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Original Research Article

Socio-economic determinants of reproductive tract infections affecting the women (15-49 years): a cross sectional study in a tertiary care hospital of Chhattisgarh

Bhavana Pandey[1]*, Devesh Kumar Shukla[2]

[1]Department of Community Medicine, Chhattisgarh institute of medical Sciences Bilaspur, Chhattisgarh, India
[2]Jhargram District Hospital, West Bengal, India

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***Correspondence:**
Dr. Bhavana Pandey,
E-mail: bhav13687pandey@gmail.com

ABSTRACT

Background: RTIs/STIs are a common public health problem in developing countries, contributing to a huge economic burden among individuals and health systems**.** RTI's excluding HIV constitutes the second major cause of disease burden (after maternity related causes) in women of developing countries. This cross sectional study is carried out with objectives of, to study socio-economic profile of respondents and to determine socio-economic factors of RTI, affecting the women of reproductive age group attending CIMS, Hospital Bilaspur (C.G.).
Methods: A descriptive cross sectional study conducted in a tertiary care hospital CIMS, Bilaspur (Chhattisgarh) from May 2015 to October 2016. Total 450 cases were studied. Predesigned and pretested questionnaire was used to collect information regarding the socio-demographic profile and clinical profile of women's regarding RTI. Statistical analysis was done using SPSS and Chi-square test was applied.
Results: 4.3% (450) patient attending Obstetrics and Gynecology OPD were found to be suffering from RTI. Out of the 450 women, 83.8% of the women had experienced at least one symptom suggestive of RTI previously. Abnormal vaginal discharge was reported by 88.9% followed by lower abdominal pain (78.9%), genital ulcer (34%) and menstrual irregularity 75.8% of women. Symptoms of RTI were higher in old age, illiterate, those with employed, rural residential, Schedule tribe category, poor socio-economic status, separated, divorce and widow and women their husband educated up to primary class.
Conclusions: Generating community awareness, ensuring proper menstrual hygiene, and improving the socioeconomic status would help in reducing the cases of RTI.

Keywords: Reproductive tract infections, Sexually transmitted infections

INTRODUCTION

Women suffer from reproductive morbidities for a long time because of the prevailing 'culture of silence'. Operationally reproductive health care includes prevention and treatment of RTI/STIs, HIV/AIDS, diagnosis and treatment for cervical cancers. World Health Organization's first global strategy on reproductive health was adopted by the 57th World Health Assembly (WHA) in May 2004 which has one of the components as prevention and treatment of sexually transmitted infections including HIV, reproductive tract infections, cervical cancer, and other gynaecological morbidities.[1]

RTIs often cause discomfort and lost economic productivity.[2] The most serious long-term sequelae arise in women: pelvic inflammatory disease (PID), cervical

cancer, infertility, spontaneous abortion and ectopic pregnancy, the latter of which may lead to maternal death.[3] The presence of an STI increases the risk of acquiring and transmitting HIV infection by three to five times,[4] and bacterial vaginosis may be a cofactor for HIV transmission, especially among younger women.[5] Treatment of these infections and prevention of their sequelae are complicated by the fact that 30–50% of women with infections (up to 70–75% in the case of chlamydia), and a smaller but significant proportion of men, are asymptomatic.[6]

Gender influences the control men and women have over the determinants of their health, including their economic position and social status, access to resources and treatment in society.[7] There are no studies describing the association of gender disadvantage with RTIs from India.

Prevalence of STIs are significantly higher among women than men in developing countries.[8] Apart from biological factors, the limited ability of women in developing countries to negotiate sexual relationships is considered a major factor, thus the rising rates of STIs and the ''feminization'' of the HIV/AIDS epidemic is linked with gender disadvantage. [9-11]

Globally about 340 million new cases of sexually transmitted bacterial infections occur annually with 151 million of them in South and Southeast region. As Most of these are treatable but many remain untreated because of the difficulty in diagnosis and the lack of competent and affordable services.[12]

There is growing recognition that women from poorer sections of the community carry a heavy burden of reproductive morbidity and are at high risk of infection. Male supremacy in Indian society, along with the restrictive social structure, limits women's independence leading to strong male control over female sexuality. The invisibility and taboos surrounding RTIs and the belief that they should be endured create a culture of silence within families and communities that can severely compromise women's health.[13]

This study was undertaken with the following objectives as to study socio-economic profile of respondents and to determine socio-economic factors of reproductive tract infection affecting the women of reproductive age group attending CIMS, Hospital Bilaspur (C.G.).

METHODS

A descriptive cross sectional study conducted in a tertiary care hospital CIMS, Bilaspur (Chhattisgarh) from May 2015 to October 2016. Total 450 cases were studied. Each of them will be included in this study only after her obtaining informed consent. Detailed history will be taken from each women (15-49 years) having symptoms of reproductive tract infection attending Obstetrics and Gynaecology OPD of CIMS hospital between 9 am to 2 pm during the study period. The centre was visited everyday excluding Sunday and holidays with special reference to magnitude of the symptoms, duration and spread of symptoms, awareness and treatment seeking behaviour etc. Most of the variables in case record form taken from district level household and facility survey (DLHS -3, 2007-08) standard interview format. Interview question were designed and tested in the study area, on the basis of finding questionnaire suitably modified. After collection of information regarding study subjects compilation of data was done in MS Office Excel Spread sheet and statistical analysis was done with help of statistical software SPSS for Windows 11.5 version. The Chi-square test was used for testing statistical significance of association of variables. The level of significance was taken at $p<0.05$.

RESULTS

Table 1 shows that during study period, 10287 patient attended Obstetrics and Gynecology OPD of CIMS hospital. Out of these 450 were affected by reproductive tract infection. Thus 4.3% patient attending Obstetrics and Gynecology OPD were found to be suffering from RTI (Table 1).

Table 1: RTI cases among patients attending Obstetrics and Gynaecology OPD.

RTI Symptoms	Total (10,287)	
	No.	Percentage (%)
Yes	450	4.3
No	9837	95.7
Total	10287	100

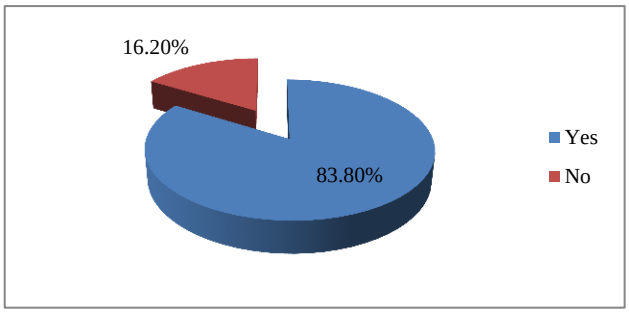

Figure 1: History of RTI in women of reproductive age group previously (women suffering from RTIs before coming hospital from last one year).

Figure 1 show that out of 450,377 (83.8%) women already experienced at least one symptom suggestive of reproductive tract infections previously (Figure1).

Table 2 reveals that among symptomatic women abnormal vaginal discharge (88.9%) was the commonest symptom reported by women of reproductive age group followed by more than two third of women suffered lower abdominal pain (78.9%), abnormal skin condition (68.9%), another 34% of women experienced genital

ulcer. It is also noticed that more than one third of women suffered from multiple symptoms (42.2%) (Table 2).

Table 2: Various symptoms suggestive of reproductive tract infections.

	Total (n=450)	
	No.	%
RTI (symptoms)		
Abnormal vaginal discharge	400	88.9
Lower abdominal pain	355	78.9
Abnormal skin condition	310	68.9
Genital ulcer	153	34
Other associated symptoms		
Low grade fever	357	79.3
Menstrual problems	341	75.8
Burning micturition	339	75.3
Weight loss	299	66.4

*Multiple choice responses.

Table 3 shows that the magnitude of the symptoms of reproductive tract infection in women aged 41-49 yrs was 94.9% followed by 91.2% and 88.1% in 36-40 yrs and 31-35 yrs age group respectively. It is highest in the older age group and decreases as age decreases and this difference was found to be statistically significant ($p<0.01$). The magnitude of symptoms suggestive of RTI was highest among the women who had illiterate (93.5%) followed by up to primary school educated women's (91.2), decreases as education level increases and this difference was found to be statistically significant ($p < 0.01$). All the occupations were categorized in to employed and unemployed. It was found that the magnitude of symptoms were highest seen in employed women (88.7%) than unemployed women (80.3%), concluding that there is significant association found between occupation and magnitude of symptoms of RTI ($p<0.05$). The magnitude of RTI was highest among the women of rural area (84.6%) as compare to women of urban area (81.9%) however this difference was not statistically significant ($p>0.05$). The symptoms suggestive of RTI was highest seen among women of schedule tribe (88.9%) followed by schedule caste category (84.1%) and 75% seen in general category. This difference was not significant ($p>0.05$). The symptoms of RTI was highest seen among women of poor and lower middle class were 90.6% and 90.1% respectively, decreases as socio-economic status of study population increases and this difference was found to be statistically significant ($p<0.01$). The symptoms of RTI were compared between currently married, unmarried and all separated, divorced, widows together. The magnitude was found to be 100% among separated, divorced, widows because only 16 women in these group followed by 85.5% seen in currently married women and 70.6% seen in unmarried women and this difference was found to be statistically significant ($p<0.01$). Out of the 366 currently married women, 93.3% women reported that their husbands was illiterate having a RTIs symptoms followed by 91.9% of women's their husband educated up to primary class having a RTIs symptoms. Thus association was statistically significant ($p<0.05$). The magnitude of RTI symptoms was higher (89%) among women using only sanitary pad (89%) than those using washed cloth (85.1%) and both sanitary pad and washed cloth (73.6%) and this association was found significant ($p<0.01$) (Table 3).

Table 3: Socio-economic factors affecting reproductive tract infection.

Socio-economic profile of women		Reproductive tract infections		Significance level
		Yes	No	
Age	15 yrs-20 yrs	19 (63.3)	11 (36.7)	p=0.002 ($p<0.01$)
	21 yrs-25 yrs	75 (81.5)	17 (18.5)	
	26 yrs-30 yrs	123 (80.4)	30 (19.6)	
	31 yrs-35 yrs	52 (88.1)	7 (11.9)	
	36 yrs-40 yrs	52 (91.2)	5 (8.8)	
	41 yrs-49 yrs	56 (94.9)	3 (5.1)	
	Total	377 (83.8)	73 (16.2)	
Education	Illiterate	58 (93.5)	4 (6.5)	p=0.00 ($p<0.01$)
	Primary school	114 (91.2)	11 (8.8)	
	Middle School	74 (89.2)	9 (10.8)	
	H.S.S.C	56 (70)	24 (30)	
	Intermediate	65 (76.5)	20 (23.5)	
	Grad/Post Grad.	10 (66.7)	5 (33.3)	
	Total	377 (83.8)	73 (16.2)	
Occupation	Unemployed	212 (80.3)	52 (19.7)	p=0.017 ($p<0.05$)
	Employed	165 (88.7)	21 (11.3)	
	Total	377 (83.8)	73 (16.2)	
Residence	Rural	259 (84.6)	47 (15.4)	p=0.469
	Urban	118 (81.9)	26 (18.1)	
	Total	377 (83.8)	73 (16.2)	

Continued.

Socio-economic profile of women		Reproductive tract infections		Significance level
		Yes	No	
Category	General	33 (75)	11 (25)	p=0.173
	OBC	74 (81.3)	17 (18.7)	
	SC	174 (84.1)	33 (15.9)	
	ST	96 (88.9)	12 (11.1)	
	Total	377 (83.8)	73 (16.2)	
Socio-economic class (Modified BG Prasad's Scale 2014)	Upper high & high	33 (67.4)	16 (32.6)	p=0.00 (p<0.01)
	Upper middle	63 (70)	27 (30)	
	Lower middle	127 (90)	14 (9.9)	
	Poor	154 (90.6)	16 (9.4)	
	Total	377 (83.8)	73 (16.2)	
Marital status	Currently married	313 (85.5)	53 (14.5)	p=0.002 (p<0.01)
	Unmarried	48 (70.6)	20 (29.4)	
	Separated, divorced, widow	16 (100)	0	
	Total	377 (83.8)	73 (16.2)	
Education of husband	Illiterate	28 (93.3)	2 (6.7)	p=0.046 (p<0.05)
	Primary school	68 (91.9)	6 (8.1)	
	Middle school	74 (86)	12 (14)	
	H.S.S.C	58 (86.6)	9 (13.4)	
	Intermediate school	45 (76.3)	14 (23.7)	
	Grad/Post Grad.	40 (80)	10 (20)	
	Total	313 (85.5)	53 (14.5)	
Material used during menses	Sanitary pad	105 (89)	13 (11.1)	p=0.003 (p<0.01)
	Washed cloth	131 (85.1)	23 (14.9)	
	both	95 (73.6)	34 (26.4)	
	Total	331 (82.6)	70 (17.4)	

DISCUSSION

Among patient visiting Obstetrics and Gynaecology OPD of CIMS hospital, it was found that 4.3% suffered from at least one symptom suggestive of RTI (out of 10,287 women 450 women having symptom of RTIs) and out of 450 women 83.8% already having symptoms of reproductive tract infection previously. Among symptomatic women abnormal vaginal discharge (88.9%) was the commonest symptoms followed by more than two third of women were suffered lower abdominal pain (78.9%), abnormal skin condition (68.9%), another 34% of women experienced genital ulcer, other associated symptoms was low grade fever (79.3%), menstrual problems (75.8%), burning micturition (75.3%), weight loss (66.4%) and multiple response was reported by 42.2% of women.

Similar study conducted by Ratnaprabha in Bangalore city, Karnataka where prevalence of symptom suggestive of RTIs in last 1 year was found to be 29.15% and the prevalence of only current symptoms (point prevalence) of RTI was 13.4% of all the women 15–49 yrs age group.[14] Another study conducted by Hegde in a slum of Bangalore city in the year 2008 showed higher prevalence than the present study, the prevalence of current symptoms was found to be 26.8% while that in the past one year was 39.1%.[15]

RTI was highest in 41-49 yrs age group (94.9%) in last 1 year. The probable reason for that could be wrong perception of the physiological vaginal discharge as pathological by women, since the most common symptom presented was abnormal vaginal discharge. Similar finding was obtained in Patel, Weiss study done in Goa city hospital, where was RTI most commonly seen in more than 40 years age group.[16]

In the present study most of the women had literate (86.2%) and only 13.8% of the women were illiterate. Magnitude of symptoms of RTI was highest seen among the women who illiterate (93.5%) followed by up to primary school educated women's (91.2) decreases as education level increases. Most of the studies show highest prevalence of symptoms of RTI was among illiterate women and it decreases with increase in education, (infertility clinic in Delhi, Goa).[17,18] Similar study done in Kolkata slum shows that 42% was illiterate and 60% of them had completed only primary education.[19] Most of the women (40.2%) in Hegde study had completed only primary education.[20]

58.7% of the women in the present study were not employed which also include students, the magnitude of symptoms of RTI was high in working women (88.7%). Similar study done in rural areas of Himachal Pradesh, 61.5% of the women were involved in agricultural activities, labor activities and they had the highest

prevalence of symptoms (69.1%).[20] Ratnaprabha in Bangalore found that the prevalence of symptoms were almost same in both the groups (29.3%).[14]

More than two-third (68%) of women were residing in rural area. The magnitude of symptoms of RTI was highest seen among the women of rural area (84.6%) as compare to women of urban area. Similar finding seen in DLHS-III (2007-08), in rural residential women having 13.7% abnormal vaginal discharge and 19.1% other RTIs was high as compare to urban residential women (abnormal vaginal discharge-10.6%, other symptoms-14.6%).[21] Out of the 450 women 46% belonged to Schedule caste followed by Schedule tribe (24%) category and the symptoms of RTI was highest seen among women of schedule tribe (88.9%) followed by schedule caste category (84.1%). Similar finding seen in Bhawsar study were prevalence of RTI symptoms most commonly seen in SC and ST category (29%).[22] Another study done in DLHS-III (2007-08), where abnormal vaginal discharge was most commonly seen in SC (13%) as compare to other category (ST-9.7%) and these finding was contrary to this finding.[21]

Most of the women (37.8%) in the present study belonged to poor socio-economic status and magnitude of symptoms of RTI was highest among poor (90.6%) and lower middle SES (90.1%) compared to other groups as per modified BG Prasad's classification (2014). Only 10.2% of the women belonged to high SES. Similar study done in Kolkata slum shows 41% of the currently married women having per capita income Rs. 250 to 499 per month and only 14.3% of the women had per capita income ≥Rs. 1000 per month.[19]

81.3% of women's were currently married and all 16 women's (widows/divorced/separated women) having symptoms of RTI/STI, because only 16 women in this group and all having symptoms of RTI. Again this could be because of the wrong perception of the physiological vaginal discharge as pathological or could be due to less hesitation in reporting symptoms of RTI by former group unlike married women and girls. Similar finding was obtained in Patel, Weiss study done in Goa city hospital where RTIs most commonly seen in separated, divorced and widow women.[16]

Out of the 366 husband, 8.2% were illiterate and most of husbands educated up to middle class (23.5%). 93.3% women reported that their husbands was illiterate having a RTIs symptoms, followed by women's their husband educated up to primary class having a RTIs symptoms. Similar finding seen in DLHS III (2007-08), where vaginal discharge was most commonly seen in women's their spouse non literate (14.1%) (Other symptoms was 18.2%) that was higher as compare to seen in highly educated spouse.[21]

Out of irregular menstrual cycles, 85% of women having RTIs symptom and out of women having regular menses, 66.7% having a RTIs symptoms. 26.2% of the women were using sanitary pad and the magnitude of symptom of RTIs was higher in women using sanitary pad (89%). Most of the studies have shown less prevalence of RTI among women using sanitary pad.[23,24] A study done in a slum in the vicinity of Moulana Azad Medical College Delhi showed that there was higher prevalence of morbidities in women using unclean soaking material during menstruation.[25]

Present study revealed that highly significant association was found between the various socioeconomic factors like age, education, socio-economic status, marital status, material used during menstruation, and reproductive tract infections ($p<0.01$). Significant association was found between occupation of women, education of husband and reproductive tract infections ($p <0.05$).

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