Research Paper

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An Epidemiological Study of Reproductive Tract Infection Among the Rural Married Women of Bundelkhand Region of Uttar Pradesh, India

Medical Science

KEYWORDS : Prevalence, reproductive tract infection, Married women

Dr. Diipti Singh — Assistant Professor, Department of Community Medicine and Public Health, Hind Institute of Medical Sciences, Barabanki, UP, India

Dr. VS Nigam — Assistant Professor, Department of Community Medicine and Public health, Hind Institute of Medical Sciences, Barabanki.

ABSTRACT

Objective: To determine the prevalence of RTI among the married women of reproductive age group in the rural area of Bundelkhand region of Uttar Pradesh.

Methods: This was a cross-sectional study design conducted in the rural area of Bundelkhand region. The married women of reproductive age group (15-44) residing in the study area for a period of at least 6 month preceding the study were included in the study. The simple random sampling method was used to select with study subjects.

Results: The overall prevalence of RTI was 44.6% (95%CI=0.39-0.50) being higher among 25-29 years (53.5%). The caste, education of women & husband, socio-economic status, age at marriage and menstrual hygienic practice were significant factors associated with the prevalence of RTI. The higher percentage of vaginal discharge (74.2%) was found.

Conclusion: The education of women and husband as well as age at marinate were the main significant factors in our study. The most of these factors are amenable to change by health education and counseling and this study stresses the need for awareness programs for women with a focus on these factors.

INTRODUCTION

Although prevention and control of RTIs and sexually transmitted infections (STIs), including HIV have been accorded a national priority in India, the fact remains that many men and women suffer from various types of RTIs and STIs. RTIs/STIs present a huge burden of disease, adversely impact reproductive health, and cause suffering for both men and women with consequences more devastating and widespread among women. These infections often go undiagnosed and untreated. Reproductive tracts infections (RTIs) and their complications are among the most important causes of illness and death for women in poor regions of the world[1].

India is witnessing an unprecedented epidemiological and demographic transition owing to the increased chronic disease burden on the one hand and declining mortality and fertility rates on the other. The spread of certain chronic and communicable diseases is posing a public health as well as a developmental challenge for the country. Hence, issues concerning health needs of Indian masses, especially those impinging on women's health have received significant policy and programmatic responses in the recent past through National Population Policy 2000, National Health Policy 2002 and National Rural Health Mission, 2005 in keeping with the paradigm shift under the Government of India's Reproductive and Child Health (RCH) Programme.

The prevalence of self-reported RTI symptoms among Indian women has been found to be 11–18% in nationally representative studies[2, 3] and 40–57% in small-scale studies,[4-6] while the prevalence of laboratory-diagnosed RTIs has ranged from 28% to 38%[6, 7]. Moreover, women aged 15–24 were as likely as those aged 25–39 to report symptoms of RTIs[3].

The present cross-sectional study was conducted to determine the prevalence of RTI among the married women of reproductive age group in the rural area of Bundelkhand region of Uttar Pradesh.

MATERIAL AND METHODS

Study design

This was a cross-sectional study design.

Study site

The selected village of rural field practice area of Department of Community Medicine and Public Health, MLB Medical College, Jhansi, UP.

Study population

Married women of reproductive age group (15-44) residing in the study area for a period of at least 6 month preceding the study were included in the study.

Sample size

The sample size was calculated on the basis of prevalence of RTI/STI being 22.4% (Patnaik et al, 2007) with 80% power and 5% significance level. The required sample size was 267. A total of 303 married women were enrolled in the study. Out of these, 296 had complete information, thus, the results were analysed for 296 married women.

Sampling technique

The simple random sampling was used for the selection of study subjects. A total of 3 villages of the study area were selected on the basis of their proximity to reach the centre. A central location in each village was fixed and the direction to start the interview was randomly decided by spinning the pencil. The direction towards which the pencil point faced was chosen and the first household in that direction was selected and enquired for the availability of any married women of age 15-44 years in the house. If no married women was found in the house, the next household was taken and enquired the same. Every household was covered following left hand principle until desired sample size was achieved from each village.

All the married women of age 15-44 years in these households were included in the study. The women having symptoms suggestive of RTI were counseled and given a referral card to visit the primary health center (PHC) for internal examination and confirmation of the clinical symptoms.

The data was collected on pre-designed and pre-tested questionnaire which consisted of socio-demographic information, menstrual history, hygienic practices, history of previous delivery, signs & symptoms of RTI etc.

The data was analyzed by using EPI INFO Windows version and descriptive statistics has been reported. The results are presented in proportions. The Chi-square test was used for dichotomous variables and Chi-square for trend analysis was applied for categorical variables. The odds ratio (OR) for trends was calculated. The p-value<0.05 was considered significant.

RESULTS

Table-1 presents the distribution of married women and prevalence of RTI in relation to demographic profile. The overall prevalence of RTI was 44.6% (95%CI=0.39-0.50). About one fourth (26%) of the women were between 20-24 years. However, the prevalence of RTI was higher among 25-29 years (53.5%). The prevalence of RTI was about two times higher among the age

groups 25-29 (OR=1.73) and 30-34 (OR=1.70) years than 15-19 years. However, the association between age and prevalence of RTI was statistically not significant (p=0.60). The prevalence of RTI was significantly (p=0.01) lower among OBC (OR=0.52) and general castes (OR=0.56) than SC/ST. The prevalence was almost two times significantly (p=0.004) higher among the women belonging to SES III (OR=1.83), IV (OR=1.97) and V (OR=1.94) than SES I. There was no significant association between type of family and prevalence of RTI. A positive association was observed between education of women (p=0.04) and husband with prevalence of RTI (p=0.002). However, there was no association between occupation of women and husband with the prevalence of RTI (p>0.05). The prevalence of RTI was significantly (p=0.01) lower among those women who get married at ≥18 years (34.6%) than married below 18 years (49.7%).

The prevalence of RTI was higher among those women who had poor (52.9%, OR=1.57) and fair (47.2%, OR=1.25) personal hygienic practice than good (41.6%, OR=1.00), however, this trend statistically not significant (p=0.13). The prevalence was significantly (p=0.04) lower who used sanitary pads (31.3%, OR=0.42) and cloths after washing (43.6%, OR=0.72) compared with using dirty cloths (51.8%, OR=1.00). There was no association (p=0.10) between menstrual cycle and prevalence of RTI (Table-2).

The prevalence was lower who had menarche at age 14+ (42.5%) than 12-13 (46.3%) and <12 (55%) years (Fig.1).

The higher percentage of vaginal discharge (74.2%) was found followed by burning & itching of vulvar region (35.6%), lower abdominal pain (26.5%) and urinary complaints (20.5%). The percentage of other symptoms was less than 5% (Fig.2).

DISCUSSION

In the present study, the prevalence of RTI was 44.6% (95%CI=0.39-0.50). Patel et al. (2006) reported that 28.3% of 2,494 women ages 18 to 45 were medically diagnosed with RTIs[8]. However, it is still higher than the prevalence of RTIs reported in rural areas by DLHS-3, which was 19.6%[2]. Reproductive tract infection is a generic term used to describe three types of infections: sexually transmitted infections (STIs), endogenous vaginal infections, and iatrogenic infections due to medical procedures[9]. In this study, the higher percentage of vaginal discharge (74.2%) was found followed by burning & itching of vulvar region (35.6%), lower abdominal pain (26.5%) and urinary complaints (20.5%), the similar observations were reported other Indian studies[10-12].

We did not find significant association between age of women and prevalence of RTI. However, the prevalence of RTI was higher among 25-29 years (53.5%). A study from Tamil Nadu has reported the significant association between age and prevalence of RTI with a highest prevalence in the age group 18-20 years (57.1%) followed by 36-40 years (48.1%)[14]. The other studies have reported the maximum prevalence in the 25-34 years age group[14,15]. A significant association was observed between caste and prevalence of RTI being higher among OBCs in the present study. However, a significant association was found between SES and prevalence of RTI in this study which was contrary to the study by Mani[13] among the rural women of Tamil Nadu in which no association was shown between SES and prevalence of RTI.

We found significant association between education of women & husband and prevalence of RTI. Similar finding was reported in a study in Luhiana[16]. However, no significant association was observed in this study between occupation of women & husband and prevalence of RTI. Study by Mani[13] had also found similar results among the rural women of Tamil Nadu. In the present study, the age at marriage was the significant factor associated with the prevalence of RTI. In a study, the duration of marriage was the significant factor associated with the prevalence of RTI[13].

The personal hygienic practice was not associated with the prevalence of RTI in the present study. However, the menstrual hygienic practice was significantly associated with the prevalence being higher among those who used the dirty cloths during menstrual period.

The low levels of personal hygiene was found to be associated with RTIs in the studies by Riyami et al. among Omani women, Yang et al. in rural China and Singh et al. in rural Dehradun[17,18,19]. The age at menarche and menstrual cycle were not associated with the prevalence of RTI in this study.

Women in the reproductive age group constitute 22.2% of the population in India[20]. Any morbidity in this group results in a huge burden on the socioeconomic and health status of the community. Thus, the prevention of RTIs/STIs and promotion of reproductive health of women is an issue that warrants high priority in a developing country like India.

One of the limitations of this study was that the study was based on clinical diagnosis and only symptomatic cases have been included. Further, in spite of best motivations from the investigator, the respondents might not have given complete and unbiased information.

CONCLUSION

The education of women and husband as well as age at marinate were the main significant factors in our study. The most of these factors are amenable to change by health education and counseling and this study stresses the need for awareness programs for women with a focus on these factors.

Table-1: Prevalence of RTI in relation to demographic profile

	Study subjects		Subjects with RTI		Odds Ratio
	No.	%	No.	%	
Age in years					
15-19	20	6.8	8	40.0	1.00 (Ref.)
20-24	77	26.0	27	35.1	0.81
25-29	71	24.0	38	53.5	1.73
30-34	47	15.9	25	53.2	1.70
35-39	53	17.9	24	45.3	1.24
40-44	28	9.5	10	35.7	0.83
Chi-square for trend, p-value	0.27, 0.60				
Caste					
SC/ST	133	44.9	71	53.4	1.00 (Ref.)
OBC	145	49.0	54	37.2	0.52
General	18	6.1	7	38.9	0.56
Chi-square for trend, p-value	6.14, 0.01*				
SES					
I	34	11.5	12	35.3	1.00 (Ref.)
II	51	17.2	12	23.5	0.56
III	60	20.3	30	50.0	1.83
IV	114	38.5	59	51.8	1.97
V	37	12.5	19	51.4	1.94
Chi-square for trend, p-value	8.52, 0.004*				
Type of family					
Nuclear	136	45.9	65	47.8	1.00 (Ref.)
Joint	160	54.1	67	41.9	1.27
Chi-square, p-value	1.04, 0.31				
Education of women					
Illiterate	146	49.3	70	47.9	1.00 (Ref.)
Upto junior high school	91	30.7	43	47.3	0.97
Upto intermediate	43	14.5	15	34.9	0.58
Graduate & above	16	5.4	4	25.0	0.36

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Chi-square for trend, p-value	4.02, 0.04*				
Education of husband					
Illiterate	41	13.9	23	56.1	1.00 (Ref.)
Upto junior high school	90	30.4	47	52.2	0.86
Upto intermediate	133	44.9	54	40.6	0.53
Graduate & above	32	10.8	8	25.0	0.26
Chi-square for trend, p-value	9.35, 0.002*				
Occupation of women					
Housewife	263	88.9	119	45.2	1.00 (Ref.)
Labor	23	7.8	9	39.1	0.78
Service	10	3.3	4	40.0	0.81
Chi-square for trend, p-value	0.37, 0.56				
Occupation of husband					
Agriculture	82	27.7	30	36.6	1.00 (Ref.)
Skilled labor	40	13.5	15	37.5	1.04
Unskilled labor	106	35.8	65	61.3	2.75
Business	29	9.8	9	31.0	0.78
Service	20	6.8	6	30.0	0.65
No occupation	17	5.7	6	35.3	0.95
Others	2	0.7	1	50.0	1.73
Chi-square for trend, p-value	0.02, 0.99				
Age (in years) at marriage					
<18	195	65.9	97	49.7	1.00 (Ref.)
≥18	101	34.1	35	34.6	1.87
Chi-square, p-value	6.13, 0.01*				
Total	296	100.0	132	44.6	

***Significant, Ref.- Reference category**

Table-2: Prevalence of RTI in relation to personal & menstrual hygiene and menstrual cycle

	Study subjects		Subjects with RTI		Odds ratio
	No.	%	No.	%	
Personal hygiene					
Good	192	64.9	80	41.6	1.00 (Ref.)
Fair	53	17.9	25	47.2	1.25
Poor	51	17.2	27	52.9	1.57
Chi-square for trend, p-value	2.24, 0.13				
Menstrual hygiene					
Dirty cloths	83	28.0	43	51.8	1.00 (Ref.)
Cloths after washing	181	61.1	79	43.6	0.72
Sanitary pads	32	10.8	10	31.3	0.42
Chi-square for trend, p-value	4.00, 0.04*				
Menstrual cycle					
Regular	220	74.3	92	41.8	1.00 (Ref.)
Irregular	76	25.7	40	52.6	0.65
Chi-square, p-value	2.67, 0.10				

***Significant, Ref.- Reference category**

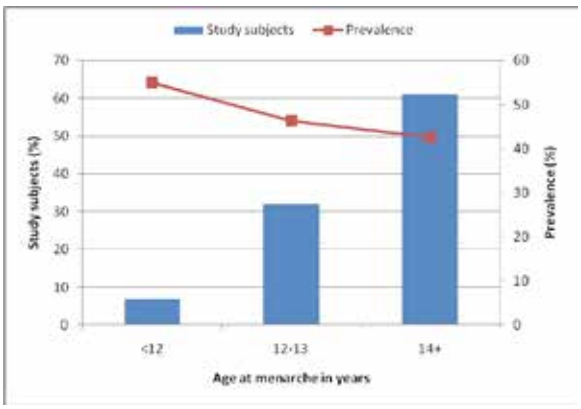

Fig.1: Prevalence of RTI in relation to age at menarche

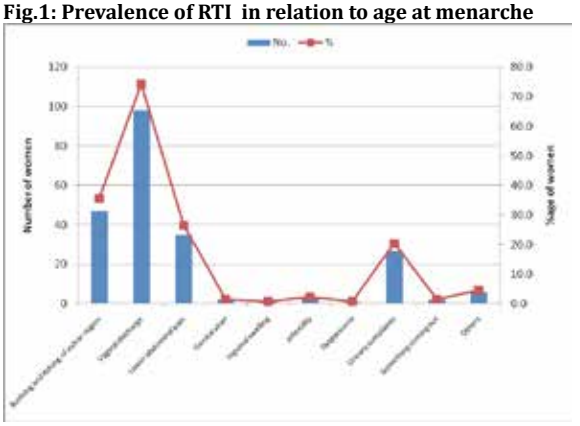

Fig.2: Distribution of women according to symptom of RTI (Multiple response)

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