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ORIGINAL ARTICLE

CONTRIBUTION OF SOCIOECONOMIC FACTORS TO REPRODUCTIVE TRACT INFECTIONS AND INFERTILITY IN RURAL INDIA

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ABSTRACT: OBJECTIVE: This study was designed to find out how socioeconomic, cultural, educational and religious factors play a role in causation of RTI/STD. **STUDY DESIGN:** This study was conducted at Gynae, OPD of Dist. Hospital Samba, Jammu, J&K. 200 patients coming for infertility checkup and treatment between Feb. 2013 to Jan. 2014 were included in the study. It was an observational cross - sectional study. A pretested, semi- structured questionnaire was administered which included information about demographic, socioeconomic profile, menstrual and sexual practices, obstetrics treatment and family history. Complaints suggestive of RTI/STI were noted. **RESULTS:** Maximum incidence of RTI/STI was observed in the age group 25 – 30 years. RTI/STI was more in illiterate patients (64) as compared to literate patients (53 %). A negative correlation between income and prevalence of RTI was found. Prevalence of RTI was slightly more in patients from joint families (67%) as compared to women from nuclear families (33%). Similarly people living in Kutcha houses showed more prevalence of RTI (66%) as compared to pucca houses (48%). Correlation between RTI and housing was not significant ($p > 0.005$). Tap water supplied residents showed less prevalence of RTI 50% as compared to hand pump using residents 65%, however, correlation was not statistically significant ($p > 0.05$). The incidence of RTI was 54% in daily bathers and among irregular bathers, the incidence was 66%. The prevalence of RTI was 54%in regular wearers of underwear whereas in irregular wearers the prevalence was 75%. Genital hygiene correlation, the prevalence of RTI in pad users was 42.8% whereas the prevalence in non – pad users was 61%. There was statistically significant correlation between the use of rag during menses and the prevalence of RTI. RTI was more prevalent (64.8%) in women sharing toilets with others while same was 45.6% in women among having separate toilet facilities. **CONCLUSION:** RTI/STI is increasing worldwide. HIV and RTI/STI share the same mode of transmission and the persons suffering from STI/RTI practice the risk behavior which increases the probability of acquiring HIV. There is great need to develop strategies for awareness generation and management of these diseases.

KEYWORDS: RTI, STI.

INTRODUCTION: RTI are increasingly recognized as serious health problems around world.(1) RTI can occur in lower reproductive tract(Vagina / Cervix) or can ascend to the upper reproductive tract(Fallopian tubes / Uterus). Untreated reproductive tract infection can lead to upper tract infection causing PID, Ectopic pregnancy, infertility, fetal loss, cervical cancer and health problems of newborn. Over 50% infection in women occurs with no symptoms preventing them to seek medical care and making diagnosis difficult.(2) RTI is of two types depending upon the mode of spread i.e. sexually transmitted infections(STIs) and non- sexually transmitted infections(Non- STIs). Each year there are over 340 million new cases of sexually transmitted infections of which 75 – 85% occur in developing countries. Sexually transmitted infections are common in developing countries. The WHO

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estimates that in 1999, 340 million new cases of syphilis, gonorrhoea, chlamydial infection and Trichomonas occurred. HIV infection is also common in developing countries. UNAIDS estimates that over 90% of the 40 million people infected with HIV by Dec. 1999 live in developing countries (UNAIDS 2003).[3] Sexually transmitted RTI/STI continue to be major public health problem in India, 40 million new cases occur each year.[4] RTI/STI have been found to facilitate transmission of HIV infection.[5] Prevention and control of RTI/STI will not only lead to its own control but will contribute to the prevention of HIV transmission. Young people (10 -24 Years) constituting one-third of the world's population are at greater risk and 80% of them live in developing countries. Epidemiological studies across the developing world show that they are vulnerable to RTI/STI's including HIV (UNFPA 1998). Gender, socio-economic status, sexuality and age are important factors structuring such vulnerability. Relationship between RTI, STI and HIV infection is three fold. Firstly STI & HIV infection are associated with similar risk behavior that is unprotected sexual intercourse with multiple partners. Secondly the presence of STI has been found to facilitate the acquisition and transmission of HIV infection. A tenfold increased risk of HIV transmission has been associated with infections that cause genital ulcers such as Syphilis, Chancroid and Herpes. The risk associated with diseases causing discharges (Gonorrhea, chlamydiae infection, trichomonas infection and bacterial infections) is four fold. Thirdly there is mounting evidence that some RTI pathogens are more virulent in the presence of HIV related immune deficiency.

RTI are caused by various organisms. Though RTI can occur in both sexes, they are more common in females because of their anatomic structure, socioeconomic status and illiteracy. Changing sociocultural milieu, rapid urbanization and rural urban migration means that greater numbers of people are living in precarious and improvised conditions making them vulnerable to STIs. Therefore in view of increasing magnitude of RTI worldwide, HIV epidemic and complex interaction of RTI with social, cultural, religious and economic factors, this study was undertaken to find out correlation of socioeconomic status and poor genital hygiene with RTI/STI in patients attending infertility clinic.

AIMS AND OBJECTIVES: The magnitude of RTI is increasing worldwide. Studies are needed to find out how socioeconomic, cultural, educational and religious factors play a role in the causation of RTI/STD. In the light of these observations a study was designed to know the co-relation between socioeconomic status and poor genital hygiene with RTI/STD in patients attending Gynae OPD with infertility at District Hospital Samba, Jammu; Jammu & Kashmir between Feb. 2013 to Jan. 2014.

MATERIALS AND METHODS: This study was conducted at Gynae OPD of District Hospital Samba, Jammu; Jammu & Kashmir. 200 patients coming for infertility checkup and treatment between Feb. 2013 to Jan. 2014 were included in the study. It was an observational cross - sectional study. A pretested, semi- structured questionnaire was administered which included information about demographic, socioeconomic profile, menstrual and sexual practices, obstetrics treatment and family history. Complaints suggestive of RTI/STI were noted. All patients underwent complete systemic and gynaecological examination including per speculum and per vaginal examination. In all patients who were found to be having infection; Gram staining, wet mount and culture and sensitivity test of vaginal discharge or cervical mucus was done. Serum VDRL test was done for both partners and routine urine examination was performed in all patients.

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The complete questionnaires were then analyzed through appropriate statistical methods.

RESULTS: Out of total 200 patients, RTI/ STI were diagnosed in 112 patients on clinical and lab investigations. The number of people who were illiterate was 50 and RTI was observed in 32 of them (64 %). No. Of people who were literate were 150 and RTI was diagnosed in 80(53.3%). Although correlation was statistically not significant.

The age of women and prevalence of RTI was as below

Age of women	Total No.	RTI	Percentage
20-24	64	30	46.8%
25-29	86	56	65.1%
30-34	34	18	52.9%
35 & Above	16	18	50%

Table 1

Maximum incidence of RTI/STI was present in 25-29 age groups.

Patients were divided into income groups and income size distribution as patients having annual income less than Rs. 40,000 as low income group, income between 40,001 – 80,000 as low middle group, income between 80,001 – 1,20,000 as middle group, income between 1,20,001 – 1,60,000 as upper middle group and income above Rs. 1,60,000 as high group.

Income size	Mean income	Total patients	RTI cases	%age
Less than 40,000	20,000	48	43	70%
40,001 – 80,000	50,000	88	52	59%
80,001 – 1,20,000	95,000	34	16	47%
1,20,001 – 1,60,000	1,40,000	22	08	36%
1,60,000	2,50,000	08	02	25%

Table 2 : Income wise breakup of RTI cases

A negative correlation between income and prevalence of RTI was found ($p = 0.008$) which shows there is a significant correlation between income status and prevalence of RTI

Prevalence of RTI was slightly more in patients from joint families 67% (134), while 33% (66) of women with RTI were from nuclear families. Similarly people living in Kutcha houses showed more prevalence of RTI 66% (56/84) as compared to pucca houses 48% (56/116). Correlation between RTI and housing was not significant ($p > 0.005$). Tap water supplied residents showed less prevalence of RTI 50% (60/120) as compared to hand pump using residents 65% (52/80), however, correlation was not statistically significant ($p > 0.05$). Correlation with general and genital hygiene, those taking daily bath, the incidence of RTI was 54% (100/182) in daily bathers and among irregular bathers the incidence was 66% (12/18), again this correlation was not statistically significant. Regarding correlation with practice of wearing underwear, the prevalence of RTI was 54% (100/184) in regular wearers whereas in irregular wearers the prevalence was 75% (12/16). Genital hygiene correlation, the prevalence of RTI in pad users was 42.8% (24/56) whereas the prevalence in non – pad users was 61% (88/144). There was statistically significant correlation

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between the use of rag during menses and the prevalence of RTI. RTI was more prevalent (64.8%) in women sharing toilets with others while same was 45.6% in women among having separate toilet facilities.

All most all participants denied history of multiple sexual partners. Symptoms with which most women presented were vaginal discharge (22%), pain abdomen (13 %), and dyspareunia (3%), burning micturition (3%) and backache (3%)

RTI/STI on clinical examination was diagnosed among 55%, of whom 25% were asymptomatic. Candida infection was found to be 18%, Trichomonas infection in 13%, bacterial vaginosis in 23% and Gonorrheal infection in 1%. Total prevalence of RTI/STI after laboratory diagnosis was 56%.

Patients were treated with specific antibiotics wherever required. After completion of treatment for RTI/STI, patients conceived successfully within three months

DISCUSSION: RTI/STI pose a great public health problem as they are stigmatizing diseases kept hidden from family members and treatment sought only when the disease has progressed to an extent when it becomes unbearable. The treatment is also not taken from a qualified medical practitioner initially but from quacks. Proper treatment is availed when the disease does not regress. This phenomenon is aggregative, as majority of the STDs are asymptomatic, leaving behind sequelae. Even if asymptomatic, the patients tend to hide till forced to consult some practitioner to get relief. Context of RTI/STs become important in the light of the fact that HIV is very intimately associated with these diseases. The risk behaviour in the form of sex with multiple – partner and sexual transmission of the disease from spouse to spouse even when there is high risk behaviour of women –makes it imperative to gain insight into the various aspects of RTI/STDs in relation to women. The effective control has direct effect on the incidence and prevalence of HIV infection which saves the lives of many women and children.

The present study was carried out to find out the economic correlation of RTI/STI in patients coming to attend infertility clinic. Maximum incidence of RTI/STI was observed in the age group 25 – 30 years which in itself is explainable on the ground that this age group is the sexually most active group. The cases comprised 65.1% of the total RTI/STI diagnosed in the study. This was in accordance with study by Balamurugan et al.[6] but differs from the study by Rathore et al. Where in the mean age of women with RTI was 33.59 years.[7]

There was an increased incidence of RTI/STI in illiterate patients (64%) as compared to literate patients (53%). Although higher no. of illiterate patients (64%) were suffering from RTI/STI as compared to literate (53%), p value was not statistically significant. This difference was due to awareness regarding their health in literate patients to fight against RTIs and protect themselves from RTIs. Illiterate women do not really know what is good or bad for their own bodies. Even when some change happens in their bodies, they could not tell whether it is normal or abnormal. It is difficult for illiterate women to adopt new but hygienic living habits which are useful for RTI prevention. This is again in accordance with study by Rathore et al.[7] where RTI was more common in illiterate women.

Similarly women living in the kutcha houses and sharing common toilets have higher prevalence of RTIs as the chances of cross infection are high. Prevalence of RTI was higher for women

living in joint family and using common toilet although p value was < 0.05 and the correlation was statistically not significant.[8]

Even economic factors do make a difference in prevalence of RTIs. Prevalence was found to be more in women of low and middle economic status as compared to upper middle and high. And this correlation was statistically significant with p value < 0.05. Lack of money or poverty makes women neglect their symptoms and delay treatment of their diseases which consequently become worse and lead to serious complications. Our study also showed that women from low economic status have more chances to have RTI. This was also in accordance with the study by Maitra et al. where RTI was more common in low socioeconomic group.[8]

Another important factor was general hygiene.[8] Which has shown its significance in causation of RTI. While it was 54% in women taking regular bath as compared to 66% among women taking irregular bath i.e. bath on alternate or every 3rd day. Although this correlation was not statistically significant with p value > 0.05. Luthra et al.[9] have also underlined in their study of Indian situation that the presence of infection is significantly associated with substandard hygiene, low socioeconomic status and husband's occupation. Another factor which showed the importance of genital hygiene was wearing of underwear and regular change. It was found that women who regularly change their underwear have less prevalence of RTI (54%) as compared to women who do not wear or irregularly change (75%).

Another factor which showed its importance was menstrual hygiene which in turn itself reduces the risk of acquiring RTI. The unhygienic method of menstruation management accounts for a fairly large number of reproductive tract infections in India and unhygienic toilet habits adds to this problem. The prevalence of RTI among women using sanitary pads was 42.8% as compared to women using rags or other unclean methods (61%) as means of menstrual management, there, correlation was found to be statistically significant with p value < 0.05.[10,11] Only a small percentage of Indian women use sanitary napkins. Many still do not even know about the protection offered by sanitary napkins even though in the recent past they are being advertised widely on television and media. The price of napkins also forbids its use for weaker economic status women. It can be further mentioned that use of tampons is negligible in India and hence rare are the infections caused by their use.

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