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Original Research Article

## A study to determine socio demographic correlates of reproductive tract infection amongst women of reproductive age group

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### ABSTRACT

**Background:** Reproductive tract infection (RTI) is a public health problem, especially in developing country like India. The associated odium with this reproductive morbidity is often a stumbling block in seeking health care. The aim was to study the prevalence of RTI symptoms and its socio-demographic correlates.

**Methods:** A cross-sectional study was undertaken in the rural field practice area of department of community medicine, Indira Gandhi Medical College, Shimla, Himachal Pradesh, India, from July 2018 to September 2018. Total sample size calculated was 410. Random sampling was used to select eligible couple to whom a predesigned, pretested, semi-structured and anonymous interview schedule was administered after taking consent.

**Results:** The prevalence of self-reported reproductive tract infections was found to be 41.2%. The prevalence was more in lower socio-economic classes, and it was statistically significant. Other socio-demographic correlates (age, education, occupation) did not showed any significant association.

**Conclusions:** The reproductive tract infections prevalence is found to be considerably high in the women of reproductive age group. The frequency was higher among multigravida women and those using cloth during menstrual periods. RTIs are usually spurned by women and even the health care providers, so there is a need to give due consideration to this aspect of reproductive health.

**Keywords:** Cross-sectional, Prevalence, Reproductive tract infections, Women of reproductive age group

### INTRODUCTION

Sexually transmitted infections (STI) constitute a significant health burden and its very well known for increasing the risk of HIV transmission.<sup>1</sup>

Reproductive tract infection (RTI) is common yet neglected global health problem, mainly among reproductive age group of women, living in South East Asian Region (SEAR) countries. The prevalence of RTI in India and countries like Bangladesh, Egypt, and Kenya is in the range of 52-90%.<sup>2</sup>

The prevalence of self-reported RTI symptoms among women in reproductive age group in India has been found to be 11-18% in nationally representative studies.<sup>3,4</sup>

According to the World Health Organization (WHO), each year around 499 million cases of curable STIs occur throughout the world in the age group of 15-49 years, of which 80% cases occur in developing countries and about 79 million cases occur in India annually.<sup>5</sup>

Reproductive tract infections (RTIs) are caused by organisms which are commensals in reproductive tract or introduced from the outside during sexual contact or medical procedures. Reproductive tract infections (RTIs) include three types of infection: 1) sexually transmitted diseases (STDs), such as chlamydia, gonorrhoea, chancroid, and human immunodeficiency virus (HIV); 2) endogenous infections, caused by overgrowth of organisms normally present in the genital tract of healthy women, such as bacterial vaginosis or vulvovaginal

candidiasis; and 3) iatrogenic infections, that are associated with improperly performed medical procedures like unsafe abortion or poor delivery practices.<sup>6</sup>

The consequences of STIs/RTIs can be severe and life threatening. They include pelvic inflammatory disease (PID), infertility (in women and men), ectopic pregnancy, and adverse pregnancy outcomes including miscarriage, stillbirth, preterm birth, and congenital infection. STIs/RTIs are found to increase the risk of HIV transmission also.<sup>7</sup> With early detection and treatment, RTIs and its complications can be prevented and severity of long-term sequel can be further minimized. Despite these facts, RTIs still remain undiagnosed and untreated.

Cultural barriers, poor understanding of symptoms, lack of privacy, lack of a female doctor at the health facility, the cost of treatment, social stigma, and fear of internal check-up delay seeking treatment.<sup>8-12</sup> All such barriers pose a challenge for the effective implementation of programs that are aimed at the prevention and control.<sup>13</sup>

## METHODS

A population based descriptive cross-sectional study. Women of reproductive age (15-49 years) in rural field practice area of Department of Community Medicine, IGMC, Shimla, Himachal Pradesh, India. The duration of this study was 3 months July 2018 to September 2018. With an area population of 81,000 the eligible couples came out to be 12,150 to 14, 580. Considering a population of 13,000 with prevalence of reproductive ill health as 50%, with 5% margin of error and 95% confidence limits, a sample of 373 is calculated. Further, taking a non-response rate of 10%, final sample comes out to be 410. All the participants during the study duration who fulfilled the inclusion criteria were recruited in the study.

### Inclusion criteria

- Resident of the area (residing for >6 months)
- Ever married females (15-49 years)
- Consented to participate in study.

### Exclusion criteria

- Chronic serious/debilitating patient
- Any psychiatric illness.

### Study tool

Interview schedule used was predesigned, pretested, semi-structured and anonymous.

### Sampling strategy

The representative sample was selected from the eligible couple register, using the random numbers that were

generated using the Microsoft excel. The selected subjects were then approached for data collection. In case the selected participant was not available, then the next participant in the eligible couple register was selected for the interview.

At the time of study enrolment, the anonymity of the participants was maintained and after obtaining the informed consent only, authors conducted a face-to-face interview of eligible candidates and filled the interview schedule.

### Exposure variables

Included socio-demographic variables like age, type of family, education of participants and their spouse, occupation, socio-economic status and parity.

### Outcome variables

Reproductive tract infections like vaginal discharge, itching, lower abdominal pain, genital ulcers and redness, burning pain during micturition.

## RESULTS

Of 410 ever married women studied, 94 (22.3%) were pregnant at the time of survey. Mean age of participants was 28.9±5.9 years ranging from 19-48 years. Majority of the participants (70.2%) were aged less than 30 years and 61.2% were home-maker (Table 1).

**Table 1: Distribution of study participants according to socio-demographic characteristics (N=410).**

Socio demographic variables	N (%)
<b>Type of family</b>	
Nuclear	196 (47.8%)
Joint	132 (32.2%)
Three generation	82 (20%)
<b>Religion</b>	
Hindu	408 (99.5%)
Muslim	2 (0.5%)
<b>Educational status</b>	
Illiterate	12 (2.9%)
Primary School	34 (8.3%)
Middle School	46 (11.2%)
High School	139 (33.9%)
Secondary School	96 (23.4%)
Graduate	45 (10.9%)
Post-graduate	38 (9.3%)
<b>Occupation</b>	
Govt. Employee	27 (6.6%)
Self-employed	19 (4.6%)
Agricultural worker	63 (15.4%)
Housewife	251 (61.2%)
Private Company	50 (12.2%)

**Table 2: Distribution of reproductive tract infections among study participants (N=410).**

Characteristics	Pregnant (94) N (%)	Non-pregnant (316) N (%)	Total N (%)
Lower abdominal pain	13 (13.8%)	44 (13.9%)	57 (13.9%)
Foul smelling discharge	17 (18.1%)	44 (13.9%)	123 (30%)
Burning pain during micturition	9 (9.6%)	16 (5.06%)	25 (6.1%)
Redness in genital area	11 (11.7%)	17 (5.4%)	28 (6.8%)
Genital ulcers/sores	1 (1.1%)	5 (1.6%)	6 (1.5%)
Genital itching	30 (31.9%)	15 (4.8%)	45 (10.9%)
Something bulging out of vagina	0 (0.0%)	2 (0.6%)	2 (0.5%)
Overall RTI prevalence	48 (51.1%)	121 (38.3%)	169 (41.2%)

**Table 3: Association of socio-demographic variables and reproductive tract infections (N=316).**

Characteristics	Reproductive tract infection		p-value
	Present	Absent	
<b>Age group (years)</b>			
15-25	68 (53.5%)	59 (46.5%)	0.176
26-35	118 (52%)	109 (48%)	
36-49	22 (39.3%)	34 (60.7%)	
<b>Education</b>			
Illiterate	8 (66.7%)	4 (33.3%)	0.105
≤High school	119 (54.3%)	100 (45.7%)	
>High school	81 (45.3%)	98 (54.7%)	
<b>Occupation</b>			
Employed	47 (49.5%)	48 (50.5%)	0.153
Agricultural worker	39 (61.9%)	24 (38.1%)	
Home-maker	122 (48.4%)	130 (51.6%)	
<b>Education of spouse</b>			
Illiterate	1 (20%)	4 (80%)	*0.012
≤High school	115 (57.8%)	84 (42.2%)	
>High school	92 (44.7%)	114 (55.3%)	
<b>Socio-economic status</b>			
Upper class	57 (34.5%)	108 (65.5%)	*0.025
Upper middle class	109 (57.4%)	81 (42.6%)	
Middle class	24 (68.6%)	11 (31.4%)	
Lower middle class	10 (90.9%)	1 (9.1%)	
Lower class	8 (88.9%)	1 (11.1%)	

p value <0.05 significant.

Only 27.1% of the participants had heard about one or the other reproductive tract infection. The prevalence of self-reported reproductive tract infections (RTIs) among the women of reproductive age group was found to be 41.2%. The prevalence of RTI was more among currently pregnant women (51%), compared to females who were not pregnant at the time of study (38.3%). The most common infection was found to be foul smelling discharge (30%), followed by lower abdominal pain (14%) genital itching (11%) (Table 2).

Nearly half (52%) of the participants sought treatment for reproductive tract infections from the hospital. The most common reason among those not seeking the treatment was the unavailability of female doctor (2.9%), and 1.7% were hesitant as they were embarrassed or

ashamed about the complaint. The prevalence of reproductive tract infections was more in lower socio-economic classes, and it was statistically significant (p value 0.025). Other socio-demographic correlates (age, education, occupation) did not showed any significant association with the presence of reproductive tract infections. Though, the reproductive tract infections were found to decrease with the age and (chi-square=2.32 and p value 0.126) and schooling (chi-square=4.44 and p value 0.03), but it was not statistically significant (Table 3).

## DISCUSSION

The study sought to identify the prevalence of self-reported RTI among women living in rural areas, the

determinants of the infection, health care seeking behaviour for the same.

The prevalence of self-reported reproductive tract infections was found to be 41.2%, with foul smelling vaginal discharge (30%) being the most common reported infection followed by lower abdominal pain (13.9%), itching around vagina (10.9%), burning pain on micturition (6%). Nearly half of the participants sought treatment from the health institutions.

Almost similar to this findings, the prevalence of RTI was reported in a study among married women of reproductive age in a village in Nepal. The most common symptoms experienced that were suggestive of RTI include low back pain, 32.6%, followed by vaginal discharge, 26.7%, low abdominal pain, 19.4%, itching around vagina, 15.9%, painful or burning urination, 10.5%.<sup>14</sup>

Another study done in an urban slum of North-East Delhi, on the prevalence of reproductive tract infections, concluded that 43.9% women currently had symptoms of RTIs. These findings were also congruous with this study results.<sup>15</sup>

NFHS-4 survey found the prevalence of self-reported sexually transmitted infections or symptoms of an STI (a bad-smelling, abnormal discharge from the vagina, a genital sore, or a genital ulcer) to be 11%.<sup>16</sup>

Half of all symptomatic women did not seek health care for RTI symptoms, primarily because women were not aware that the symptoms required treatment.

This study observation commenced that most rural Indian women did not seeked care for reproductive symptoms due to a lack of knowledge, unavailability of female doctor, followed by their hesitancy to talk about symptoms.

A Chennai based study on RTIs, found that the reason for symptomatic women not seeking any treatment was the perception that their symptoms were normal as well as lack of family support, financial constraints, lack of decision-making power and embarrassment.<sup>17</sup> Another study in Tamil Nadu by Geeta Mani, found stigma and embarrassment, lack of privacy, lack of female doctors at health facilities and treatment cost to be the most common reasons for not seeking treatment.<sup>18</sup>

This study found that, nearly half of the reproductive tract infections were found in the age group of 26 to 35 years (52%). Similar results were found in studies by Sharma S et al, Nandan et al and Rabi KA et al.<sup>19-21</sup> This can be explained by the facts that with increasing age women experienced longer married life, pregnancies, gynecological examinations, deliveries, use of invasive contraceptives; make women more vulnerable to RTIs. This explanation is further supported by the observation

made in the present study that nearly half of the multigravida women had one or the other RTI.<sup>20-21</sup>

The present study found socio-economic status to be a potential determinant, which were associated with the RTIs. 90% participants belonging to lower class reported reproductive tract infections and 71.4% RTI was found in participants using cloth.

Similar results were found in a study by Bhilwar et al, where the odds of having RTI were more in women belonging to the lower socio-economic status (OR 2.1, 95% CI: 1.5-2.9).<sup>15</sup> Women using cloth during menses, those having more than three pregnancies and those using an intrauterine contraceptive had higher odds of having RTIs.

The current study, found the prevalence of RTI was highest among agricultural workers. However, no significant association between RTI and occupation could be seen ( $p=0.153$ ). RTIs were more common in lower socioeconomic strata, and it was found to be significant ( $p$  value=0.02).

Comparable to this study were the findings of Gupta U et al in Lucknow.<sup>22</sup> A similar result found in the study carried out by Parashar A et al in Shimla town in which majority of symptomatic women belong to lower middle class.<sup>23</sup>

The present study showed that prevalence of RTI/STD was low among more educated females in comparison to less educated and illiterate women. This finding was similar to the findings of Gupta U et al, Panda et al, Deokinandan et al, data from NFHS-4 survey, Ranjan et al, Pant et al, Rathore et al and Datey et al.<sup>22, 25-29</sup>

The current study found that there was a significant association ( $p$  value=0.012) found with the women having symptoms of reproductive tract infections and their educational status of husbands, which was similar to the study by Thekdi KP et al.<sup>30</sup> The prevalence of reproductive tract infections of women was found to be decreased, with the improvement in their husbands' educational status suggesting the important role of the education in preventing sexually transmitted diseases.

The present study found that the prevalence RTI was higher in those participants who had poor menstrual hygiene. The prevalence of RTI was significantly associated with menstrual hygiene ( $p=0.019$ ). This was found identical with the findings of Gupta U et al, Rathore et al, Sinha and Mishra and Pant et al, which showed the higher prevalence of RTI among women with poor hygiene.<sup>22,28,31</sup>

## CONCLUSION

The reproductive tract infections prevalence is found to be considerably high in the women of reproductive age

group. The frequency was higher among multigravida women and those using cloth during menstrual periods. RTIs are usually spurned by women and even the health care providers, so there is a need to give due consideration to this aspect of reproductive health. The knowledge about various maternal and child health programmes, safe abortion services and medical termination of pregnancy need to be contemplated. The awareness regarding the screening for cervical and breast cancer need to be reinforced, so that overall reproductive health of women is improved in context to the target set for universal health coverage.

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