ORIGINAL ARTICLE

Determinants of Reproductive Tract Infection among married women in rural and peri-urban areas of Aligarh: A cross sectional Study

Shivangi Kumari[1], Saira Mehnaz[2], Mohammad Athar Ansari[3], Ali Jafar Abedi[4]

[1]Senior Resident, Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh; [2]Professor, Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh; [3]Professor, Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh; [4]Assistant Professor, Department of Community Medicine , Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh

Corresponding Author

Dr Shivangi Kumari, Senior Resident, Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh - 202002
E Mail ID: shivek1402@gmail.com

Abstract

Background: Reproductive Tract Infections (RTI) have a direct impact on reproductive and child health through infertility, cancers, and pregnancy complications, and they have an indirect impact through their role in facilitating the sexual transmission of the human immunodeficiency virus. **Objectives**: To find the prevalence and determinants of RTI/STI among married women of reproductive age group in rural and peri-urban areas of Aligarh. **Methods**: The data were collected by using a pretested, semi-structured with both open and closed-ended questionnaire from 500 married women of reproductive age group. The collected data were analyzed using IBM SPSS 20.0 Proportion, frequencies, $\chi2$, and logistic regression were used to interpret the data. **Results**: Prevalence of RTI/STI symptoms was found to (42.8%) in rural areas and 37.6 % in peri-urban areas. Strong association was found in study subjects having lower educational status, who were not using any contraceptive method, not following good menstrual hygiene, early marriage age had husband history of RTI/STI, had a history of abortion, had a history of violence, and increased parity. **Conclusions**: Prevalence of symptoms found to be associated with these females having low educational status, early age of marriage, high parity, partner history of reproductive Tract Infections, history of violence etc. So, there should be more focus on improvement in these factors to reduce the prevalence.

Introduction

The earliest reference to sexual health was in the International Conference on Population and Development (ICPD) Programme for Action (Cairo, 1994), which stated that reproductive health, "also includes sexual health, the purpose of which is the enhancement of life and personal relations, and not merely counseling and care related to reproduction and sexually transmitted diseases." (1) At the International Conference on Population and Development, diverse views on human rights, population, sexual and reproductive health, gender equality, and sustainable development merged into a remarkable global consensus that placed individual dignity and human rights, including the right to plan one's family, at the very heart of development(2).

It is now accepted that women's health status has an important impact on the health of their children, the family, the community, and the environment. And yet, despite these assertions, and despite the rapid technological advances that have been made in several fields, many women still suffer from preventable morbidity and mortality(3). STIs/RTIs have a direct impact on reproductive and child health through infertility,

cancers, and pregnancy complications, and they have an indirect impact through their role in facilitating the sexual transmission of the human immunodeficiency virus (4). Some of the sociocultural factors that prevent women and girls to benefit from quality health services and attaining the best possible level of health include, unequal power relationships between men and women; social norms that decrease education and paid employment opportunities; an exclusive focus on women's reproductive roles; and potential or actual experience of physical, sexual, and emotional violence.(5)

Aims & Objectives

1. To find the prevalence of RTI/STI among married women of reproductive age group in rural and peri-urban areas of Aligarh.
2. To find the determinants of RTI/STI among married women of reproductive age group in rural and peri-urban areas of Aligarh.

Material & Methods

Study design: The study was a community based cross-sectional study.

Study population: Total 500 married women were interviewed (250 both from rural and peri-urban area each).

Inclusion criteria:
1) All the married women in reproductive age group (15-45) residing in the registered areas of UHTC and RHTC for last 6 months.
2) All those who had given consent for the interview.
3) Those who were under treatment for RTI/STI.

Exclusion criteria:
1) All unmarried women of reproductive age group.
2) All married women beyond the reproductive age (15-45 years).
3) Those who had not given consent for the interview.
4) Women suffering from any other chronic illness Hypertension, DM type II, tuberculosis.

Study area: Field areas registered under the UHTC and RHTC, Department of Community Medicine J.N.M.C.H Aligarh.

Sample size: Sample Size was calculated taking prevalence rate of 47% taken from a study conducted in Etawah (Uttar Pradesh), absolute allowable error as 7% , confidence level =95% with non-response rate =10%. N came to be 223 rounded off to 250 in order to get better result. Total estimated sample size = 500 women were interviewed in all, 250 from rural area and 250 from peri-urban area.

Sampling method: Simple random sampling.

Data Collection strategy: A list of all the registered households and eligible couple were collected from the respective study area from the data available at the center. Required sample of married women of reproductive age group was selected by simple random sampling. Sample was drawn from each village/area was decided in proportion to the population of the village/area – Probability Proportionate to Size sampling. House to house survey was conducted. A pencil was dropped and the precise point noted that was a starting point ,from there we moved in top to bottom direction .If the married women of reproductive age group was not present at the time of visit then we moved to next household. Beginning of the study was done randomly by starting from a point in the first village/Mohalla and every married female in the family lying in the target group was counted as a sample, then moved to the next house. Same process was done in the other area to cover the required sample size.

Study Tool: A preformed and pre tested structured interview schedule was used for the study.

Operational definition: The symptoms mentioned under the WHO syndromic approach were used as the basis of finding the females with RTI.(6)

Ethical approval: Ethical approval were obtained from the Institutional Ethics Committee, JNMCH, Aligarh.

Consent: Informed verbal consent was taken from each woman and was assured of confidentiality and their identity will not be revealed in any reports.

Data analysis: The collected data were analyzed using IBM SPSS 20.0 Proportion, frequencies, $\chi 2$, and logistic regression were used to interpret the data.

Results

Prevalence

Table 1- Prevalence of RTI/STI was found to be 42.8 % in rural and 37.6 % in peri-urban area.

Table 2- Vaginal discharge only (rural 40% and peri urban 34%) was the major symptoms found among study group followed by lower abdominal pain only (rural 25% and Urban 26%).Vaginal discharge and lower abdominal pain was reported among 20% females in rural and 24% females in peri urban area. Very few females presented with the symptoms of Vaginal discharge + Lower abdominal pain+ Genital ulcer.

Socio-demographic and behavioral factors

Table 3-The prevalence of RTI/STI among the age group 35 – 45 years was found to be 50% in rural areas while it was 41.4% for the same age group in peri-urban areas. However, the relation between women having RTI/STI and their age groups was found not to be statistically significant. The prevalence of RTI/STI cases was observed to be higher among illiterate females in rural (53.8%), peri-urban (49.6%), and total population (51.7 %) respectively. On comparing the prevalence of RTI/STI and the education of the husband majority of the cases were found among women whose husbands were illiterate.

Table 4-Higher Prevalence of RTI/STI was found among females with > 2 parity, 51.9 % of respondents had symptoms of RTI/STI in rural area, whereas 45.1% among respondents in peri-urban area. In rural area and peri-urban area 52.6% and 60% of females respectively, having symptoms of STI/RTI found to experience abortion in past.

In rural area 77.3% of respondent while in peri-urban area 66.2% of respondents with symptoms of RTI/STI were found to have poor menstrual hygiene. Among non-contraceptive users 45.3 % and 44.4 % of females were found to have RTI/STI symptoms both in rural and peri-urban areas. There was also a finding that IUCD users had more (50% rural and 60% peri-urban) RTI symptoms in both the study groups. In rural area 63.2% females whereas in peri-urban area 53.1 % having symptoms of RTI/STI found to experience violence in past. The difference of association of RTI/STI with respect to above mentioned independent variable were found to be statistically significant among study groups both in rural and peri-urban area. There were no statistically significant association found between RTI/STI and religion, cast, socio-economic status, family type, occupation of female, occupation of husband and duration of husband.

Table5 - On bivariate logistic analysis, RTI was found to increase with increasing age in rural areas with an odds of 1.32 while in peri-urban areas RTI/STI was found to have 33% less chance of developing RTI with increasing age. More risk of RTI among illiterate females with an odd of 1.92 times as compared to literate females in a rural area while in peri-urban area risk among illiterate females was 1.7 times more as compared to literate. Education of husband was found to play important role, risk of RTI was 1.2 times more in an illiterate spouse in rural and 1.1 times more in illiterate spouses in the peri-urban areas. Housewives had 65 % less chance of developing RTI as compared to working females in rural areas while peri-urban housewives have 1.8 times more risk of developing RTI. Females whose spouses were not employed were found to have a 24% less chance of developing RTI as compared to working in rural areas whereas in peri-urban areas 1.24 times more risk of developing RTI in those who are unemployed. RTI risk was found to increase with decreasing the social class, by an odd of 1.3 times more in rural area while different result in peri-urban areas, there was 33% less chance of developing RTI/STI in the lower class. Females living in nuclear families were found to have more chance of RTI with an odd of 1.07 times whereas, in peri-urban areas, the risk among females residing in the nuclear family was found to be 1.12 times. Females having marriage age less than 18 were found to have a risk of having RTI by 2.1 times, while in peri-urban areas the risk of having RTI is by 1.21 times. Increasing parity was found to be an important risk factor in developing RTI/STI, risk of developing RTI increased with increasing parity by an odd of 1.41 times in rural and 1.39 times in the peri-urban area. The risk of RTI was found to increase in-home delivery by an odd of 1.2 as compared to institutional delivery, so in peri-urban areas risk of RTI is 1.04 times more in homes delivery as compared to an institutional one. Females having one or more abortions were found to be at more risk of RTI/STI, there is 1.163 times more risk of developing RTI in females who

underwent an abortion in rural areas and in peri-urban areas risk of developing RTI by odds of 6.6 times. Females having good menstrual hygiene were found to have 90% less chance of developing RTI as compared to poor hygiene whereas, in the peri-urban areas, good hygiene females had 84% less chance of developing RTI. Females having no use contraception were having more risk of developing RTI, by an odd of 1.02 times more while in the rural areas the risk was found to be 2.1 times more in contraceptive users. Females who experienced any type of violence were found to have more risk of developing RTI by an odd of 1.9 times in rural and 2.31 times in peri-urban areas. Partner history of RTI/STI was found to act as a very important risk factor for developing RTI/STI in females, risk was found to be 7.7 times more in the rural areas while in the peri-urban areas the risk was found with an odd of 2.57 times.

Discussion

Prevalence of RTI/STI: In our study, the prevalence of RTI/STI in married women of reproductive age group women was found to be 40.2 %. The prevalence was found to be 42.8 % in rural area and 37.6% in peri-urban areas which was similar to the prevalence found in a study by Verma et al., (2015)(7) conducted in peri-urban and rural areas of Delhi, they found almost equal prevalence, both in rural 42% and urban 42.3% area of Delhi. The prevalence of RTI/STI among the age group 35 – 45 years was found to be 50% in rural areas while it was 41.4% for the same age group in peri-urban areas, suggested by the fact that longer exposure to the reproductive married life has more chance to develop RTI/STI similar to Bhilwar et al. (2015)(8).

Socio-demographic factors: The prevalence of RTI/STI cases was observed to be higher among illiterate females in rural (53.8%), peri-urban (49.6%), and total population (51.7 %) respectively. This difference of RTI/STI in relation to the education of females was found to be statistically significant. Similar results were found in a study by where the prevalence of RTI/STI was low among more educated females in comparison to less educated and illiterate women and this was statistically significant (p value=.012)(9). A study conducted at Etawah showed that symptoms to be higher (50.46%) in those women who were educated up to class 8th and it showed a decreasing trend with an increase in the level of education and found minimum prevalence (40.9%) who were educated up to class12th or >12th but the difference of association was not significant(10). This clears the fact that educated females understand the importance of good health and how to access and utilize the health care services, more than illiterate or less educated females, this finding is in line with NFHS 4 data(11).

In our study husband's education also showed a strong association with the prevalence in both rural and peri-urban areas, finding suggestive that females with illiterate

husbands are more prone to RTI/STI than higher educated ones and the difference of association is highly significant in rural and peri-urban area respectively. This is similar to the finding in a study conducted by Thekdi et al(12), there was a significant association between symptoms found in women and their husbands' education ($\chi 2 = 16.607$, df. =5, P-value <0.005) (12) No significant association found between the prevalence of symptoms of RTI and the occupation with (p value=0.25) and (p-value = 0.38) in both rural and peri-urban area respectively. Similar findings were found in the study by Verma et al,(7) there was no significant difference in the prevalence of symptoms due to occupation both in rural and peri-urban areas. RTI/STI cases were observed to be higher in females with marriage age less than 18 (57.7%) in the rural areas and it was statistically significant (p value=0.01). Similar findings were present in a study by Kafle et al(13),. Early age at marriage means early sexual activities, which may cause trauma, hence offering a platform for future infection. The difference of RTI/STI in relation to parity was found to be statistically significant both in rural and peri-urban groups. A similar finding in a study by Bhilwar et al(8), Rode et al(14) and Kafle et al(13). This is explained by the fact that females having more children undergo more gynecological processes. There was a significant association between distribution of RTI/STI and mode of delivery among study groups in total population and rural areas but not in peri-urban populations, this may be because of the difference of distribution of RTI/STI and history of abortion was found to be statistically significant among the study groups both in rural and peri-urban area. Similar results in a study conducted by Sanjay Rode showed that there was 20.5 percent of women reported RTIs/STIs who had abortions/pregnancy wastages , the odds of having RTI/STI is 1.68 times more(14). In line with the above similar findings by Dev et al.,(15) This is explained by the fact that women who underwent abortion experience minor operative procedures which put them at risk of developing RTI/STI. The additional instrumental procedures used by the birth attendant to conduct normal delivery. The difference association of RTI/STI with respect to menstrual hygiene was found to be statistically significant among the study groups Similar findings in a study by Gupta et al(9)., showing the prevalence of RTI was significantly associated with menstrual hygiene (p-value=0.019). Also, findings by Preethi et al(16) also shown in their study that the prevalence of the RTI/STI symptoms was higher (20.7%) in those who used ordinary cloth during menstruation as compared with those who used sanitary pads (9.9%) and the differences were statistically significant (P = 0.033) areas(16.) There was also a finding that IUCD users had more (50% rural and 60% peri-urban) RTI symptoms in both the study groups. The difference of association of RTI/STI in relation to contraceptive use was found to be statistically significant among the study groups. Similar findings were found in a study by Verma et al(11), Bhilwar et al(13) also suggest that RTI is significantly associated with the insertion of IUDs.

The difference of association of RTI/STI with respect to husbands history of RTI/STI was found to be statistically significant among the study groups in rural and peri-urban area. Similar results found in the study conducted by Yasmin S et al. (17), Chaudhary et al (18) in their study that STI/RTI was statistically significant (P < 0.05) higher (51.6%) in women whose partner also had symptoms suggestive of RTI/STI. This proves that RTI/STI in a partner is a major risk factor. The difference of association of RTI/STI with respect to history of violence was found to be statistically significant among study groups in total area, rural and peri-urban area. Similar findings available in the study with Shabnam(19)where she clearly mentioned the different types of violence and RTI, 25.1 % of females who experienced sexual and physical violence had RTI/STI followed by 17.2 % in those who experienced sexual violence only and 13.8% female had symptoms in whom there was a history of violence (p value=0.001). this was also supported by Chowdhary & Patel et al(20).

Conclusion

Prevalence of RTI/STI symptoms was found to be 40.2%. Symptoms were high in rural (42.8%) and in peri-peri-urban it was comparatively lower (37.6%) areas. Prevalence of the symptoms of RTI/STI was found to be higher among the study subjects having lower educational status, who were not using any contraceptive method, not following good menstrual hygiene, had husband history of RTI/STI, had a history of abortion, had a history of violence, and increased parity in both peri-urban and rural areas.

Recommendation

Women should be educated about the major syndromes, symptoms, and the complications resulting from RTI/STI and to report early to the health system. They should be motivated to use sanitary napkins, and maintain menstrual hygiene. Violence against females should be discouraged. Special attention should be given to RTI/STI components while providing RCH services, especially in slum areas.

Limitation of the study

Data collection was based only on the symptoms of the study. Local examination of the married women of our study was not done because it was ethical to perform these examination in field areas. Laboratory tests were not done in our study.

Relevance of the study

This study highlights the reproductive morbidity among married females. Also highlights the important socio-demographic factors associated with the prevalence of symptoms, also tells about the changing scenario in rural

areas and females are realizing the importance of education in their life.

Authors Contribution

SK: Concept, literature search, clinical studies, data acquisition, data analysis, statistical analysis, manuscript preparation.SM: design, manuscript editing, manuscript review, guarantor. MAA: design, manuscript editing, manuscript review, guarantor. AJA: design, definition of intellectual content, manuscript editing, manuscript review, guarantor.

References

1. Nations United. Report of the International Conference on Population and Development: Cairo 5-13 September 1994. New York: United Nations. 1995.
2. Top Level Push to Tackle Priorities in Sexual and Reproductive Health [online]. United Nations Population Fund. 2022. Available from: https://www.unfpa.org/press/top-level-push-tackle-priorities-sexual-and-reproductive-health . Accessed on 30/ 09/ 2022].
3. SAMA Resource Group for Women and Health. SEXUAL HEALTH AND REPRODUCTIVE HEALTH RIGHTS IN INDIA, April 2018. [online]. Available from: https://nhrc.nic.in/sites/default/files/sexual_health_reproductive_health_rights_SAMA_PLD_2018_01012019_1.pdf . Accessed on 30/09/2022].
4. Ministry of Health and Family Welfare (MOHFW).Department of AIDS Control, State Fact Sheet March 2014 (online), Available from: http://www.naco.gov.in/sites/default/files/State_Fact_Sheet_2013_14.pdf . [Accessed on 30/09/2022].
5. STI/RTI Services. National AIDS Control Organization, MoHFW. GoI [online]. Naco.gov.in. 2022. Available from: http://naco.gov.in/sti-rti-services . Accessed on 30/09/2022].
6. Ministry of Health and Family Welfare (MOHFW).Department of AIDS Control, State Fact Sheet March 2014 (online), Available from: http://www.naco.gov.in/sites/default/files/State_Fact_Sheet_2013_14.pdf . [Accessed on 30/09/2022].
7. Verma A, Kumar Meena J, Banerjee B. A Comparative Study of Prevalence of RTI/STI Symptoms and Treatment Seeking Behaviour among the Married Women in Urban and Rural Areas of Delhi. Int J Reprod Med. 2015;2015:563031.
8. Bhilwar M, Lal P, Sharma N, Bhalla P, Kumar A. Prevalence of reproductive tract infections and their determinants in married women residing in an peri-urban slum of North-East Delhi, India. Journal of Natural Science, Biology, and Medicine. 2015;6(S1):S29.
9. Gupta AK, Thakur A, Chauhan T, Chauhan N. A study to determine socio demographic corelates of reproductive tract infection amongst women of reproductive age group. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2020;9(8):3463-9.
10. Rani V, Dixit AM, Kumar S, Singh NP, Jain PK, Peeyush K. Reproductive morbidity profile among ever married women (15–44) years of rural Etawah District, Uttar Pradesh: A cross-sectional study. National journal of Community Med 2015;7(1):35-40.
11. International Institute for Population Sciences (IIPS) and ICF. 2017. National Family Health Survey(NFHS-4), 2015-16: India. Mumbai: IIPS. Available at: http://rchiips.org/nfhs/NFHS-4Reports/India.pdf .[Accessed on 09/09/2022].
12. Thekdi KP, Patel KG, Patel NK, Thekdi PI. A cross sectional study on the prevalence of reproductive tract infections amongst married women in the rural areas of Surendranagar district. Int J Res Med Sci 2014;2(1):215
13. Kafle P, Bhattarai SS. Prevalence and factors associated with reproductive tract infections in gongolia village, Rupandehi district, Nepal. Advances in Public Health. 2016:5.
14. Rode S. Determinants of RTI/STI' s Prevalence Among Women in Haryana.Working Papers/Health Studies 2007.
15. Dev R, Singh J, Khanna A. Determinants of RTI/STIs among married women in Punjab and their health seeking behavior. Journal of Family Welfare.2005;5(1):24-34.
16. Philip PS, Benjamin AI, Sengupta P. Prevalence of symptoms suggestive of reproductive tract infections/sexually transmitted infections in women in peri-urban areas of Ludhiana. Indian Journal of Sexually Transmitted Diseases and AIDS. 2013;34(2):83.
17. Yasmin S, Mukherjee A. A cyto-epidemiological study on married women in the reproductive age group (15-49 years) regarding reproductive tract infection in a rural community of West Bengal. Indian Journal of Public Health 2012;56(3):204.
18. Chowdhary N, Patel V. The effect of spousal violence on women's health: findings from the Stree Arogya Shodh in Goa, India. J Postgrad Med. 2008(4):306-12.
19. Shabnam S. Sexually transmitted infections and spousal violence: The experience of married women in India. Indian Journal of Gender Studies 2017;24(1):24-46.
20. Weiss, H.A., Patel, V., West, B., Peeling, R.W., Kirkwood, B.R., &Mabey, D. Spousal sexual violence and poverty are risk factors for sexually transmitted infections in women: A longitudinal study of women in Goa, India. Sexually Bibliography 151 Transmitted Infections 2008;84(2): 133–139.

Tables

TABLE 1: PREVALENCE OF RTI/STI AMONG MARRIED WOMEN OF REPRODUCTIVE AGE GROUP IN PERI-URBAN AND RURAL AREA

RTI/STI	PERI-URBAN		RURAL		TOTAL	
	No.	%	No.	%	No.	%
Present	94	37.6	107	42.8	201	40.2
Absent	156	62.4	143	57.2	299	59.8
TOTAL	250	100	250	100	500	100

χ2=1.402   df =1   p value = 0.236

TABLE: 2 DISTRIBUTION OF WOMEN HAVING SYMPTOMS OF RTI/STI AS PER SYNDROMIC APPROACH

CHARACTERISTIC	TOTAL	RURAL	PERI-URBAN
Symptoms	No. (%)	No. (%)	No. (%)
Vaginal discharge only	185(37)	100 (40)	85 (34)
Lower abdominal pain only	128 (25.6)	62 (25)	66 (26)
Vaginal discharge + Lower abdominal pain	108 (22)	49 (20)	59 (24)
Vaginal discharge + Lower abdominal pain+ Genital ulcer	8(1.6)	6 (2.4)	2 (0.8)

TABLE 3 PREVALENCE OF SYMPTOMS SUGGESTIVE OF RTI/STI IN RELATION TO SOCIODEMOGRAPHIC CHARACTERISTICS

	RURAL		PERI-URBAN	
1.Age group	No. of females interviewed	No. (%) of females with RTI/STI symptoms	No. of females interviewed	No. (%) of females with RTI/STI symptoms
15-24	77	31(40.3)	70	23(32.9)
25-34	129	54(41.9)	122	47(38.5)
35-45	44	22(50)	58	24(41.4)
Total	250	107	250	94
	χ^2=1.181 df=2 p-value=.55		χ^2=1.06 df =2 p-value =0.5	
2. Religion				
Hindu	216	92(42.6)	13	4(30.8)
Muslim	34	15(37.5)	237	90(38)
Total	250	107	250	94
	χ^2=.028 df=1 p-value=.86		χ^2=0.2 df =1p-value =0.6	
3. Social class				
I	0	0(0)	9	1(11.1)
II	11	7(63.6)	15	4(26.7)
III	39	16(41)	39	16(41)
IV	81	28(34.6)	86	37(43)
V	119	56(47.1)	101	36(35.6)
Total	250	107	250	94
	χ^2=5.125 df=3 p-value=0.163		χ^2=4.894 df=4 p-value=0.29	
4. Education of female				
High school and above	62	18(29)	105	27(25.7)
Below high school	69	25(36.2)	32	11(34.37)
Illiterate	119	64(53.8)	113	56(49.6)
Total	250	107	250	94
	χ^2=11.8df=2 p value=0.002*		χ^2=13.3 df =2 p-value=0.01*	
7.Education of husband				
High school and above	122	47(38.5)	138	48(34.7)
Below high school	82	38(39)	61	20(32.7)
Illiterate	46	12(47.8)	51	26(50.9)
Total	250	107	250	94
	χ^2=5.09df=2 p value=0.07		χ^2= 4.96 df =2 p-value=0.08	
5. Occupation of female				
Professional	-	0(0)	4	1(25)
Unskilled	8	5(62.5)	1	1(100)
Housemaker	242	102(42.1)	245	92(37.6)
Total	250	107	250	94
	χ^2=1.310 df=1 p-value=0.25		χ^2=1.930 df=2 p-value=0.38	
6. Occupation of husband				
Professional	21	7(33.3)	41	17(41.5)
Unskilled	133	60(45.1)	106	40(37.7)
Semiskilled	89	37(41.6)	97	36(37.1)
Unemployed	7	3(42.9)	6	19(16.7)
Total	250	107	250	94
	χ^2=1.114 df=3 p-value=0.774		χ^2=1.392 df=3 p-value=0.70	

TABLE 4: PREVALENCE OF SYMPTOMS SUGGESTIVE OF RTI/STI IN RELATION TO MARITAL STATUS, OBSTETRIC AND BEHAVIORAL FACTORS

	RURAL		PERI-URBAN	
1. Age at marriage (years)	No. of females interviewed	No. (%) of females with RTI/STI symptoms	No. of females interviewed	No. (%) of females with RTI/STI symptoms
<18	71	41(57.7)	64	24(37.5)
18-22	166	62(37.3)	154	56(36.4)
23-28	12	3(25)	29	14(48.3)
>28	1	(-)	3	-(-)
Total	250	107	250	94
	χ^2=11.38 df=3 p-value =0.01*		χ^2=3.317 df=3 p-value=0.3	
2. Duration of marriage				
< 5	46	14(30.4)	33	11(33.3)
5-10	77	34(44.2)	95	40(42.1)
11-15	66	33(50)	51	14(27.5)
>15	61	26(42.6)	71	29(40.8)
Total	250	107	250	94
	χ^2=4.32 df=3 p value=0.228		χ^2=3.636 df=3 p value=0.304	
3. Parity				
0	14	3(21.4)	7	1(14.3)
1	34	11(32.4)	57	16(28.1)
2	69	24(34.8)	44	13(29.5)
>2	133	69(51.9)	142	64(45.1)
Total	250	107	250	94
	χ^2=10.4 df=3 p-value=0.015*		χ^2=8.42 df=3 p-value=0.03*	
4. Place of delivery				
Institutional	197	85(43.1)	166	63(38)
Home	21	10(47.6)	43	10(23.3)
Both	10	4(40)	21	9(42.9)
NA(pregnant & nulliparous)	22	8(36.4)	20	12(60)
Total	250	107	250	94
	χ^2=.613 df=3 p value=0.893		χ^2=8.304 df=3 p value=0.040*	
5. Mode of delivery				
Normal	198	89(44.9)	185	70(37.8)
C section	24	5(20.8)	35	9(25.7)
Both	6	5(83.3)	10	3(30)
NA(pregnant & nulliparous)	22	8(36.4)	20	12(60)
Total	250	107	250	94
	χ^2 =9.503 df=3 p value=0.023*		χ^2=6.635 df=3 p-value=0.084	
6. History of Abortion				
Present	78	41(52.6)	75	45(60)
Absent	172	66(38.4)	175	49(28)
Total	250	107	250	94
	χ^2 =4.41 df=1p-value =0.036*		χ^2=22.9 df =1 p value=0.001*	
7. Menstrual Hygiene				
Poor Hygiene	97	75(77.3)	80	53(66.2)
Good Hygiene	153	32(20.9)	170	41(24.1)
Total	250	107	250	94
	χ^2=77.146 df=1 p-value= <0.001*		χ^2=41.158 df=1 p value=<0.001*	
8. Contraceptives				
Barrier method	68	25(36.8)	117	39(33.3)
IUD's	2	1(50)	5	3(60)
Oral pills	7	3(42.9)	2	0(0)
Others	12	5(41.7)	20	4(20)
None	161	73(45.3)	108	48(44.4)
Total	250	107	250	94
	χ^2=11.657 df=4 p-value=0.020*		χ^2=9,71 df=4 p-value=0.04*	
9. Husband with H/O STD				
Present	21	18(85.7)	20	12(60)
Absent	229	89(38.9)	230	82(35.7)

	RURAL		PERI-URBAN	
Total	250	107	250	94
	χ²=17.24 df =1p-value= <0.001*		χ²=4.64 df = 1 p 56890-value= 0.03*	
10. H/O Violence				
Yes	38	24(63.2)	41	22(53.1)
NO	212	83(39.2)	209	72(34.4)
Total	250	107	250	94
	χ²=7.58 df=1 p-value=0.006*		χ²=5.39 df=1 p-value= 0.02*	
*P<0.05 is significant				

TABLE 5: DETERMINANTS OF RTIS OBTAINED ON BIVARIATE LOGISTIC REGRESSION

	CHARACTERISTICS	RURAL(OR)	PERI-URBAN(OR)
Age group	15-24 35-45 (RC)	1.32(.706-2.478)	77(.395-1.514)
Education of female	Illiterate Literate (RC)	1.916(0.852-4.307)	1.747(.856-3.566)
Education of husband	Illiterate Literate (RC)	1.273(1.00-1.61)	1.186 (.518-2.715)
Occupation female	Not working Working (RC)	0.339 (.042-2.767)	1.869(.419-8.339)

	CHARACTERISTICS	RURAL(OR)	PERI-URBAN(OR)
Occupation husband	Not working Working (RC0	.769 (.018 -33.6)	1.36(.182-10.297)
Type of family	Nuclear Joint (RC)	1.075(.487-2.37)	1.123(.53-2.337)
Marriage age	<18 >18 (RC)	2.71(1.102-6.698)	1.21 (.67-2.181)
Parity	>2 <2(RC)	1.41(.668-2.98)	1.39(.680-2.861)
Place of delivery	Home Institutional (RC)	1.20 (.63 -2.26)	1.040(.635-1.704)
Abortion	yes no (RC)	1.163 (.46-2.88)	6.696(2.415-18.569)
Menstrual hygiene score	Poor (RC) Good	.094(.041-.213)	.162(0.09 - 0.29)
Contraception	Yes No (RC)	1.02(.82-1.27)	2.15(1.24-3.74)
Violence	Yes No (RC)	1.9(0.9-1.9)	2.31(4.2-1.07)
Partner history	Yes No (RC)	7.7(2.1 -27.6)	2.57(1.00-6.6)
*Note (RC) is reference category			

Figures

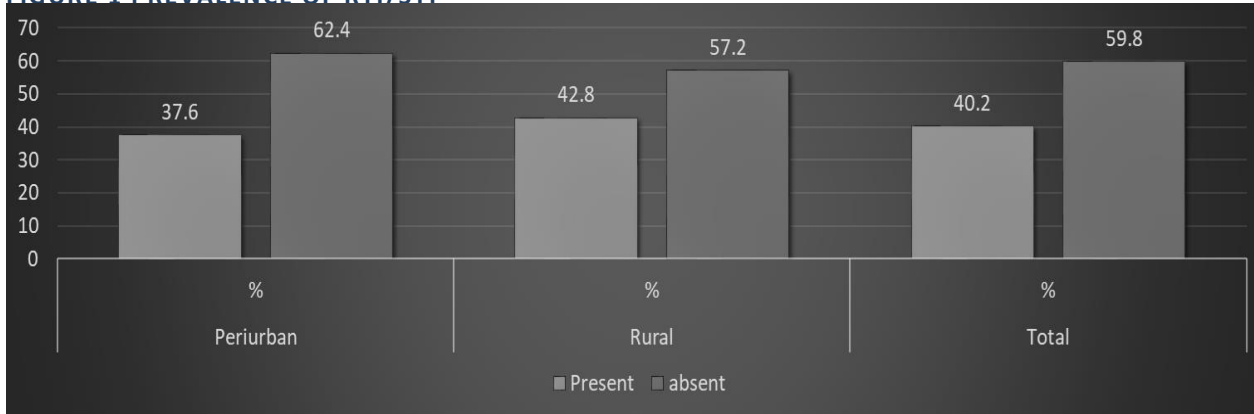## FIGURE 1 PREVALENCE OF RTI/STI

FIGURE 2 DISTRIBUTION OF WOMEN HAVING SYMPTOMS OF RTI/STI AS PER SYNDROMIC APPROACH