Gwalior Indian J Community Med. 2008; 33(4):263-4.
20. Helen J, Sulochana P, Kathleen A, Kurz M. reproductive tract infections among young married women in Tamil Nadu, India. Int Fam Plann Perspec. 2005;31(2):73-82.
21. Nigam VS, Srivastava VK. Knowledge about sexually transmitted disease (STD) among the women in a rural population of Uttar Pradesh. IJMSCI. 2018; 5:3966-9.
22. Chaudhry R, Majrooh A, javed s. understanding and care seeking behavior of reproductive tract infections and sexually transmitted diseases among married women attending a tertiary care hospital, Lahore, Pakistan. Biomedica. 2013; 29:175-80
23. Rabiu KA, Adewunmi AA, Makinlusi A, Akinola O I. Female reproductive tract infections: understanding and care seeking behavior among women of reproductive age in Lagos, Nigeria. BMC Women's Health. 2010;10:8.
24. Williamson LM, Parkes A, Wight D, Petticrew M, Hart GJ. Limits to modern contraceptive use among young women in developing countries: a systematic review of qualitative research. Reprod Health. 2009;6(1):3]. Interestingly 99 (22.5%) women told that STI also spread by Warm/Spicy food
25. Verma A, Kumar J, Meena, Banerjee B. A comparative study of prevalence of RTI/STI symptoms and treatment seeking behaviour among the married women in rural and uban areas of Delhi. Int J Reprod Med. 2015; 563031:1-8.
26. Bhilwar M, Pannalal, Sharma N, Bhalla P, Kumar A. Prevalence of reproductive tract infections and their

determinants in married women residing in an urban slum of North-East Delhi, India. J Nat Sci Bio Med. 2015;6: S29-S34.
27. Ratnaprabha GK, Thimmaiah S, Johnson AR, Ramesh N. Prevalence and awareness of reproductive tract infections among women in selected underpriviledged areas of Banglore City. Int J Med Sci Public Health. 2015; 4:1691-6.
28. Devi BS, Swarnalatha N. Prevalence of RTI/STI among reproductive age women (15-49 years) in urban slums of Tirupati town, Andhra Pradesh. Health Popul Perspect Issues. 2007; 30:56-70.
29. Rabiu KA, Adewunmi AA, Makinlusi A, Akinola O I. Female reproductive tract infections: understanding and care seeking behavior among women of reproductive age in Lagos, Nigeria. BMC Women's Health. 2010; 10:8.
30. Rizwan S, Rath RS, Vivek G, Nitika, Anant G, Farhad A, et al. KAP study on sexually transmitted infections/Reproductive tract infections (STIs/RTIs) among married women in rural Haryana. Indian Dermatol Online J 2015; 6:9-12.
31. Prasad JH, Abraham S, Kurz KM, George V, Lalitha MK, John R, et al. Reproductive tract infections among young married women in Tamil Nadu, India. Int Fam Plan Perspect 2005; 31:73-82
32. Morris JL, Lippman SA, Philip S, Bernstein K, Neilands TB, Lightfoot M, et al. Sexually transmitted infection related stigma and shame among African American male youth: Implications for testing practices, partner notification, and treatment. AIDS Patient Care STDS 2014; 28:499-506.
33. Bhawsar R, Singh J, Khanna A. Determinants of RTI/STI's among women in Punjab and their health seeking behavior. J Fam Welf 2005; 51:24-35
34. Hogben M, Chesson H, Aral SO. Sexuality education policies and sexually transmitted disease rates in the United States of America. Int J STD AIDS. 2010;21(4):293–7.
35. Kirby DB. The impact of abstinence and comprehensive sex and STD/HIV education programs on adolescent sexual behavior. Sex Res Soc Policy. 2008;5(3):18.
36. Folasayo AT, Oluwasegun AJ, Samsudin S, Saudi SN, Osman M, Hamat RA. Assessing the knowledge level, attitudes, risky behaviors and preventive practices on sexually transmitted diseases among university students as future healthcare providers in the Central Zone of Malaysia: a cross-sectional study. Int J Environ Res Public Health. 2017;14(2):159
37. Wong LP. An exploration of knowledge, attitudes and behaviours of young multiethnic Muslim-majority society in Malaysia in relation to reproductive and premarital sexual practices. BMC Public Health. 2012;12(1):865.
38. Adhikari R. Are Nepali students at risk of HIV? A cross-sectional study of condom uses at first sexual intercourse among college students in Kathmandu. J Int AIDS Soc. 2010;13(1):7.
39. Adebiyi AO, Asuzu MC. Condom use amongst out of school youths in a local government area in Nigeria. African Health Sciences. 2009;9(2).
40. Trajman A, Belo MT, Teixeira EG, Dantas V, Salomão FM, Cunha AJ. Knowledge about STD/AIDS and sexual behavior among high school students in Rio de Janeiro, Brazil. Cadernos de Saúde Pública. 2003; 19:127–33.
41. Ratnaprabha GK, Thimmaiah S, Johnson AR, Ramesh N. Prevalence and awareness of reproductive tract infections among women in selected underprivileged areas of Bangalore City. Int J Med Sci Public Health. 2015; 4:1691-6.
42. Khargekar VC, Koujalgi S. A study on the prevalence of sexually transmitted infections, the health care seeking behavior and the barriers for the treatment of sexually transmitted infections in the urban slums of Davangere. Int J Med Sci Public Health. 2015; 4:823-8.
43. Mathew L, Ansuya, Francis LA. Perceived barriers for utilization of health care system among married women with gynaecological morbidity in Udupi Taluk, Karnataka. Indian J Public Health Development. 2016; 9:85-8
44. Low WY. Malaysian youth sexuality: issues and challenges. Journal of Health and Translational Medicine. 2009;12(1):3–14.]