



## Original Research Article

# REPRODUCTIVE TRACT INFECTIONS/SEXUALLY TRANSMITTED INFECTIONS AMONG MARRIED FEMALES – A CROSS SECTIONAL STUDY IN A RURAL BLOCK OF HARYANA

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### ABSTRACT

**Background:** Reproductive tract infections and sexually transmitted infections (RTI/STIs) are becoming a major health problem not only in India but all over the world. More than 100 million mostly curable STIs occur annually in young people aged 15 to 24 years. As per recent STI prevalence study done by National Family Health Survey-5 prevalence of STI/genital discharge/ sore or ulcer among women of age 15-49 years was found to be 12.3 percent in India while in Haryana 11.6 percent of females reported the same. The objective is to estimate the prevalence of reproductive tract infections/sexually transmitted infections among married females & to identify the determinants of RTIs/STIs. **Materials and Methods:** This study was conducted among 300 women aged 15-49 years, in the area of Community Health Centre, Dighal (District Jhajjar), which is the rural field practice area attached to Dept. of Community Medicine, PGIMS, Rohtak from April 2021 to March 2022 using WHO syndromic approach.

**Results:** The prevalence suggestive of RTI/STI was found to be 39.3% (period prevalence) in the present study. About 21% of the women had symptoms of RTI/STI (point prevalence). The most common symptom was white discharge (10.3%), followed by lower abdominal pain (6.0%) and genital ulcer (0.3%).

**Conclusion:** Females should be made aware of facilities available at free of cost by government counselling can also improve their ability to recognize the symptoms of STIs and increase the likelihood that they will seek care or encourage a sexual partner to do so.

**Keywords:** Syndromic approach, Reproductive tract infections, Sexually transmitted infections.

## INTRODUCTION

Reproductive tract infections (RTIs) and sexually transmitted infections (STIs) are becoming a major health problem not only in India but all over the world. The poor health of Indian women is a concern on both national and individual level. RTI is a broad term that includes STIs as well as other infections of the reproductive tract or RTIs that are not transmitted through sexual intercourse.<sup>[1]</sup>

Globally, World Health Organization (WHO) 2016 estimates that more than 1 million sexually

transmitted infections (STIs) occur every day. An estimated 376 million cases of the four main curable STIs (Chlamydia, Gonorrhoea, Syphilis and Trichomoniasis) occur each year and 51 million of them in South East Asian Region (SEAR). More than a million women and infants die of the complications of RTIs every year.<sup>[2]</sup> The studies conducted in India also indicate high prevalence of RTIs in women of reproductive age (40–57%).<sup>[3]</sup> As per National Family Health Survey-5 (NFHS-5) prevalence of STI/genital discharge/ sore or ulcer among women of age 15-49 years was found to be 12.3 percent in India

while in Haryana 11.6 percent of females reported the same.<sup>[4]</sup>

RTIs often go undiagnosed and untreated, and if not diagnosed and treated in time, even curable STIs can cause serious complications on the health of women mainly in the form of pelvic inflammatory disease, infertility (in both women and men), ectopic pregnancy, cervical cancer, adverse pregnancy outcomes such as miscarriage, stillbirth, preterm birth, and congenital infections.<sup>[5]</sup> STIs such as Herpes Simplex Virus2 (HSV2) can also increase the risk of HIV acquisition three-fold or more. Syphilis in pregnancy leads to approximately 2,00,000 fetal and neonatal deaths every year worldwide and leaves over 150000 infants at increased risk of dying from prematurity, low birth weight or congenital disease. HPV infection causes 5,70,000 cases of cervical cancer and over 3,00,000 cervical cancer deaths each year.<sup>[2]</sup>

WHO recommends the syndromic approach for identifying and managing cases with RTIs/STIs which provide health workers with a tool to improve the diagnostic process. Hence, in view of the above-mentioned facts, the present study was planned to determine the prevalence and associated factors of RTIs/STIs among married females of a rural block of Haryana.

## MATERIALS AND METHODS

It was a community based cross-sectional study conducted among married females of reproductive age group (15-49 years of age) in the area of

Community Health Centre, Dighal (District Jhajjar), which is the rural field practice area attached to Department of Community Medicine, Pt. B. D. Sharma PGIMS, Rohtak from April 2021 to March 2022. Currently married females (non-pregnant) residing in selected study area for more than 6 months and those who were willing to give written informed consent were included in the study. Pregnant women and those who were seriously ill / severe mental illness were excluded from the study.

Sample size was calculated using the formula:  $N = (Z \cdot 1 - \alpha) \cdot 2PQ / L^2$ , Taking prevalence of RTI/STI as 26.56% in a study by Kumar A et al<sup>6</sup> as reference and L as 20% of Prevalence, the sample size came out 267 however for the purpose of study a total of 300 participants were recruited. Institutional ethical clearance was sought before the initiation of the study. Out of 20 sub-centers in CHC Dighal, 10 were selected by simple random sampling and 30 study subjects were selected randomly from each sub-center. The study subjects were contacted through house-to-house visits by the investigator herself after obtaining informed written consent. A pre-tested pre designed semi- structured schedule was administered to the study subjects using interview technique. The study proforma included information on socio-demographic profile (socio-economic classification as per B.G Prasad's socio-economic scale<sup>7</sup>), relevant obstetric history, menstrual history, usage of contraceptives, symptoms suggestive of RTIs/STIs and their treatment seeking behavior. This study proforma was based on standard guidelines given by NACO<sup>[8]</sup> and was freely available for use.

## RESULTS

**Table 1: Sociodemographic characteristics of the study subjects (n = 300)**

Variables	n (%)
Age (in completed years)	
< 30 years	135 (45)
30-40	115 (38)
>40	50 (17)
Caste	
General	188 (63)
OBC	36 (12)
SC/ST	76 (25)
Occupation	
Home maker	224(75)
Farmer	6(2)
Labourer	18(6)
Job (Govt/Pvt)	51(17)
Husband occupation	
Unemployed	17(5.7)
Farmer	65 (22)
Labourer	59 (20)
Job(pvt/govt)	159 (53)
Age at marriage	
< 18 years	151(50)
>18 years	149(50)
Socioeconomic class	
Upper class	15(5)
Upper middle	51(17)
Middle class	55(18)
Lower class	143(48)
Educational status	
Primary	47(16)

Middle school	28(9)
Intermediate/Diploma	69(23)
Secondary school	110(36)

[Table 1] shows Sociodemographic characteristics of the study subjects Total of 45% of the women were < 30 years. Mean age of study participants was 30.1± 8.9 yr. and range was 19-45 yrs. About 2/3rd i.e., 62.7% study population belonged to general category followed by scheduled category women (25.3%) and backward category (12%). About 3/4th (74.7%) of the women were Homemakers and 17% of the study population was engaged in skilled work More than half (55%) of the women reported that their husbands

were employed in government or private sector 5.7% were unemployed and 8.7% women reported that their husbands were drivers for travel companies, private/government bus services or truck drivers and had to travel and stay outside the house due to their work. About 1/5th (21.7%) was engaged in farming According to age at marriage the mean age at marriage was 17.84 ± 3.1 yrs. and ranged from 15 to 28 yrs. About half 50.3% women got married before 18 years of age.

**Table 2: Distribution on the basis of symptoms of RTI/STI**

Variables	N (%)
Symptoms RTI/STI at the time of study	
Yes	62(21)
No	238(79)
Presenting complaints of the study participants	
Vaginal discharge	41(14)
Vaginal discharge & Lower abdominal pain	17 (5.6)
Lower abdominal pain	20(6)
Genital ulcer	1(0.3)
None	238(79)

[Table 2] shows distribution on the basis of symptoms of RTI/STI. The prevalence suggestive of RTI/STI in past one year was found to be 39.3% (period prevalence) in the present study. About 21% of the women had symptoms of RTI/STI (point

prevalence) while about 79 % women had no symptoms of RTI/STI. The most common symptom was white discharge (14 %), followed by lower abdominal pain (6.0%) and genital ulcer (0.3%).

**Table 3: Factors associated with STI/RTI in study participants.**

Variables	Frequency	Symptoms of RTI/STI present	P value
Age ( years)			
< 30	135	29	0.047*
30-40	115	26	
>40	50	7	
Caste			
General	188	34	0.01*
OBC	36	3	
SC/ST	76	25	
Husband's occupation			
Unemployed	17	1	0.00*
Farmer	65	8	
Labourer	59	20	
Job(pvt/govt)	159	33	
Place of last delivery			
Institutional	186	27	0.00*
Home delivery (by untrained person)	39	17	
Home delivery (by trained person )	75	18	
History of abortion			
Yes	11	8	0.00*
No	289	54	
Material used during Menstruation			
Sanitary pad	232	38	.001*
Unwashed cloth	68	24	
Frequency of bath during menstruation			
Every day	295	59	.008*
Alternate days	5	3	
Symptoms of RTI/STI in spouse			
Yes	18	10	0.00*
No	282	8	

[Table 3] shows the factors associated with STI/RTI in study participants. Symptoms of RTI/STI was found to be highest (24.2%) among the age group of

21 – 25 yrs. The symptoms were higher in <18 yrs. age group (21.9%) than >18 years (19.5%). Among husbands of the study subjects' symptoms of RTI

were maximum in labour class 36.4% followed by those having jobs (20%), those were farmers (12.3%). This association was found to be statistically significant ( $p < 0.05$ ). Symptoms were higher among those who take bath on alternate days and more infrequently (60%) followed by 40% among those who take bath twice a day and 19.3% in women taking bath every day during menstruation

Symptoms of RTI were 16.4% among women using sanitary pad while among those using unwashed cloth it was 34.3%. Symptoms were higher among women who had home delivery by untrained person (43.6%) followed by home delivery by trained person (24%). Lesser proportion of females were symptomatic in institutional delivery.

**Table 4: Determinants of RTI/STI**

Variable	aOR	(95% CI)		p-value	
		Lower	Upper		
Age (years)	15 – 20	Reference			
	21 – 25	.947	.067	13.351	.968
	26 – 30	1.107	.210	5.823	.904
	31 – 35	1.019	.227	4.571	.981
	36 – 40	.608	.121	3.066	.547
Social category	41 – 45	.661	.149	2.927	.586
	General	.814	.739	.96	.002*
	OBC	.786	.714	1.34	.456
Husband's occupation	SC/ST	Reference			
	Unemployed	Reference			
	Farmer	.355	.013	9.523	.537
	Labourer	.634	.133	3.017	.567
	Job(pvt/govt)	.327	.076	1.415	.135
History of abortion in last one year	Shopkeepers	.000	.000	-	1.000
	Yes	Reference			
Place of last delivery	No	.050	.008	.323	.002*
	Institutional	Reference			
	Home delivery (by untrained person)	7.880	2.200	28.219	.001*
Material used during Menstruation	Home delivery (by trained person)	2.858	.976	8.371	.055
	Sanitary pad	Reference			
Frequency of bath during menstruation	Unwashed Cloth	2.082	.764	5.676	.152
	Everyday	Reference			
	Twice a day	.044	.000	.	.998
Symptoms of RTI in the spouse	alternate days or less	.378	.000	.	1.000
	Yes	2.23	1.089	4.547	0.03*
Symptoms of RTI in the spouse	No	Reference			

Omnibus Test  $p=0.00$ , Hosmer & Lemeshow Test  $p=0.426$ , (\*p-value - Statistically significant)

[Table 4] shows odds ratios with 95% confidential intervals in binary logistic regression analysis to identify significant determinants of RTI/STI. After applying binary logistic regression, symptoms of RTI/STI among general category were nearly 20% lesser as compared to SC/ST category ( $p=0.002$ ), symptoms were 50% higher in the women who underwent abortion in last one year compared to those who didn't have abortion in the last year ( $p=0.02$ ), were 7.8 times higher among women who had delivery at home from untrained person in comparison to those who had institutional delivery. ( $p=0.001$ ), symptoms were 2.2 times higher among women who had history of RTI/STI in their spouse in comparison to the women whose spouse didn't have RTI/STI symptoms and it was found to be statistically significant ( $p=0.00$ ).

## DISCUSSION

The prevalence of symptoms suggestive of RTI was highest in the age group of 21-25 yrs (24.2%) in the present study [Table 15] which is a period of maximal sexual and reproductive activity. A study done in

rural area of Udaipur 9 also observed maximum prevalence of RTI in 18-25 yrs. age group (41%). In the present study the symptoms of RTI were almost similar in both skilled and unskilled employed women. Symptoms of RTI/STI were highest among women who were housewives (21.9%), followed by women who had job (18%), women who were Labourer (17%), women involved in farming (16.7%). Similar findings in housewives (41.2%) and working women (42%) was found in a study done in Delhi village by Verma A et al.<sup>[10]</sup> About 4% of the women had experienced abortion in the past one year. The symptoms suggestive of RTI were 72.7% among those who experienced abortion in the last one year while it was 18.3% among women who did not experience any abortion in last one year and it was statistically significant. A study conducted by Chaudhary N,<sup>[11]</sup> also observed lower prevalence of RTI among women who did not have any history of abortion (10.3%). This might be due to use of unclean instruments during abortion. About 16.4% women using sanitary pad had symptoms of RTI while it was 34.3% among women using unwashed cloth. It was found statistically significant ( $p<0.05$ ). Similarly

Balakrishnan S,<sup>[12]</sup> in Tamil Nadu also showed higher prevalence in women using cloth (69.2%) in comparison to sanitary pads (43.8%). The present study observed that there was significantly lower prevalence of RTI (19.3%) among women who took bath every day during menstruation in comparison to those who took bath on alternate days during menstruation (60%). Saluja N et al,<sup>[13]</sup> in rural Haryana also observed lower prevalence of RTI in women with good personal hygiene (36%). In the present study out of 20% symptomatic women, most common symptom was white discharge 50%, followed by lower abdominal pain (19.4%). Over all the prevalence of vaginal discharge was found to be the most common symptom suggestive of RTI in most of the studies, followed by lower abdominal pain and genital skin infections which is in line with the findings in the present study.

**Limitations:** Diagnosis of the cases could not be confirmed by lab diagnosis due to limited resources available. The study was carried out in one block of Haryana, hence the findings may not be generalizable for the entire state or whole nation.

## CONCLUSION

Females should be made aware of facilities available free of cost at government health facilities. Counselling can also improve their ability to recognize the symptoms of STIs and increase the likelihood that they will seek care or encourage a sexual partner to do so. Unfortunately, lack of public awareness, lack of training of health workers, and long-standing, widespread stigma around STIs remain barriers to greater and more effective use of these interventions.

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