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Reproductive tract infection among the women of high-altitude areas of Lahaul and Spiti District of Himachal Pradesh, India

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ABSTRACT

Background: Reproductive tract infection (RTI) is a serious public health problem particularly among the women in reproductive age group. Tribal women particularly living in high altitude cold areas are more vulnerable to these infections as availability of water for domestic purpose is scarce hence affects personal hygiene.

Methods: A door to door survey was conducted by canvassing a pre-designed interview schedule for capturing the reported symptoms of RTI among 494 women in the age group 15-49 years in Lahaul and Spiti district of Himachal Pradesh.

Results: Around 26% of the respondents reported one or the other symptoms of RTI experienced by them during three months preceding the survey. The reported symptoms were mostly related to discharge.

Conclusions: The study is carried out among women of high-altitude tribal areas of Lahaul and Spiti district of Himachal Pradesh, where such data/information is not available. Maintenance of personal hygiene is poor, more than one-fourth women had one or the other symptoms of RTI. Lower economic status and personal hygiene practices are strongly associated with RTI. The findings of the study will draw attention of Scientists, Program managers to address the issues for qualitative improvement of female population of the area. Need to sensitise the masses on the issues of RTI and strengthen its outreach health services in the district.

Keywords: High-altitude areas, Lahaul and Spiti, Reproductive tract infection (RTI), Self-reported symptoms, Tribes of Himachal Pradesh

INTRODUCTION

Reproductive Tract Infections (RTIs) is a broad term that includes sexually transmitted infections (STIs) as well as other infections related to the reproductive tract. Not only in India, but worldwide RTIs/STIs have been recognized as major public and reproductive health challenges. World Health Organization estimates in 2016 that globally, more than 1 million curable sexually

transmitted infections (STIs) occur in each day. Although 376 million new infections of the four curable STIs-(Chlamydia, Gonorrhea, Syphilis and Trichomoniasis) are recorded every year in the world in adult aged 15-49 years.² Every year, around 6% of the adult population in India is infected with sexually transmitted infections and reproductive tract infections.³ In India, between the years 2016-2017, the National AIDS Control Society (NACO) covered 3.993 million episodes of STIs/RTIs.⁴ Various

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studies were conducted in the past to assess the prevalence of RTIs among women in India. The studies show that the prevalence varies from population to population in different parts of the country. The variations were also visible within various sections of the population across age, sex and social groups. Some glimpses of community-based studies have shown that prevalence of these infections range between 39-84% in India.⁵ Similar cross-sectional study undertaken in rural areas of Hassan (Karnataka) in 2016 showed that the prevalence of RTIs/STIs was 32% among married women.⁶ An earlier study conducted on RTI among married women in the age group 16-22 years in Tamil Nadu showed that though 53% women reported to have gynaecologic symptoms and another 28% had endogenous infections, but 15% had STIs.7

RTI/STI has serious consequences on the life of the women in particular. These infections are one of the most important cause of infertility, pregnancy loss, maternal death and HIV/AIDS among women. Apart from the physical health RTIs affects the social, psychological and economic aspect of the life.8 While exploring the literature on the cause of vulnerability of women to RTI, it was observed that in Indian patriarchal set up, inequality between the sexes in terms of their intimate behaviour affects women ability in attaining choice on sexual relationship which frequently put women at risk of sexually transmitted infections (STIs).⁹ persistence of social taboos in society also adds to RTI burden on women health in India.¹⁰ Further it is observed that social, physiological and geographical factors make women more vulnerable than men to infection with STI and reproductive tract infections.

The vulnerability also varies between various social groups and the condition is more pronounced in case of tribal populations of India which are vulnerable from every health aspects because of their educational backwardness, their belief system, cultural practices, poverty and area of their residence in remote difficult terrains coupled with scarce health facilities. Further a study based on health camp on STI particularly among the tribal population of Himachal Pradesh in 2011 reveal that 13.6% women had reported to have suffered from RTI.11 It was found in some studies that RTIs that are not sexually transmitted are more common and has serious and chronic health complications in the life of the tribal women. Further tribal women lack sanitation and unhygienic environment associated with followed traditional treatment practices during menstruation, abortion, home deliveries and management of uterine. Literature mentioned that RTIs of the female genital tract are also widespread and it is closely related to poor personal hygiene. 12 Further poor nourishment, untreated infections, lack of rest and free time, and emotional distress from their family also add to the risk of infection from such morbidities.¹³ Many women particularly among the tribal with an STI/RTI do not realize the seriousness of the problem as they do not feel anything wrong in having it and often ignore these health issues coupled with existence of various social taboos brings about a dismal treatment seeking behaviour for morbidities. Further due to shame and feeling of guilt, they hesitate to discuss their reproductive health problems and continue to live with it and absorb the life shock silently.¹⁴

Lahaul and Spiti district of Himachal Pradesh is having 85% of the population as tribal and is located in a difficult area in Himalayan region and remained cut off from rest of the world for almost six months in a year. The health resources and community-based health information are also scarce in the area. ICMR-NIRTH, Jabalpur, Madhya Pradesh has established its field station at Keylong the district headquarters to identify the high-altitude health issues, do research and find out the mitigation strategy for the area. ¹⁵ The present study was conducted to explore the existence and social dimensions of RTI by conducting a survey to capture the self-reported symptoms of RTI at Lahaul and Spiti district of Himachal Pradesh.

METHODS

This was a cross-sectional study conducted in the selected villages of Keylong and Udaypur blocks of district Lahaul and Spiti of Himachal Pradesh. The study was conducted from the CMR-NIRTH field station established in the Regional Hospital, Keylong, Lahaul and Spiti, Himachal Pradesh. The survey was undertaken during January 2017 to October 2017.

The study area: The topography of the district Lahual and Spiti of Himachal Pradesh is hilly and is situated at an altitude of 10000 feet in the Himalayas and accounts for 24.9% of the state area. The villages are located in difficult terrains and is scattered in large areas. The roads are narrow and in places broken in to stony patches. Snow falls and frequent landslides makes the transportation risky. According to Census 2011 the total population of the district was 31564 and which is lowest in the state. About 81% of the district population is tribal. The population is sporadically distributed at 2 persons per sq. kms. The district remains cut off from rest of the world for nearly six months in a year during November to April when the minimum temperature drops below -10°C.

Sample and sampling

The difficult location of the villages and scarce resources in the ICMR-NIRTH field station, Keylong, restricted to undertake a pilot study based on purposive sampling design to have first-hand information on STI as no literature on community-based study was available. A minimum sample size was determined based on the assumption that 50% women had experienced RTI during last three months. Further, assuming level of significance as 95% and absolute error of 5%, the minimum desired sample was about 400 women in age group 15-49 years. As the total population of district is only 30,000, no

design of effect was considered, however, assuming 15% refusal, the minimum desired sample was escalated to 460 women. Care was taken not to interview more than 30 women per village in the age group 15-49 years. Finally, a sample of 494 women were interviewed from 19 villages located in two administrative blocks (Keylong and Udaypur) of Lahaul and Spiti district of Himachal Pradesh. A pre-designed close ended interview schedule was used for the survey. As the target population was reproductive age group women, female field workers were selected and trained on the survey technique and sensitivity of the issue before they were inducted in the field. Project investigators checked the interview schedules regularly during survey to ensure the correctness of the information recorded for quality control of the data.

Inclusion criteria

The study was conducted among women aged 15 to 49 years. All women (15-49 years) who were available for interview and provided written consent were included in the study. However, in case of more than 30 women (15-49 years) available for interview, only first 30 women were included.

Exclusion criteria

Further, women lesser than 15 years and more than 49 years and those who refused to provide written consent were excluded from the study.

After edited the filled in interview schedules, the data was entered in a format specially designed in MS-Excel-19 and exported to SPSS-2016 for analysis. All respondents

were informed about the objectives of the study and written consents were obtained from all the respondents in accordance to the Helsinki declaration (2000 revision for research on people from vulnerable groups) and ICMR guidelines 2017.

RESULTS

It is observed that most of the respondents were of 35 years or above (43%). The mean age of the respondents was 32.2±9.6 years. Most of them were married (73%). Around 13 percent of them were illiterate and 48% were educated up to high school and above. Half of the respondents were home makers and only 19% worked in government offices. More than 50% of them reported to have no income, while 22% of them earn less than Rs.10,000.00 per month. Overwhelming majority among them (88%) belong to Scheduled tribes. During the survey only two religious' groups - Hindus and Buddhists were reported.

It was recorded during the survey that a good number of women (61%) reported to have suffered from one or the other RTIs at any time preceding the survey and mentioned various symptoms (Table 1). Around 26% of them reported to have suffered from RTI and mentioned having symptoms during three months preceding the survey. The symptoms related to discharge (19%) were commonly reported. Around 11% reported to have green/yellow discharge. The other symptoms reported by them includes itching or irritation around the vagina (14%) and lower abdominal pain (9%). Around 44% of the total respondents reported to have multiple symptoms of RTI at any time in the past and 19% reported to have more than one symptom during the reference period.

Table 1: RTI symptoms ever had or currently having among women (15-49 yeas) in Lahaul and Spiti.

Type of symptoms	Ever had (N=494)		Currently has	Currently has (N=494)	
	Numbers	Percentage	Numbers	Percentage	
Irritation around vagina	219	44.3	68	13.8	
Abnormal pain	186	37.3	92	18.6	
Painful intercourse	41	8.3	16	3.2	
Green/yellow discharge	87	17.6	55	11.1	
Genital sore	33	6.7	10	2.0	
Abdominal pain	110	22.3	45	9.1	
Pain during urination	65	13.2	20	4.0	
Reported any RTI problem	299	60.5	127	25.7	

Adjusted odds ratios (AOR) depicted in table 2 reveals that the symptoms are mostly reported by the young, married and less educated respondents. It was also interesting to note that RTI symptoms are less reported by the home makers compared to those in other occupations. Further it is observed that higher the income compared to low/ no income group, fewer symptoms (AOR 0.09; p=0.05) are reported and the association was found to be significant. Scheduled tribes' women reported more symptoms compared to others. It is found that RTI

symptoms are (AOR 2.08; p=0.05) more reported among the Buddhists compared to Hindus and the association is significant. Hygiene has lot to do with prevalence of RTI. It is observed that women who bath sometime/ weekly reported more symptoms (AOR 1.66; p=0.05) compared to those who bath every day/ alternate day and the association is significant. Similarly, RTI symptoms were more reported (AOR 1.44) among women who change/wash under garments alternately/ sometime compared to those who practices daily. Further it is found

that women who uses homemade pads during menstruation reported symptoms more (AOR 1.62) compared to those who uses sanitary pads. Around 28% of the women who reported suffering from RTI revealed that they availed treatment from Regional Hospital located at Keylong (Table 3). Very few availed services from Primary Health Centres (PHCs)/ Community Health Centres (CHCs) and from chemist shops.

Table 2: Adjusted odds ratios of having RTI symptoms by background characteristics.

Characteristics	RTI symptoms at the time of						
	survey						
	#	%	AOR				
Age							
15-24	101	30.7					
25-34	179	25.1	0.59 (0.25-1.38)				
35+	214	23.8	0.47 (0.20-1.13)				
Marital status							
Unmarried	133	24.8					
Married	361	26	1.90 (0.75-4.71)				
Education							
Illiterate	63	36.5					
Primary	86	23.3	0.59 (0.27-1.28)				
Middle	108	28.7	0.84 (0.37-1.86)				
High school	113	23.9	0.70 (0.31-1.58)				
College/Univ.	124	21	0.86 (0.37-2.02)				
Occupation							
Housewife	245	26.5					
Students	82	28	1.23 (0.35-4.40)				
Govt. Jobs	95	16.8	1.65 (0.70-3.87)				
Others	72	31.9	2.09 (0.91-4.79)				
Av. monthly incom	ie						
Nil	258	30.2					
<10,000	108	31.5	0.67 (0.35-1.30)				
10,000+	128	11.7	0.20 (0.09-0.42)*				
Caste							
Scheduled tribe	435	25.7					
Others	59	25.4	0.80 (0.38-1.68)				
Religion							
Hinduism	223	20.6					
Buddhism	271	29.9	2.08 (1.30-3.32)*				
Bath Habit							
Daily/Alternative	364	22.8					
day							
Sometimes/Weekly	130	33.8	1.66 (1.29-3.32)*				
Change/wash undergarments							
Daily	126	19					
Alternative	368	28	1.44 (0.85-2.57)				
day/Sometimes							
Stuff used during menstruation							
Sanitary pads	74	36.5					
Clothes	420	23.8	1.62 (0.88-2.95)				
Total	494	25.7					
		(127)					

Table 3: Place of treatment for reproductive tract infections among women (15-49 years) in Lahaul and Spiti.

Place of treatment	Numbers	Percentage
Primary Health Centre (PHC)	5	3.9
Community Health Centre (CHC)	6	4.7
Regional Hospital, Keylong	35	27.6
Traditional healers	2	1.6
Pharmacy shops	1	0.8
Others	78	61.4
Total	127	100.0

Around 2% reported consulted traditional healers for the treatment. While majority (61.4%) mentioned other sources of treatment mostly available at lower areas of the state preferably at Kullu and Manali.

DISCUSSION

The study based on self-reported symptoms have its own inherent limitations, but it provides insight into respondents' perception and certain extent the gravity of the problem. ^{17,18} Reviewing the pertinent literature related to RTI among communities, it is evident that its prevalence varies from 14% to 84% in rural part of Îndia. 5,17,19-26 Lahaul and Spiti is predominantly a rural and tribal area with a climate which remain cold and dry throughout the year, followed by scarcity of water for domestic purpose. The condition deteriorates during November to April every year when the temperature drops severely. The unfavourable season adversely influence the human behaviour related to bathing, and cleaning, regular washing of inner garments and other cloths. It is presumed that poor hygienic practices may promote RTI particularly among the women. In the absence of any such data on these infections and limited laboratory facilities in the district Lahual and Spiti, the present study was undertaken using door to door survey recording the symptoms reported by the women to understand the infection and the associated social dimensions.

Misinformation guides the local women's understanding of the infection from RTI. Further stigmatizing unfriendly and unfavourable attitude of the family members and neighbours forced the women to hide their illness and were the hindrance in seeking timely help for prevention and care. Studies conducted by Patel also reveals similar observations.²⁷ The people in general are reluctant either to disclose or talk about RTI mainly because of disgrace and ignorance. Notwithstanding, the study took care and ventured to investigate indirectly the existence of such diseases among the studied population of Lahaul and Spiti, through their exposure, awareness and knowledge about them. While canvassing the sensitive questions on

the said sexually transmitted infection, the respondents were first aided about the various symptoms of RTI and thereafter their knowledge and exposure were noted.

Around two-thirds (61%) of the women reported to have suffered from RTI at any time preceding the survey. Three months preceding the survey was considered as reference period for the current sufferers and around 26% reported to have suffered during this period. The common symptoms reported were abnormal discharge, itching or irritation around vagina and lower abdominal pain. Literature reveals that these are usually reported as RTI symptoms.²⁴ Around 44% of the respondents reported multiple symptoms experienced at any time in the past and another 19% revealed to have these symptoms during the reference period of three months.

The multivariate analysis revealed that RTI symptoms were more reported by women who were young, married, those working outside home and earning poorly. Scheduled tribes' women reported symptoms more compared to those in other social groups.

However, the above indicators are not found to be significant. Interestingly, among the two religious groups as evident in the study area Buddhists reported to have suffer more from RTI compared to Hindus and the association is found to be significant. Personal hygiene is found to be an important determinant for RTI. The multivariate model states that women who bath regularly reported fewer symptoms compared to irregular ones and the association is found to be significant. Further fewer symptoms were reported by women who were careful about cleaning their undergarments regularly.

It is worth mentioning here that due to excessive snow fall particularly during the period November to April getting water for domestic purpose is a concern. The extremely cold climate, difficulty in using the attached toilets/washrooms as the sanitary and water pipeline often gets freezes and scarcity of water prevents the local people in maintaining a good personal hygiene in the area and this may enhance the possibility of RTI. Further the use of homemade cloth pads during menstruation instead of sanitary pads also adds to the infection and is a serious concern. The study points to the fact that, awareness and practices related to personal hygiene by proper and judicious management of water has to be promoted in the area. Heating the undergarments in hot water during washing and drying it in sunlight for long and use of sanitary pads during menstruations needs to be encouraged.

Regarding treatment seeking behaviour for RTI among the current sufferers only one-thirds of them availed some treatment from government health posts located in the area such as Regional Hospital, Keylong, primary health centres and sub centres, while most of them shifted to lower areas of Himachal Pradesh such as Kullu and other areas for treatment. This suggests that treatment facilities

and services at government health posts for RTI at Lahaul and Spiti district needs to be improved. A small section also consulted traditional healers for such ailments. Traditional healers are usually popular in tribal areas and is also observed in the studies on RTI among the Gond tribes of Central India.²⁸⁻³⁰

CONCLUSION

Though the present pilot study based on reported symptoms highlights the gravity of the problem, but certainly it indicates the need for a comprehensive community-based study including laboratory investigation of the suspected cases in the area to understand the exact magnitude of the problem and will guide to execute proper prevention and control measures. The present study also points to the fact that RTI is not considered by the local people as a serious public health problem. Proper need-based sensitization programme is essential to educate the masses about the ill effects and importance of prompt treatment for RTI by mobilizing the village level health workers along with traditional healers and local private health practitioners. Gender specific RTI awareness programme are also required for the young population of the area. There is also a need to strengthen the outreach health services in the area for combating the RTI and other related reproductive health morbidities.

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