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A Study on Reproductive Tract Infections among Women of Reproductive Age Group in Slums of Burdwan Municipal Area, West Bengal

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Abstract:
Aim of this study *is to determine the prevalence of reproductive tract infections among women of reproductive age group in slums of Burdwan Municipal area by syndromic approach.*
Materials and method: *All women of reproductive age group (15-49 yrs) were evaluated for inclusion in the present study with the following exclusion a)Women not willing to participate in the study. b)Pregnant women ,reported missed period or had given birth in the previous six weeks.c)Women who were seriously ill. The required samples of study subjects were selected through multistage sampling technique as follows. At first the list of the existing 144 slums was made and from this 10% of the slums were selected by simple random sampling method . This served as the sampling frame at the level of each identified slum. At this stage samples were collected by population proportionate to size sampling method; required samples from the listed slums varied from 7 to 77. At the final stage the desired number of subjects were collected from each slum using simple random sampling technique. Thus total 422 subjects were collected from the study population. a)A pre-designed ,pre-tested , semi-structured schedule was developed with the help of a standard schedule for evaluation of the NACP constructed by WHO and adopted by the National AIDS Control (NACO) for BSS (Behaviour Surveillance Survey)*
Results: *42.1% of the total respondents (women of reproductive age group) had any kind of reproductive tract infection in last twelve months. Out of 416 study subjects,42.1% had vaginal discharge syndrome,13.5% have lower abdominal pain syndrome, 0.5% have lesion over genital area and in 0.5 % inguinal swelling found. 57.9% were asymptomatic.*
Conclusion: *The study on reproductive tract infections among women of reproductive age group in the municipal area of Burdwan assessed socio-economic characteristics, prevalence of reproductive tract infections by syndromic approach and knowledge regarding reproductive tract infections . The study also had the objective to find any association of reproductive tract infection with soci-demographic variables and health care seeking behavior of them.*

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I. Introduction

Sexually transmitted infection (STIs) / Reproductive tract infection (RTIs) cause a large proportion of the global burden of ill-health. Globally WHO estimates that reproductive ill health accounts for 36.6% of the total disease burden in women as compared to 12.3% for men of the same age. [8] The burden of RTIs particularly STDs falls most heavily on women of reproductive age group and the term RTIs is invariably used to refer to infections among women. [9] STIs account for 17 % of economic losses because of ill-health . STDs are now the commonest group of notifiable infectious diseases in most countries.

WHO estimates that over 340 million new cases of four curable STIs (gonorrhoea, chlamydia, syphilis and trichomoniasis) occurred in 1999. Million of viral STI cases also occur annually, attributable mainly to HIV, human herpes virus, human papilloma virus and hepatitis B virus.[10,11]

RTIs are a global health problem especially in resource poor settings of the world. Studies amongst women in India, Bangladesh, Egypt and Kenya have found RTI prevalence rates ranging from 52 to 92% and fewer than half amongst these women recognized the condition as abnormal.[9]

RTI/STI's transmission, prevalence, and disease burden are not shared equally between the sexes. Because of economic, biological, and social factors, [12,13] women are more susceptible than men for the acquisition of HIV and other STIs. In Western Pacific, studies amongst pregnant women have shown a

prevalence rate that ranges from of 5.7% in Thailand [14] up to 17% in India. [15] One study in a rural population of reproductive age group in Papua New Guinea showed a prevalence rate of 26%, 59% of the women had at least one STI.[16] As many as 70% of the study male participants were unable to mention even one symptom of an STI. Poor treatment-seeking behavior was also observed. The actual prevalence rate in the general population might be higher due to the likelihood of presence of an asymptomatic infection. [17] In a clinic based study Kampala, Uganda, 21% of the females and 13% of the males had at least one STI. [18]

Regional overview: India

Based on a number of prevalence surveys, the annual incidence of RTI/STI in India is estimated at 5% or approximately 40 million new infections takes place every year.[19]

RTI/STIs are major public health problem the world over and India is no exception. It is virtually impossible to assess the magnitude of the problem in India due to lack of reliable data and gross under-reporting. It is estimated that more than 40 million cases are reported as new cases every year and as many as 1 or 2 women in every ten are infected with an STD. It is probably more prevalent communicable disease in India. [20]

Types of reproductive tract infection

RTIs refer to three different types of infections which affect the reproductive tract.

Endogenous infections are probably the most common RTIs worldwide. They result from an overgrowth of organisms normally present in the vagina . Endogenous infections include bacterial vaginosis and candidiasis which can be easily treated and cured.

Iatrogenic infections occur when the cause of infection (a bacterium or other micro-organism) is introduced into the reproductive tract through a medical procedure such as menstrual regulation, induced abortion, insertion of an IUD or during childbirth.

STIs are caused by viruses, bacteria, or parasitic microorganisms that are transmitted through sexual activity with an infected partner. About 30 different sexually transmitted infection have been identified, some of which are easily treatable , many are not.HIV , the virus that causes AIDS , is perhaps the most serious sexually transmitted infection as it eventually leads to death. [3,21]

Every human being has the right to live in an environment with minimum health risks, and to have access to health services that can prevent or alleviate their suffering, treat disease, and help maintain and promote good health throughout the individual's life. Many women, wherever they live in the world, are being denied this basic human right. [1]

Reproductive health is a condition in which reproduction is accomplished in a state of complete physical, mental and social well being and not merely as the absence of disease or disorders of the reproductive process.[2]

Reproductive tract infection (RTI) is a broad term that includes sexually transmitted infection (STI) as well as other infection of the reproductive tract that are not transmitted by sexual intercourse. STIs in most cases have much more severe health consequences than other RTI , the term RTI/STI is used to highlight the importance of STI within RTI.[3]

Reproductive tract infections (RTIs) , including both sexually transmitted infections (STIs) and non-sexually transmitted infections(non-STIs) of the reproductive tract are responsible for major ill-health throughout the world, more so in developing countries where they collectively rank among the five most important causes of healthy productive life lost .RTIs affect the health and social well-being of women, particularly those in the reproductive and economically most productive age groups, and their offsprings . RTI/STI rank second as a cause of healthy life lost among women in the reproductive age group in developing countries, after maternal morbidity and mortality. [4]

I.Current status of Prevalence of reproductive tract infections according to different surveys: [7, 7, 24]

	NFHS-2	NFHS-3	RCH-I	RCH-II
India(%)	**39.2**	**11.1**	**29.7**	**37.4**
West Bengal (%)	**45.3**	**13.4**	**30.4**	**42.3**

II. Current status regarding knowledge on reproductive tract infections according to different surveys : [5,7,24,25,26]

Indicators	NFHS -3	NFHS-2	DLHS -3	DLHS-2	RCH-II
Women who have heard of AIDS(%)	**57.0**	**40.3**	**58.6**	**52.2**	**NA**
Women who know that consistent condom use can reduce the chances of getting HIV/AIDS(%)	**34.7**	**NA**	**NA**	**NA**	**NA**
Women who have a regular exposure to media(TV, radio or newspaper at least once a month)(%)	**65**	**NA**	**NA**	**NA**	**NA**
Women who have heard of RTI/STI (%)	**NA**	**NA**	**33.3**	**43.9**	**44.2***
Women who have any symptoms of RTI/STI (%)	**NA**	**NA**	**18.3**	**32.5**	**NA**

Women who know the place to go for testing of HIV/AIDS(%)	**NA**	**NA**	**61.4**	**NA**	**NA**
Unmarried women who have heard of RTI/STI(%)	**NA**	**NA**	**33.1**	**NA**	**NA**
Unmarried women who have heard of HIV/AIDS(%)	**NA**	**NA**	**78.1**	**NA**	**NA**
Unmarried women who know the place for testing of HIV/AIDS (%)	**NA**	**NA**	**65.2**	**NA**	**NA**

***In West Bengal ,it is 69.7%**

III. Current status regarding treatment seeking behaviour of reproductive tract infections according to different surveys: [53]

	RCH-I	**RCH-II**
India(%)	**37.6**	**21.5**
West Bengal (%)	**30.2**	**21.7**

II. Materials & Methods

Type and design of the study
Community based observational descriptive study, cross-sectional in design.

Place of study

The study was conducted in slums of Burdwan Municipality area in the district of Burdwan, West Bengal. Burdwan is quite an old and important town of the state. Burdwan town is located at 23.25 ^{0} 87.25 ^{0} E. It is situated 100 km North-West of Kolkata on G.T.Road (NH-2) and Eastern Railway and 1100km away from New Delhi.[40]

As per census 2011 the population of Burdwan Municipality is 3, 14,638 [6,41]and area is 26.30 sq.km with 35 wards [42], 144 slums [43]. There are 1 Medical College hospital , 39 Nursing homes , 1 municipality health centre , 5 health posts and 27 sub health posts in this town [42]. Total slum population is 45,696.[43]

Duration of study
May 2014 to April 2015.

Study Population
All women of reproductive age group (15-49 years)

Exclusion criteria
a)Women not willing to participate in the study.
b)Pregnant women ,reported missed period or had given birth in the previous six weeks.
c)Women who were seriously ill.

Sample size
Based on a study in Mumbai [27] , the prevalence of RTIs is 50% , 95% confidence interval ; using the formula, Z^2 p q /1^2 (where z=1.96, p=prevalence , q = 1-p, l= allowable error, which is 15% of p), the sample size came out to be 171. Considering design effect of 2, the calculated sample size was 171x 2 =342. Considering the subject of study, non-response rate of 20% [71] is added final sample size was 342+68 =410.

Sample design

The required samples of study subjects were selected through multistage sampling technique as follows . At first the list of the existing 144 slums was made and from this 10% of the slums i.e 15 slums were selected by simple random sampling method . In each identified slum, the list of eligible study subjects fulfilling the defined criteria was prepared with the help of AnganWadi Workers(AWW) . This served as the sampling frame at the level of each identified slum. The number of subjects varied from slum to slum which ranged from 29 to 326 . At this stage samples were collected by population proportionate to size sampling method; required samples from the listed slums varied from 7 to 77. At the final stage the desired number of subjects were collected from each slum using simple random sampling technique. Thus total 422 subjects were collected from the study population.

Tools and Techniques
Tools
a)A pre-designed ,pre-tested , semi-structured schedule was developed with the help of a standard schedule for evaluation of the NACP constructed by WHO and adopted by the National AIDS Control (NACO) for BSS (Behaviour Surveillance Survey)[83,84]. The schedule was pre- tested before its final application in the field and was modified accordingly after taking expert opinion from Department of Community Medicine, Burdwan

Medical College.
b)Relevant medical records e.g prescriptions, discharge certificates etc.

Techniques
Interview of the study subjects and review of relevant records.

Study variables
1.Socio-demographic and reproductive variables:
Age, religion , caste, occupation , educational status , income , marital status , duration of marital life , parity , obstetric history, menstrual hygiene , contraceptive practice.
2.Variables related to symptoms of reproductive tract infections:
Vaginal discharge, vaginal itching, burning sensation during miturition , low back-ache, lower abdominal pain, painful coitus, infertility, genital ulcer, swelling in the vulval or inguinal region, partner having any discharge per urethra or any genital ulcers or any scrotal swelling or any swelling in the inguinal region.
3.Variables related to knowledge regarding reproductive tract infection:
a)Knowledge about symptoms of reproductive tract infections
b)Knowledge about mode of transmission of reproductive tract infections
c)Knowledge about ill-effects of the disease on health
d)Knowledge about prevention of the disease
e)Knowledge about necessity of treatment of the disease
f)Knowledge about partner treatment
4.Variable for health care seeking behavior;
Place of seeking health care for reproductive morbidity
Reasons for not seeking health care.

III. Data collection

Prior to data collection , the district health authority and Municipality health and administration authorities were intimated about the purpose of the study: their permission and cooperation was sought. Co-operation was also sought from the different level health workers .The schedule was pretested by conducting a pilot study in one slum and was modified accordingly before the original survey. A list of the reproductive age women was obtained from AWC registers and were serially listed. From each Anganwadi Centre register, women were selected randomly using a random numbering table The selected individual study women were interviewed using the pre-designed , pre-tested schedule at their households and privacy was maintained. Before interviewing them, the nature and purpose of the study was briefed and were assured about the confidentiality of their information. Informed consent was obtained from each and every study subjects. For those below 18 years ,informed consent was taken from their parents. Specific diseases identified during the study were conveyed to the participants. Necessary referral advice was given. Awareness regarding the reproductive health problems was given to all of the subjects.

Ethical Approval
The research proposal received ethical clearance from the institutional ethics committee of Burdwan Medical College ,West Bengal.

Data Analysis
The data collected was rechecked for completeness and consistency , entered in the computer on Excel data sheets and analyzed using statistical software SPSS 19 . Descriptive statistics was performed to present the data in tables and diagrams . Statistical tests such as chi-square test were applied as necessary. A p value < 0 .05 was considered significant.

IV. Results

Among the 422 respondents , 416 could be studied at the end of the study period due to inconsistency and incompleteness in answering . Final analysis was done among 416 study subjects.

1.Socio-Demographic Characteristics

Table .1.1 Distribution of study subjects according to age group (n=416)

Age group (years)	No.	Percentage
15-19	98	23.6
20-29	193	46.4
30-39	68	16.3
40-49	57	13.7

Total	416	100

46.4 % of the study subjects belonged to the age group of 20-29 years followed by 15 to 19 years age group (23.6%). 16.3% and 13.7 % belonged respectively to the age group of 30-39 years and 40-49 years.

Figure 1: Pie diagram showing distribution of the study subjects according to age group (n=416)

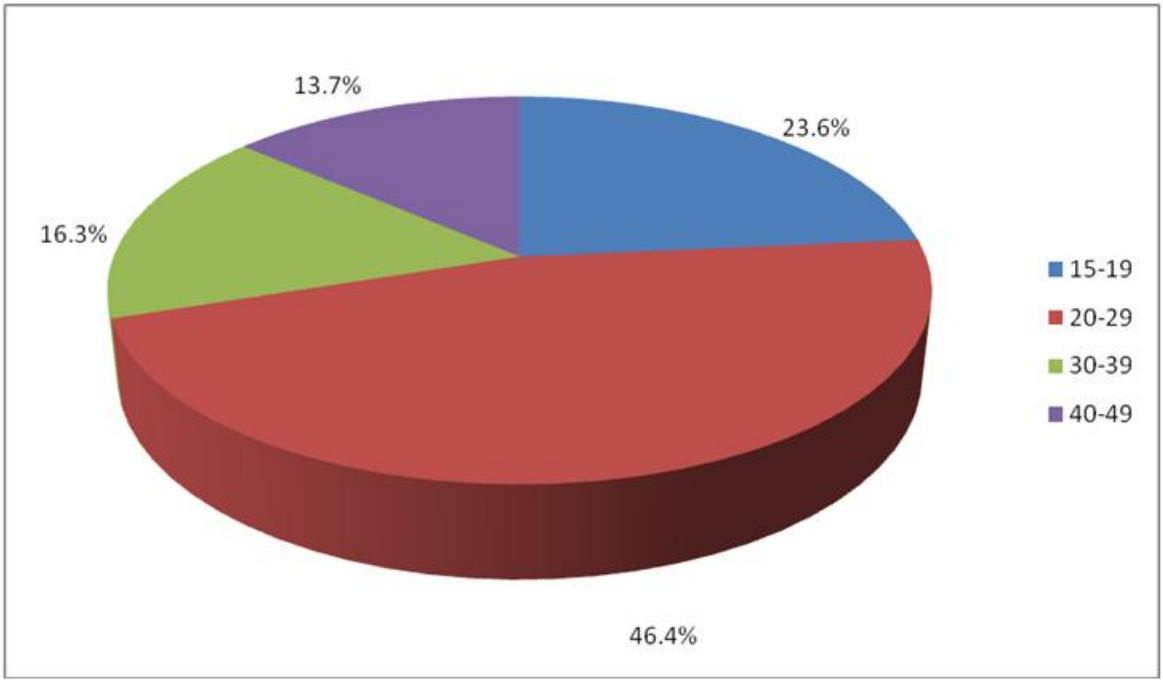


Table 1.2 Distribution of study subjects according to religion (n=416)

Religion	No.	Percentage
Hindu	311	74.8
Muslim	90	21.6
Christian	15	3.6
Total	416	100

Majority of study subjects belonged to the Hindu religion (74.8%) , 21.6% and3.6% belong to Muslim and Christian religion respectively.

Figure 2. Pie-diagram showing distribution of study subjects according to religion (n=416)

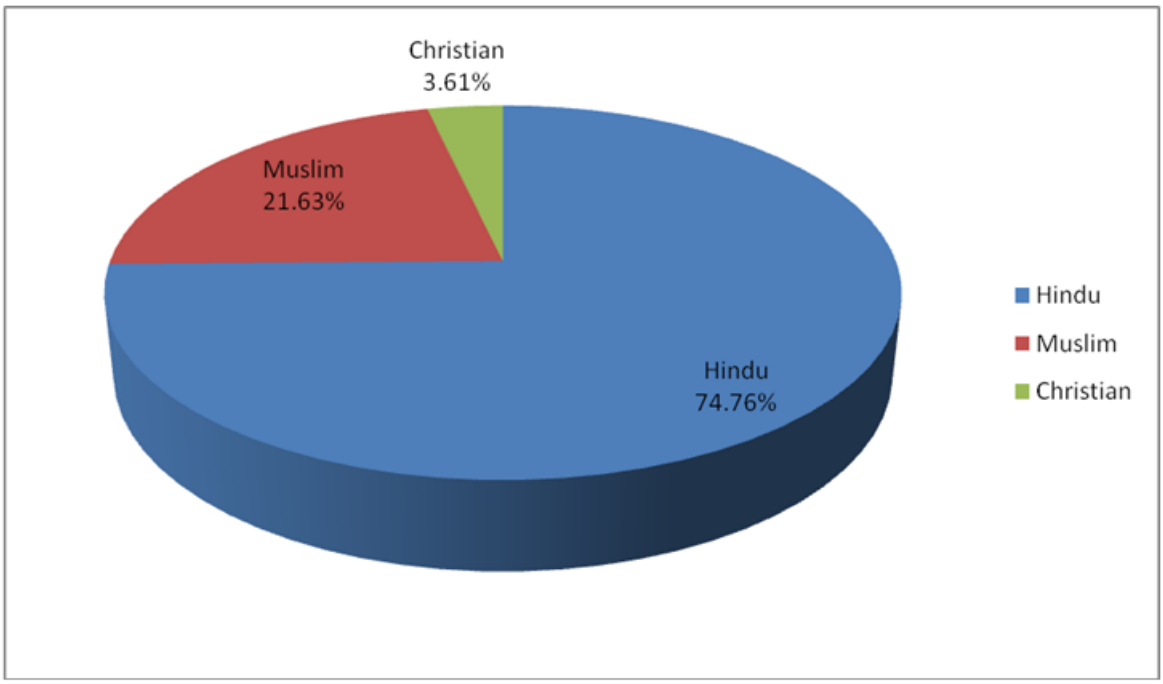


Table1.3. Distribution of study subjects according to caste (n=416)

Caste	No.	Percentage
General	88	21.1
Schedule caste	274	65.9
Schedule tribe	14	3.4
OBC	40	9.6
Total	416	100

Out of the 416 study subjects, 65.9% women belonged to the schedule caste, 21.1% belonged to the general caste, 3.4% to the schedule tribe and 9.6% to the other backward classes.

Table1.4. Distribution of study subjects according to occupation (n=416)

Occupation	No.	Percentage
Home maker	325	78.1
Employed	29	7
Students	62	14.9
Total	416	100

78.1 % of study subjects were homemakers, 7 % of women were employed and 14.9 % were student.

Table1.5. Distribution of study subjects according to educational status (n=416)

Educational status	No.	Percentage
Illiterate	127	30.5
Just literate	16	5.8
Primary	123	29.4
Mid-school	45	10.8
Secondary	85	22.4
Higher secondary	16	2.2
Graduation and above	4	0.9
Total	416	100

Out of the 416 study subjects ,127 (30.5%) were illiterate , 16 (5.8%) were just literate and 273 (i.e 63.7%) were literate of which 29.4% were educated upto primary level,10.8% were educated upto mid-school, 22.4% were educated upto secondary , 2.2% studied upto higher secondary and 0.9 % upto graduation .

Table1.6. Distribution of study subjects according to socio economic status as per modified B.G.Prasad scale 2013 .[95] (n=416)

Socio-economic status	No.	Percentage
III (Rs.2577-1547)	22	5.3
IV(Rs.1546-773)	168	40.4
V(Below Rs.773)	226	54.3
Total	416	100

54.3% of study subjects belonged to SES-V , 40.4% belonged to SES-IV and 5.3% to SES-III. None belonged to SES -I& II.

Table1.7 Distribution of study subjects according to menstrual hygiene (n=416)

Menstrual hygiene	No.	Percentage
Sanitary pad	46	11.1
Clothes	328	78.8
Both sanitary pads and clothes	42	10.1
Total	416	100

Among the total 416 study subjects, 78.8 % uses only clothes , 11.1 % uses sanitary pads and 10.1 % uses both sanitary pads and clothes

Table1.8. Distribution of study subjects according to marital status (n=416)

Marital status	No.	Percentage
Unmarried	97	23.3
Married	300	72.1
Separated / divorced/Widow	19	4.6
Total	416	100

Out of the total 416 study subjects (72.1%) were married. A few of them i.e. 4.6 % were either separated, divorced or widow. 23.3% of the total women were unmarried.

Figure 3. Bar diagram showing distribution of study subjects according to marital status

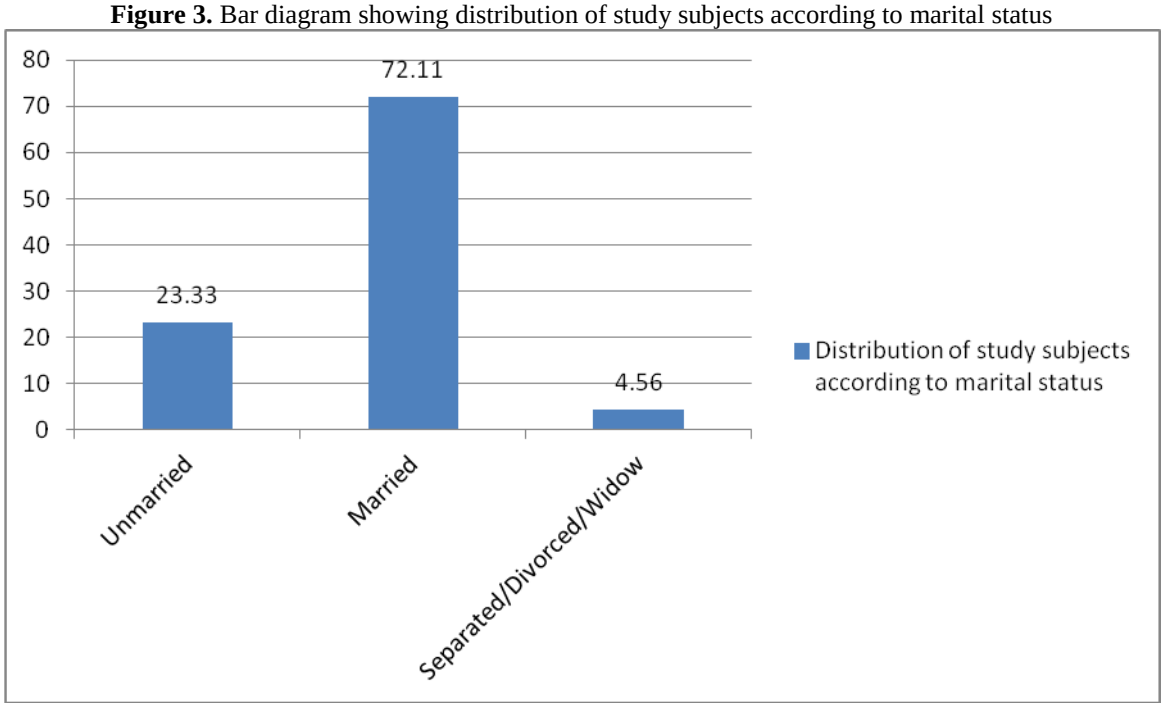


Table 1.9 Distribution of study subjects according to duration of marital life (n=319)

Duration of marital life	No.	Percentage
< 1 year	11	3.4
1 – 5 year	64	20.1
>5 years	244	76.5
Total	319	100

About three-fourth of the total 319 married study subjects, 76.5% were married for more than five years, 20.1% were married for 1-5 years and 3.4% were married for less than one year.

Table1.10. Distribution of study subjects according to age at marriage (n=319)

Age at marriage	No.	Percentage
Below 18 years	254	79.6
18 years and above	65	20.4
Total	319	100

Out of total 319 married study subjects, most of them i.e 79.6 % were married before 18 years of age and 20.4% were married after18 years .

Table1.11. Distribution of study subjects according to parity (n=319)

Parity	No.	Percentage
None	28	8.7
1 – 2	189	59.3
3 – 5	96	30.1
>5	6	1.9
Total	319	100

Among the study subjects 59.3 % had 2or less than 2 deliveries and 32 % had more than 2 deliveries.

Table1.12. Distribution of study subjects according to place of delivery (n=291)

Place of delivery	No.	Percentage
Home	35	12.0
Institutional	206	70.8
Both	50	17.2
Total	291	100

Out of 291 parous study subjects,12.0% had home delivery,70.8 % had institutional delivery and 17.2 % had both home and institutional delivery.

Table1.13. Distribution of study subjects according to number of abortion (n=319)

Number of abortion	No.	Percentage
0	243	76.2
1	45	14.1
>= 2	31	9.7
Total	319	100

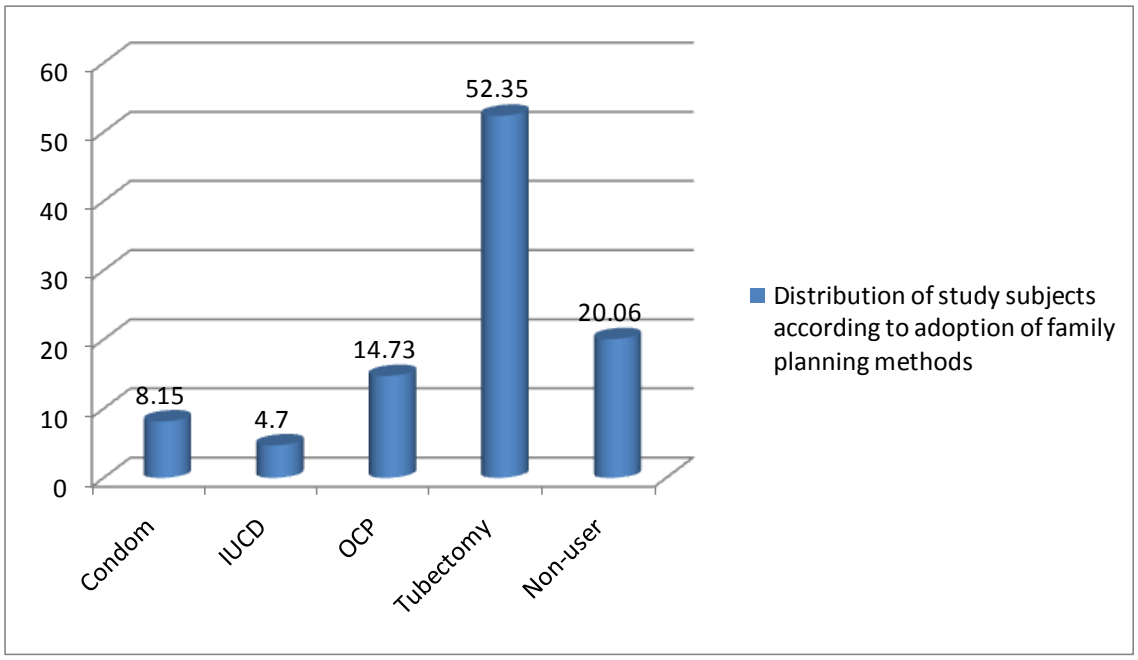
About three-fourth of the total 319 married study subjects, 76.2% had no history of abortion, 14.1 % had 1 abortion and 9.7 % had 2or more than 2 abortions.

Table 1.14. Distribution of study subjects according to adoption of family planning method (current) (n=319)

Family planning method	No.	Percentage
Condom	26	8.2
IUCD	15	4.7
OCP	47	14.7
Tubectomy	167	52.3
Non-user	64	20.1
Total	319	100

Out of the total 319 married study subjects, more than half,52.3% had Tubectomy done , 20.1 % do not adopt any family planning method , 14.7 %, 8.2 % and 4.7 % uses OCP, Condom and IUCD respectively.

Figure 4. Bar diagram showing distribution of study subjects according to adoption of family planning methods



2.Symptoms Of Reproductive Tract Infection

Table2.1 Distribution of study subjects according to presence of reproductive tract infection (n=416)

Presence of reproductive tract infection	No.	Percentage
Yes	175	42.1
No	241	57.9
Total	416	100

42.1% of the total respondents had any kind of reproductive tract infection in last twelve months.

Figure 5. Histogram showing age distribution of the study subjects according to presence of reproductive tract infections.

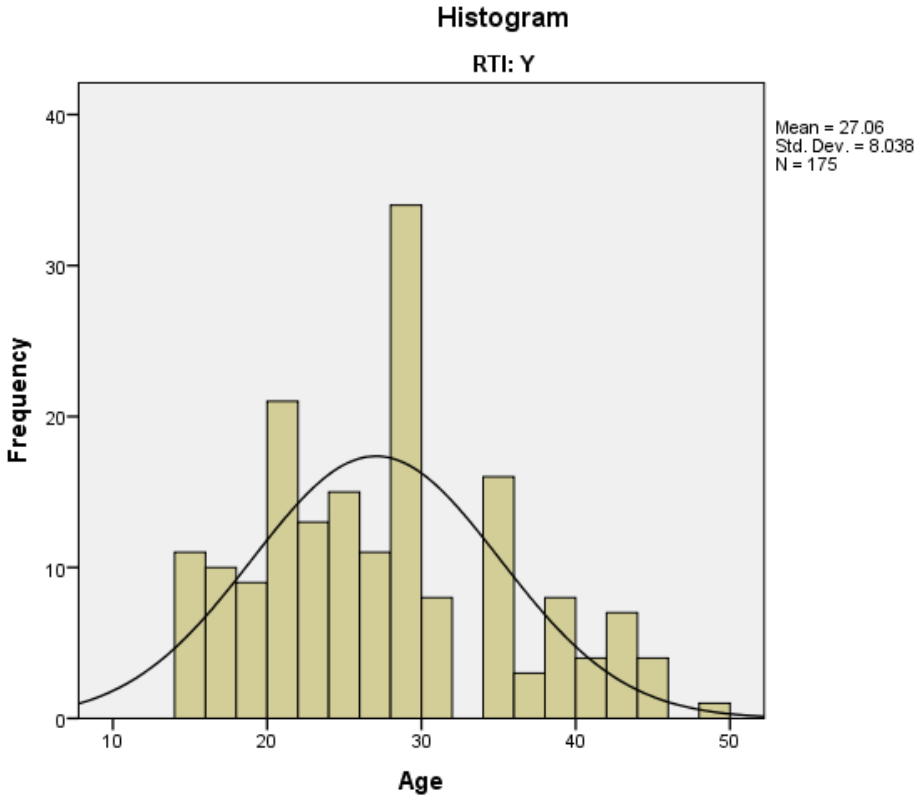


Figure 6. Histogram showing age distribution of the study subjects according to absence of reproductive tract infection.

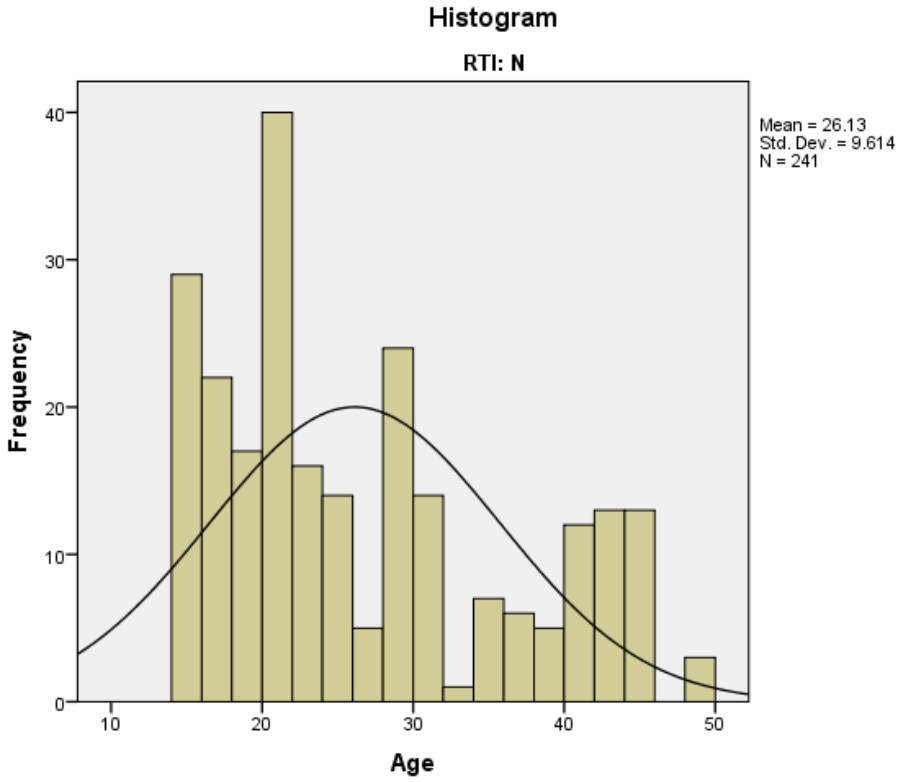
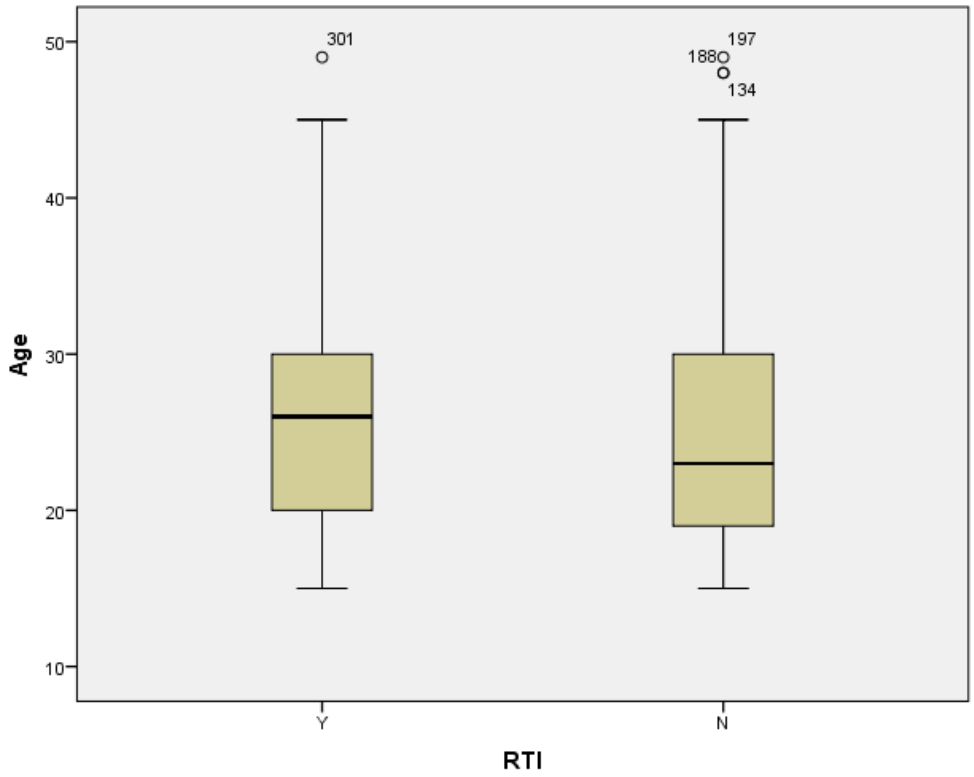


Figure 7. Box and Whisker plot showing age distribution of study subjects according to presence or absence of reproductive tract infections.



Median age of study subjects in whom RTI was present is 26 years and Interquartile range is 20 years to 30 years.

Median age of study subjects in whom RTI was absent is 23 years and Interquartile range is 19 years to 31 years.

Table 2.2. Distribution of study subjects according to reproductive tract infection by syndromic approach based on reported symptoms.(n=416)

Symptoms	No.	Percentage
Vaginal discharge	175	42.1
Lower abdominal pain	56	13.5
Lesion over genital area	2	0.5
Inguinal swelling	2	0.5
Total(Reported RTI symptoms)	235	56.5
No symptoms	241	57.9

Among the 416 study subjects, 42.1 % had vaginal discharge syndrome and 13.5 % have lower abdominal pain syndrome .0.5 % have lesion over genital area and in 0.5 % inguinal swelling found. Total reported RTI symptoms were 56.5 % . 57.9 % were asymptomatic. All the study subjects who were symptomatic had vaginal discharge.

Table2.3. Distribution of study subjects according to symptoms of reproductive tract infection as expressed by them (n=416)

Reproductive tract infection symptoms	No.	Percentage
Abnormal vaginal discharge	175	42.1
Abnormal excessive vaginal discharge (n=175)	102	58.3
Foul smell (n=175)	5	2.9
Yellow-green (n=175)	3	1.7
Thick or frothy (n=175)	65	37.1
Vulval itching	60	14.4
Low back ache	112	26.9
Lower abdominal pain	55	13.2
Associated fever	39	9.4
Lesion over genital area	3	0.7
Inguinal swelling	2	0.5
Urinary symptoms	31	7.5
Menstrual disturbances	15	3.6
Painful coitus	12	2.9
Painful menstruation	47	11.3
Primary infertility	14	3.4
Secondary infertility	11	2.6

(Multiple response)

175 respondents who had any kind of reproductive tract infection were asked about the type of reproductive tract infection. Abnormal vaginal discharge was predominant symptom among 175(42.1%) individuals , 14.4% had vulval itching, while 26.9 % complains of low back ache. 14.4% had lower abdominal pain and 9.4 % had associated fever. 0.7% had lesion over genital area and 0.5 % had inguinal swelling .Urinary symptoms were complained by 7.5% respondents.

3. Association Between Study Suject's Socio-Demographic, Reproductive Characteristics And Reproductive Tract Infection

Table3.1. Association of study subject's age group and presence of reproductive tract infection

Age group (years)	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
15-19	30(30.6)	68(69.4)	98(100)	11.461	3	0.009
20-29	95(49.2)	98(50.8)	193(100)			
30-39	31(45.6)	37(54.4)	68(100)			
40-49	19(33.3)	38(66.7)	57(100)			
Total	175(42.1)	241(57.94)	416(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in 20-29 years age group and significant statistical association was observed between the age group and presence of reproductive tract infection.

Table 3.2. Association of study subject's religion and presence of reproductive tract infection

Religion	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
Hindu	130(41.8))	181(58.2)	311(100)	0.687	2	0.709

Muslim	40(44.5)	50(55.5)	90(100)			
Christian	5(33.3)	10(66.7)	15(100)			
Total	175(42.1)	241(57.9)	416(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in Muslims in comparison to Hindu and Christian study subjects but statistically not significant.

Table 3.3. Association of study subject 's caste and presence of reproductive tract infection

Caste	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
General	32(36.4)	56(63.6)	88(100)	1.2078	1	0.271
SC ,ST,OBC	143(43.6)	185(56.4)	328(100)			
Total	175(42.1)	241(57.9)	416(100)			

Fig. in parenthesis indicate percentage

Comment: Reproductive tract infection was less in General caste in comparison to other castes but statistically not significant.

Table 3.4. Association of study subject's educational status and presence of reproductive tract infection

Educational Status	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
Illiterate	66(51.9)	61(48.1)	127(100)	6.78	6	0.009
Just literate	8(50)	8(50)	16(100)			
Primary	51(41.5)	72(58.5)	123(100)			
Mid-school	16(35.5)	29(64.5)	45(100)			
Secondary	28(32.9)	57(67.1)	85(100)			
Higher secondary	5(31.3)	11(68.7)	16(100)			
Graduate and above	1(25)	3(75)	4(100)			
Total	175(42.1)	241(57.9)	416(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in study subjects who were illiterate in comparison to women who were literate and showed a decreasing trend with increase in literacy status. Significant statistical association was found between presence of reproductive tract infection and educational status.

Table 3.5. Association of study subject's socio –economic status and presence of reproductive tract infections

Socio- economic Status	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
SES-III	6(27.3)	16(72.7)	22(100)	3.177	2	0.204
SES-IV	67(39.8)	101(60.2)	168(100)			
SES-V	102 (45.1))	124(54.9)	226(100)			
Total	175(42.1)	241(57.9)	416(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in SES-V or lower group in comparison to other groups and showed an increasing trend with the decrease in socio-economic class but statistically not significant.

Table 3.6. Association of study subjects's occupation and presence of reproductive tract infections

Occupation	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
Home maker	145(44.6)	180(55.4)	325(100)	5.194	2	0.074
Employed	12(41.4)	17(58.6)	29(100)			
Student	18(29)	44(71)	62(100)			
Total	175	241	416(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in homemakers in comparison to other groups but statistically not significant.

Table 3.7 Association of study subjects's marital status and presence of reproductive tract infections

Marital Status	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
Unmarried	29(29.9)	68(70.1)	97(100)	7.799	2	0.02
Married	138(46)	162(54)	300(100)			
Widow/separated/divorced	8(42.1)	11(57.9)	19(100)			

Total	175(42.1)	241(57.9)	416(100)			

Fig. in parenthesis indicate row percentage

Reproductive tract infection was more in currently married study subjects in comparison to others. Significant statistical association was found between presence of reproductive tract infection and marital status.

Table 3.8 . Association of study subject's menstrual hygiene and presence of reproductive tract infection

Menstrual hygiene	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
Sanitary pads	11(23.9)	35(76.1)	46(100)	7.282	2	0.026
Clothes	147(44.8)	181(55.2)	328(100)			
Sanitary pads & clothes	17(40.5)	25(59.5)	42(100)			
Total	175(42.1)	241(57.9)	416(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in study subjects using clothes during menstruation than who uses sanitary pads or both. Significant statistical association was found between presence of reproductive tract infection and menstrual hygiene

Table 3.9. Association of study subjects 's duration of marital life and presence of reproductive tract infection

Duration of marital life	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
<5 yrs	26(34.7)	49(65.3)	75(100)	4.301	1	0.038
>5 yrs	120(49.2)	124(50.8)	244 (100)			
Total	146(45.8)	173(54.2)	319 (100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in greater than 5 years duration of marital life in comparison to less than 5 years duration of marital life .Significant statistical association was found between presence of reproductive tract infection and duration of marital life .

Table3.10. Association of study subject's age at marriage and presence of reproductive tract infection

Age at marriage	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
Below 18 years	132(51.9)	122(48.1)	254(100)	18.101	1	0.0000
18 years and above	14 (21.5)	51(78.5)	65 (100)			
Total	146(45.8)	173(54.2)	319 (100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in study subjects who were married before 18 yrs of age than after 18 years .Significant statistical association was found between presence of reproductive tract infection and age at marriage.

Table3.11. Association of study subject's parity and presence of reproductive tract infection

Parity	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
=< 2	90 (41.5)	127(58.5)	217(100)	4.5135	1	0.03
>2	56 (54.9)	46(45.1)	102 (100)			
Total	146(45.8)	173(54.2)	319 (100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in study subjects with greater than 2 children than in nulliparous or less than 2 children .Significant statistical association was found between presence of reproductive tract infection and parity.

Table 3.12 Association of study subject's place of delivery and presence of reproductive tract infections

Place of delivery	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
Home	22(62.9)	13(37.1)	35(100)	6.380	2	0.041
Institutional	89(43.2)	117(56.8)	206(100)			
Both	18(36)	32(64)	50(100)			
Total	129(44.3)	162(55.7)	291(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in study subjects who had home deliveries than who had institutional deliveries. Significant statistical association was found between presence of reproductive tract infection and place of delivery.

Table 3.13 Association of study subject's number of abortions and presence of reproductive tract infections

Number of abortions	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
0	92(37.9)	151(62.1)	243(100)	27.639	2	0.000
1	29(64.4)	16(35.6)	45(100)			
>=2	25(80.7)	6(19.3)	31(100)			
Total	146(45.8)	173(54.2)	319(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in study subjects with 2 or more than 2 abortions than with 1 or no abortion. Significant statistical association was found between presence of reproductive tract infection and number of abortions.

Table 3.14. Association of study subject's adoption of family planning methods and presence of reproductive tract infection

Adoption of family planning methods	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
Non-invasive	53(38.7)	84(61.3)	137(100)	4.3648	1	0.036
Invasive	93(51.1)	89(48.9)	182(100)			
Total	146(45.8)	173(54.2)	319(100)			

Fig. in parenthesis indicate percentage Non-invasive : Non-users ,OCP& condom
Invasive: IUCD &Tubectomy

Reproductive tract infection was more in study subjects adopting invasive methods of family planning than with non-invasive methods. Significant statistical association was found between presence of reproductive tract infection and adoption of family planning methods.

Table 3.15. Association of study subject's adoption of family planning methods and presence of reproductive tract infection

Adoption of family planning methods	Reproductive tract infection			Chi-square value	df	P value
	Present	Absent	Total			
User	104(40.8)	151(59.2)	255(100)	11.737	1	0.001
Non-user	42(65.6)	22(34.4)	64(100)			
Total	146(45.8)	173(54.2)	319(100)			

Fig. in parenthesis indicate percentage

Reproductive tract infection was more in study subjects not using any family planning methods than the users. Significant statistical association was found between presence of reproductive tract infection and adoption of family planning methods .

4.Knowledge Regarding Reproductive Tract Infection

Table 4.1 Distribution of study subjects according to awareness of reproductive tract infection (n=416)

Aware of RTI	No.	Percentage
Yes	294	70.7
No	122	29.3
Total	416	100

Among 416 women 70.7% of the study subjects had heard of reproductive tract infection and the rest did not heard about it.

Table 4.2. Distribution of study subjects according to awareness of common symptoms of reproductive tract infection (n=294)

Aware of common symptoms of RTI	No.	Percentage
White discharge	234	79.6
Itching	208	70.7
Burning sensation during micturition	68	23.1
Irregular menstruation	94	32
Lower abdominal pain	135	45.9
Associated fever with lower abdominal pain	44	15
Genital ulcer	12	4.1

Swelling in the groin	6	2
Don't know	59	20.1

If aware of one symptom, then taken as yes. (Multiple response)

Among 294 subjects, 79.6 % responded white discharge as a symptom of reproductive tract infection, 70.7% said itching as symptom,23.1% and 32 % responded burning sensation during micturition and irregular menstruation respectively. Lower abdominal pain was said by 45.9 % as symptom while fever, genital ulcer and swelling in the groin by 15 %, 4.1 % and 2 % respectively. 20.1 % did not know any symptom .

Table .4.3. Distribution of study subjects according to knowledge regarding ill-effects of reproductive tract infection on health (n=294)

Knowledge regarding ill-effects of reproductive tract infection on health	**No.**	**Percentage**
Cancer uterus	198	67.4
Increased menstrual bleeding	144	48.9
Damage to the child	66	22.4
Chronic abdominal pain	73	24.8
Problems during pregnancy	55	18.7
Still birth	58	19.7
Don't know	96	32.6

(Multiple response)

Out of 294 study subjects, 67.4% responded cancer uterus as ill-effect of reproductive tract infection on health. Increased menstrual bleeding was responded by 48.9 % while damage to the child and chronic abdominal pain responded by 22.4% and 24.8 % respectively.18.7 % said problem during pregnancy can occur while 19.7 % said still-birth as ill-effect.32.6 % did not know any ill-effects of reproductive tract infection.

Table 4.4. Distribution of study subjects according to knowledge regarding mode of transmission of reproductive tract infection (n=294)

Knowledge regarding mode of transmission of reproductive tract infection	**No.**	**Percentage**
Infected partner	118	40.1
Lack of personal hygiene	112	38.1
Needles/blade/skin puncture	20	6.8
Mother to child	76	25.8
Transfusion of infected blood	32	10.9
Don't know	182	61.9

(Multiple response)

Among 294 respondents, 40.1% said infected partner as mode of transmission while 38.1% said lack of personal hygiene.25.8 % and 10.9 % responded mother to child and transfusion of infected blood. Needles/blade/skin puncture said by6.8% and 61.9% do not know the mode of transmission of reproductive tract infection.

Table4.5. Distribution of study subjects according to knowledge regarding prevention of reproductive tract infection (n=294)

Knowledge regarding prevention of reproductive tract infection	**No.**	**Percentage**
Yes	220	74.8
No	42	14.3
Don't know	32	10.9
Total	294	100

Out of 294 study subjects ,74.8% regarded reproductive tract infection can be prevented while 14.3 %said that reproductive tract infection cannot be prevented and 10.9% did not know that reproductive tract infection can be prevented.

Table 4.6. Distribution of study subjects according to mode of prevention of reproductive tract infection (n=220)

Knowledge on mode of prevention of the disease	**No.**	**Percentage**
Maintain hygiene of genitalia	101	45.9

Avoiding sex with infected partner	46	20.9
Using condoms during intercourse	75	34.1
Not taking hot foods	10	4.5
Safe delivery practices	8	3.6
Permanent contraceptive methods	12	5.5
Don't know	92	41.8

(Multiple response)

Among 220 study subjects ,45.9% said that maintaining hygiene of genitalia as mode of prevention of reproductive tract infection.34.1% and 20.9% said using condoms during intercourse and avoiding sex with infected partner as mode of prevention while 4.5%, 3.6% and 5.5% said not taking hot food , safe delivery practices and using permanent contraceptive methods as preventive mode respectively.41.8% did not know how to prevent reproductive tract infection.

Table4.7. Distribution of study subjects according to awareness of necessity of treatment(n=294)

Aware of necessity of treatment	No.	Percentage
Yes	140	47.6
No	45	15.3
Don't know	109	37.1
Total	294	100

Out of 294 respondents, 47.6% said that treatment was necessary while 15.3% said that no treatment was required.37.1 % did not know whether treatment was required.

Table4.8. Distribution of study subjects according to awareness of necessity of treatment of partner (n=294)

Aware of necessity of treatment of partner	No.	Percentage
Yes	56	19.1
No	48	16.3
Don't know	190	64.6
Total	294	100

19.1% out of 294 study subjects said that treatment of partner was necessary and 16.3% responded no partner treatment was required. 64.6% did not know whether partner treatment was necessary.

5.Health-Seeking Behaviour

Table 5.1. Distribution of study subjects according to place of seeking health care (n=175)

Place of seeking health care	No.	Percentage
Private medical facility	42	24
Govt. medical facility	22	12.6
Pharmacy	32	18.3
Advice from traditional healer	21	12
Others(homeopathy, ayurvedic)	40	22.9
No treatment	86	49.1

(Multiple response)

Out of 175 symptomatic study subjects , 49.1% did not go for any treatment. Among those who had treatment , 24% went to private medical facility, 12.6% went to Govt. Medical facility while 22.9 % consulted homeopathy or ayurvedic.13.7 % went to pharmacy while 12% took advice from traditional healer respectively.

Table 5.2. Distribution of study subjects to reasons for not taking any treatment (n=86)

Reasons for not taking any treatment	No.	Percentage
Perceived lack of severity	58	67.4
Financial problems	13	15.1
No problem with routine activities	9	10.5
Symptoms persisted for few days	6	6.9
Total	86	100

Among 86 study subjects who did not take any treatment , 67.4% said that lack of severity as reason for not taking any treatment. 15.1%, 10.5 % and 7 % responded financial problems, no problem with routine activities and symptoms were for a short duration as reasons for not taking any treatment.

6. Association (Or) Of Reproductive Tract Infections With Socio-Demographic Characteristics Of The Study Subjects By Logistic Regression

Variable(s)	OR (95% CI)	P value	Adjusted OR (95 % CI)	P value
Age(years)				
<30	Ref.		Ref.	

>=30	1.014(.995-1.034)	.143	.944 (.905-.985)	**.008**
Educational status				
Illliterate	Ref.		Ref.	
Just Illiterate & Primary	.645(.421-.988)	.044	.853(.499-1.459)	.561
Mid school& Secondary	.621(.400-.966)	.034	.573(.306-.970)	**.041**
H.S ,Graduate and above	.675	.369	.796(.269-2.360)	.681
Menstrual hygiene				
Clothes	Ref.		Ref.	
Sanitary pads	.483(.259-.900)	.022	.404(.196-.831)	**.014**
Both	.977(.543-1.755)	.937	1.296(.638-2.634)	.474
Marital status				
Unmarried	Ref.		Ref.	
Married	2.017(1.314-3.095)	.001	1.322(1.620-2.728)	**.021**
Widow/Div./Sep.	2.395(.95-5.994)	.062	.145(.017-1.246)	.079
Marital duration				
<1 year	Ref.		Ref.	
1-5 years	2.444(.635-9.414)	.194	5.199(.957-28.243)	.056
>5 years	3.481(.952-12.722)	.059	13.080(2.267-75.465)	**.004**
Parity				
None	Ref.		Ref.	
=<2	1.150(.763-1.73)	.504	.814(.476-1.456)	.062
>2	2.142(1.339-3.427)	.001	1.336(1.179-1.632)	**.001**
Age at marriage				
Below 18 years	Ref.		Ref.	
Above 18 years	.274(.162-.464)	.000	.193(.101-.368)	**.000**
Place of delivery				
Home	Ref.		Ref.	
Institutional	.319(.142-.718)	.006	.087(.032-.240)	**.042**
Both	.530(.275-1.023)	.058	.481(.218-1.062)	.070
History of abortions				
No	Ref.		Ref.	
Yes	2.278(1.611-3.220)	.000	2.050(1.334-3.149)	**.001**
Contraceptive practice				
None	Ref.		Ref.	
Condom	.542(.229-1.286)	.165	.145(.044-1.072)	.081
IUCD	1.186(.415-3.391)	.750	1.300(1.101-1.744)	**.036**
OCP	1.186(.667-2.109)	.561	.777(.329-1.835)	.565
Tubectomy	.967(.660-1.416)	.862	.307(.147-1.240)	.242

The prevalence of self-reported RTIs was observed to be .944 times among older women (≥30 years) as compared to young women <30 years of age

The risk of RTI is .573 times in women who have studied till secondary level as compared to illiterate women.

The risk of RTI is .404 times in women who used sanitary pads during menses compared to those who used clothes.

The odds of having RTI are 1.322 times higher in married women as compared to the unmarried ones.

Women who were married for more than 5 years have higher odds(13.08) of having RTI compared to women married for less than 1 year.

Women who have more than 2 pregnancies have higher odds(1.336) of having RTI as compared to nulliparous women.

The risk of RTI is .193 times in women married above 18 years of age as compared to women married before 18 years of age.

The risk of RTI is .087 times in women who had institutional delivery as compared to women who had home delivery.

The odds of having RTI are 2.050 times higher in women having history of abortions as compared to women without any history.

The risk of RTI is .145 times in women whose husband use condoms as compared to women who do not use any contraceptives. Women who used IUCD as contraceptives have higher odds (1.300) of having RTI as compared to women not using any contraceptives.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	105.700	20	.000
	Block	105.700	20	.000
	Model	105.700	20	.000

Model chi-square 105.7 (p = 0.000) which implies that the model is fit to predict RTI.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	460.483[a]	.224	.302

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	22.590	8	.004

The present study , a cross-sectional , community based descriptive epidemiological study , was carried out on the reproductive age group women at the slums of Burdwan Municipality in Burdwan district of West Bengal during 2014-2015.

416 reproductive age group women finally participated in this study.The socio-demographic and reproductive characteristics with pattern of reproductive tract infection were elicited from the women with the help of interview and review of relevant records.

The objectives of the study were:

1) To determine the prevalence of reproductive tract infections among women of reproductive age group in slums of Burdwan Municipal area by syndromic approach.

2) To determine association between the reproductive tract infections and socio-demographic profile and reproductive characteristics

3) To assess the knowledge regarding reproductive tract infections of the study population

4) To assess the health –seeking behaviour for reproductive tract infections of the study population.

Socio-demographic characteristics of the study subjects:

In the present study , out of the 416 study subjects, 46.4 % of the study subjects belonged to the age group of 20-29 years.

23.6% and 30.05%% belonged respectively to the age group of <20 years and >29 years. Mean age of study subjects is 26.4 years.SD (+- 8.987 years).

Majority of study subjects belonged to the Hindu religion (74.8%) , 21.6% and 3.6% belong to Muslim and Christian religion respectively.

Out of the 416 study subjects, , 65.9% women belonged to the schedule caste, 21.1% belonged to the general caste, 3.4% to the schedule tribe and 9.6% to the other backward classes.

Among the study subjects 78.1% were homemakers , 7 % of women were employed and 14.9 % were student.

Out of the 416 study subjects ,127 (30.5%) were illiterate , 16 (5.8%) were just literate and 273 (i.e 63.7%) were literate of which 29.4% were educated upto primary level,10.8% were educated upto mid-school, 22.4% were educated upto secondary , 2.2% studied upto higher secondary and 0.9 % upto graduation.

Out of 416 of study subjects, 54.3% belonged to SES-V , 42.1% belonged to SES-IV and 3.6% to SES- III.

Out of the total 416 study subjects 72.1% were married. A few of them i.e. 4.6% ere either separated, divorced or widow. 23.3% of the total women were unmarried.

About three-fourth of the total 319 married study subjects, 76.5% were married for more than five years, 23.5% were married for less than five years.

Out of total 319 married study subjects, most of them i.e 79.6 % were married before 18 years of age and 20.4% were married after18 years.

Reproductive characteristics of the study subjects:

Among the 319 study subjects ,59.3 % had 2or less than 2 deliveries and 32 % had more than 2 deliveries.

Out of 291 parous study subjects,12.0% had home delivery,70.8 % had institutional delivery and 17.2% had both home and institutional delivery.

About three-fourth of the total 319 married study subjects, 76.2% had no history of abortion, 23.8% had history of abortion.

Menstrual hygiene and adoption of family planning of the study subjects:

Among the total 416 study subjects, 78.8 % uses only clothes , 11.1 % uses sanitary pads and 10.1 % uses both sanitary pads and clothes.

Out of the total 319 married study subjects, more than half,52.3% had Tubectomy done , 20.1% do not adopt any family planning method , 14.7 %, 8.2% and 4.7% uses OCP, Condom and IUCD respectively.

Prevalence of Reproductive tract infections symptoms:

42.1% of the total respondents i.e. 175 had any kind of reproductive tract infection in last twelve months and rest 57.9% had no reproductive tract infection.

42.1 % had vaginal discharge syndrome and 13.5 % have lower abdominal pain syndrome . 0.5 % have lesion over genital area and in 0.5 % inguinal swelling found. Total reported RTI symptoms were 56.5 % . All the study subjects who were symptomatic had vaginal discharge. In a study by A.Parashar in Shimla town ,[67] the prevalence of various RTI syndromes i.e vaginal discharge was 16.2 %, pelvic inflammatory disease was 18% ,genital ulcer disease was 1.5 % and inguinal bubo was 0.7 %. In another study by S Sharma et al. [59]Vaginal discharge 51.9% had vaginal discharge, 19.9% had lower abdominal pain, genital ulcer disease 1.1% and inguinal lymphadenopathy 0.4%. Almost similar findings as in this present study were observed by M Bote et al. [27] in Mumbai where prevalence of vaginal discharge syndrome was 44.2%, lower abdominal pain 13.6% , lesion over genital area 1.0 % and inguinal swelling 0.8%.

The prevalence of symptoms suggestive of RTIs/STIs in the study population (42.1 %) was almost similar as compared with what has been documented in other studies from India; In Hubli ,Karnataka [39] the prevalence of RTIs was 40.4% based on their symptoms .In Delhi slum,[35] the prevalence was 43.9% and in a study in Kolkata slum[38] it was 43.3%.In a study in Mumbai slums[27] the prevalence was 50% based on symptoms but on the higher side as compared to in (27%) urban women of Agra district of Uttar Pradesh[41]; 35.6% in reproductive age women living in urban slums of Tirupati, Andhra Pradesh [30]; 32% in urban women in Sundergarh district of Orissa [71]; and 27.8% in Punjab.[14-17] . In Lagos ,Nigeria [18] the prevalence of RTI was 37.4%. In Khulna city ,Bangladesh [37] the prevalence was 72.6%.. In Papua New Guinea [16], 59% of the women studied had lab confirmed STDs in a community-based survey.

175 respondents who had any kind of reproductive tract infection were asked to specify the types of reproductive tract infection. Abnormal vaginal discharge was predominant symptom among 175(42.1%) individuals , 14.4 % had vulval itching, while 26.9 % complains of low back ache. 14.4% had lower abdominal pain and 9.4% had associated fever. 0.7% had lesion over genital area and 0.5% had inguinal swelling .Urinary symptoms were complained by 7.5% respondents.

This is in accordance with the study in Hubli ,Karnataka[39] where majority of women 215 (32.7%) complained of abnormal excessive vaginal discharge followed by low backache 206(31.4%) and lower abdominal pain154(23.5%) and in Mumbai slums[27] the various symptoms reported by women were vaginal discharge (44.2%) and lower abdominal pain (13.6%) .In Delhi slums [35], the symptoms included abdominal pain (68.2%), back pain (69.6%), and vaginal discharge (59.3%). In Khulna , Bangladesh [37] the most common self-reported symptom was vaginal discharge and swelling in the genital area. In Agra[44] commonest symptom of RTI was vaginal discharge (94%) followed by lower abdominal pain (55%).

Association between socio-demographic characteristics and presence of reproductive tract infections:

Maximum number of cases was observed in the age group of 20-29 years (49.22%), which is similar to the study by S Balamurugan in Hubli, Karnataka [39], and significant statistical association was found. Mean age of study subjects in whom RTI was present is 27.06 years. SD(8.038 years) which is almost same from the study of S Balamurugan et al. , where mean age of study subjects with RTI was 26.03 years but differs from the study of Rathore et al.[23], where mean age of study subjects with RTI was 33.59 years . Median age of study subjects in whom RTI was present is 26 years and Interquartile range is 20 years to 30 years.

This study shows a higher prevalence rate of symptoms of RTI among the Muslims (44.5%), than Hindus (41.8%) which may be due to their low socioeconomic condition and poor personal hygiene but not statistically significant which is similar to the study in Hubli [39] (50%vs 33%) and Kolkata [38] (62.5%vs 38.8%) but it was statistically significant.

The highest number of women with the suggestive symptoms of RTI was among the illiterates which that these women were ignorant about the infections and has poor genital and menstrual hygiene and also low health seeking behaviour ,which showed a decreasing trend with increase in literacy status and found to be statistically significant. This is in accordance with B Sridevi et al.[30] but it was not statistically significant.

Reproductive tract infection was more in poor socio-economic class in comparison to other groups and showed an increasing trend with the decrease in socio-economic class but statistically not significant. This is corroborated by the study in Hubli.[76]

The suggestive symptoms of RTI were observed to be less among the employed(41.4%) than the homemakers(44.6%) or students (29.1%). This may be because they contribute to the family income, and can take decisions in the family (e.g. use of condom, sanitary napkins or soap and water etc).

It was found in the study that reproductive tract infection was more in currently married study subjects(46%) in comparison to others (unmarried 29.9% , widow ,divorced, separated 42.1%) as married ones leading active sexual life have more chance of getting RTI and it was statistically significant. Similar finding

have been observed by Rathore et al.[23] where 27.9% of married, 25 % of widows and divorcee and 0.9% had RTI and also by S Balamurugan et al. [39] where 43% married, 11%unmarried and 6% widow/ divorced had RTI.

In this study it was found that with increased duration of marital life, the risk of occurrence of RTI is more(49.2%) than with less than five years duration of marital life(34.7%) due to enhanced sexual activity and significant statistical association found.

In the present study reproductive tract infection was more in study subjects using clothes(44.8%) during menstruation than who uses sanitary pads(23.9%) or both(40.5% and significant statistical association was found ($x2 = 7.282$ $p<0.05$). Adequate menstrual hygiene is crucial for the health of the women. There is imminent need to provide low-cost quality sanitary pads in the community to address the problem of RTIs among women especially in slum dwellers. As seen in the present study, the majority of the women (78.8%) were using cloth during menstruation. This finding is in conformity with that reported by Parashar et al.[32] and Bhilwar et al. [35] ($p <0.001$) , in their study. This is due to facilitated growth of endogenous infections resulting from lack of proper hygienic practices.

The prevalence of RTI was more in those who got married before the age of 18 years(51.9%) than who got married after 18 years (21.5%) and this was statistically significant. This finding is in line with studies conducted by Elahee et al. in Khulna , Bangladesh[37] and Dasgupta et al. [38] Early age at marriage means early sexual activities which causes trauma and promotes future infections.

It is found in this study that reproductive tract infection was more in study subjects with greater than 2 children(54.9%) than in nulliparous or less than 2 children(41.5%) which is statistically significant.

This association may be due to longer periods of unprotected sex as couples seek to conceive and this increases their risks of infection. This finding is comparable to a study done by Dasgupta et al.,[38] which revealed that overall prevalence is observed to be more among women with number of deliveries >2 (59.3%) than those with number of deliveries 1 (43.7%) or with number of deliveries 0 (12.5%). This difference was statistically significant ($p<0.0001$). Similar finding was reported in a study done in Ludhiana by Philip et al.[61] in which it was found that the prevalence of the symptoms increased with parity, with the prevalence of 16.8% in those with parity 1-2 and 18.3% in those with parity3-4.

In this study reproductive tract infection was more in study subjects who had home deliveries (62.9%)than who had institutional deliveries (43.2%) and significant statistical association was found.

This study is in accordance with the study in Khulna, Bangladesh [37] where a higher number of women delivering at home reported symptoms of RTIs than those who had delivery in the institutional setting ($p = .049$) and in a study conducted by Rani et al at Gorakhpur [28], RTI was more in women who delivered at home (41.4%) than who had institutional delivery(28.2%) and this was statistically significant. The reason can be lack of safe delivery practices by the untrained traditional midwives or family members who perform the delivery.

In the present study reproductive tract infection was more in study subjects with 2 or more than 2 abortions(80.7%) than with 1(64.4%) or no abortion(37.9%) and this was statistically significant. This finding is in line with a study by G Mani in Tamil Nadu [72] where RTI was more (36.2%) in women who had history of abortions than with no abortion (32.1%). The procedure adopted for abortion to clean the uterus could at times be responsible for causing certain infections of the reproductive tract.

In the present study ,reproductive tract infection was more in study subjects adopting invasive methods of family planning(IUCD and Tubectomy- 51.1%) than with non-invasive methods(OCP, condom and non-user-38.7%) and significant statistical association was found . Study by Rathore et al. [23] have also revealed the similar association i.e.37.6% women using invasive methods have RTI than 22.1% using non-invasive methods($p<0.001$). Barrier contraceptives are known to provide protection against RTI/STI but those using invasive methods of contraception the prevalence is more due to introduction of foreign body in uterine cavity there is more chance of ascending infection from lower genital tract.

Knowledge regarding reproductive tract infection:

Among 416 women 70.7% of the study subjects had heard of reproductive tract infection and the rest did not heard about it.

Only 31 per cent of the respondents were aware about RTIs in a study conducted by Elahee et al. in Khulna ,Bangladesh [37] and SA Rizwan et al. [87]reported that 56.4 % of the study subjects had heard of RTI in a study in rural Haryana. Most of the women were aware of RTIs/STDs (80.3%) in urban areas in a study conducted by Singh et al.[46] KP Thekdi et al.[47] in a rural area of Surendranagar of Gujrat reported that awareness about RTI amongst reproductive age group of women was 64.0% . Similar studies conducted in Nigeria, rural West Bengal and Kenya were 77.2%, 57% and 96% respectively [31,33,48]. We can see the variability of results in the various studies like a "KAP" study was carried out by M. Mittal et al [49] and this study reveals the perception of women of a urban slum in Delhi, 34.3% women were aware about STDs and another study carried out in the urban slum of Lucknow by Martolia D S et al.[50] among slum dwellers and it was observed that 73.3% know about these diseases.

In this study among 294 subjects who were aware of RTI , 79.6 % responded white discharge as a symptom of reproductive tract infection, 70.7 % said itching as symptom,23.1% and 31.9 % responded burning sensation during micturation and irregular menstruation respectively. Lower abdominal pain was said by 45.9 % as symptom while fever, genital ulcer and swelling in the groin by 15 %, 4.1 % and2 % respectively. 20.1 % did not know any symptom. These are multiple response.

SA Rizwan et al. reported the about 11% women said that they did not know the symptoms. Among those who knew about symptoms, most common (19%) response was white discharge per vaginum, followed by foul smell of vaginal discharge (14.5%). About 23% gave multiple answers (i.e. pain, vaginal discharge, foul smell).

In a study in Tamil Nadu by RP Ravi et al thick white discharge' was the most familiar RTIs symptom known by the majority of women (85.5%), followed by the symptom of 'Itching/irritation over vulva' (76.7%). More than forty percent of the SC women were aware that 'Pain in lower abdomen' was a symptom of RTIs (44.2%). 'Boils/ulcer around vulva' was identified as a symptom of RTIs by (35.5%) and (30.2%) of women recognized that 'Pain during urination' was a symptom of RTIs and one-fourth of women accepted that 'Swelling in the groin' was also a symptom of RTIs (25.6%).

In this study regarding knowledge regarding ill-effects of reproductive tract infection on health, 67.4 % responded cancer uterus as ill-effect of RTI on health. Increased menstrual bleeding was responded by 48.9 % while damage to the child and chronic abdominal pain responded by 22.4% and 24.8 % respectively.18.7 % said problem during pregnancy can occur while 19.7% said still-birth as ill-effect.32.6% did not know any ill-effects of reproductive tract infection. In the study conducted by Rizwan et al.[87] 10.3% told that they did not know of any effect, but around 21% reported that it leads to cancer of uterus, followed by increased menstrual bleeding (15%) and damage to unborn child (12.3%).

In this study, regarding mode of transmission, 40.1% said infected partner as mode of transmission while 38.1% said lack of personal hygiene.25.8 % and 10.9 % responded mother to child and transfusion of infected blood. Needles/blade/skin puncture said by6.8% and homosexual intercourse by 0.3 % and 61.9% do not know the mode of transmission of reproductive tract infection.

In a study conducted by Verma et al [36] in Delhi ,when participants were asked about the possible ways of contracting the disease, 34.9% of women living in urban area and 20% of rural women replied that disease is acquired from infected partner. Almost similar finding as reported in Surat,[60] in which 22% of rural and 41% of urban area replied infected partner is the source of infection .Unhygienic conditions were reported to be the cause of RTI/STI symptoms by 37% of rural women and 25% of urban respondents.

Singh et al [46] reported that the women of the urban areas told that RTIs/STDs are mainly transmitted through heterosexual (65.1 %) and then through lack of hygiene (43.8%), mother to child (36.1 %), blood transfusion (15.3 %), needles/blades/skin puncture (14.1%) and 65.5 % responded that they don't know the mode of transmission of RTIs/STDs .

In the present study ,74.8 % regarded that reproductive tract infection can be prevented while 14.3 % said that reproductive tract infection cannot be prevented and 10.9% did not know that reproductive tract infection can be prevented.

About 82% reported that RTIs were preventable in a study conducted by SA Rizwan et al.[45]

In this study among 220 study subjects ,45.9% said that maintaining hygiene of genitalia as mode of prevention of reproductive tract infection.34.1 % and 20.9% said using condoms during intercourse and avoiding sex with infected partner as mode of prevention while 4.5%, 3.6% and 5.4%5% said not taking hot food , safe delivery practices and using permanent contraceptive methods as preventive mode respectively.41.8 % did not know how to prevent reproductive tract infection.

SA Rizwan et al [45] in a study in rural Haryana found that most commonly stated preventive measures were condom use during sexual intercourse (42.1%) and maintaining hygiene of the genitalia (15%). A few women said that it can be prevented by avoiding hot foods, or by permanent contraceptive methods.

In another study by Kosambiya et al.[60] about 26% reported that the disease can be prevented by use of condoms, while 26% replied that it can only be prevented if the cases are treated well, an equal number of respondents, 265 said that the treatment of partners is equally important for the prevention of disease. Maintaining monogamous relationship was reported as an important way of prevention of disease by 19% of women.

In this study out of 294 respondents, 47.6% said that treatment was necessary while 15.3 % said that no treatment was required.37.1 % did not know whether treatment was required but in a study by KP Thekdi et al,[47] 75.3% of women said that treatment should be taken.

Among women who had heard about STI/RTI, 75% said that it was treatable as reported by SA Rizwan et al.[45]

In the present study ,19.04% out of 294 study subjects said that treatment of partner was necessary and 16.3 % responded no partner treatment was required. 64.6 % did not know whether partner treatment was necessary.

When asked whether treatment of husbands was required if wife was suffering from RTI, 81.5% gave a positive response by Rizwan et al.[45]

In this study out of 175 symptomatic study subjects , 49.1% did not go for any treatment. Among those who had treatment , 24% went to private medical facility, 12.6 % went to Govt. Medical facility while 22.9 % consulted homeopathy or ayurvedic.13.7 % went to pharmacy while 4.6 % and 12% had medicine from home or took advice from traditional healer respectively.

In a study by Verma et al.[36] out of the 91 symptomatic women in urban area, 66 (73%) sought treatment, 46 (70%) consulted private practitioner, and 20 (30%) went to a government hospital. In rural area, out of the 90 symptomatic women, 41 (45.6%) sought treatment, 21 (51%) consulted private practitioner, and 20 (49%) went to a government hospital.

In another study by Kosambiya et al.[60] out of 45 women having symptoms of RTI/STI, 21(21%) reported consulted Government hospitalfor seeking treatment, while only 9(9%) consulted private hospital, 3(3%) took self treatment while 11(11%) did not take any treatment for RTI/STI.

In a study by Rizwan et al.[45]only about 40% said they had taken any treatment .

Health seeking attitude of women regarding reproductive tract infections in women is 75.3% which is good and majority of them preferred to take treatment from doctors the reason for that information available through peripheral health workers and during routine ANC visits also the information regarding the prevention and timely treatment are also provided. Almost 24.7% of women reported that treatment should not be taken because of social reason and personal reason for that still IEC activities are promoted and stigma related to reproductive tract infections should be taken into consideration because it directly affects the health-seeking attitude of the patients especially women as observed by KP Thekdi et al.[47]

In this study among 86 study subjects who did not take any treatment , 67.4% said that lack of severity as reason for not taking any treatment. 15.1%, 10.5 % and 7 % responded financial problems, no problem with routine activities and symptoms were for a short duration as reasons for not taking any treatment.

This finding corroborates with the study done by Rizwan et al. [45] The reasons given by women for not taking any treatment were perceived lack of severity (71%) and financial problems (17%) and other reasons such as having no problem with routine activity and symptoms persisting just for a few days.

The prevalence of self-reported RTIs was observed to be .483 times among older women (≥30 years) as compared to young women <30 years of age . In a study by Desai et al. [53]similar finding was observed where older women (age 35 years and above) have 12 percent less chance of such morbidity as compared to the adolescent women (age 15-24 years), but in a study by Bhilwar et al.[35] older women (age 25 years and above)had higher odds of having RTI.

The risk of RTI is .573 times in women who have studied till secondary level as compared to illiterate women.

This finding is conformity with that reported by Desai et al.[24] where women who have studied upto higher secondary and above level have relatively less chance (15%) of having an RTI/STI as compared to illiterate women.

The risk of RTI is .404 times in women who used sanitary pads during menses compared to those who used clothes. This is supported by Bhilwar et al.[35] that women who used cloth during menses (OR 2.6, 95% CI; 1.6-4.3) have higher odds of having RTI than those using sanitary pads.

The odds of having RTI are 1.322 times higher in married women as compared to the unmarried ones.

Women who were married for more than 5 years have higher odds(13.08) of having RTI compared to women married for less than 1 year.

Women who have more than 2 pregnancies have higher odds(1.336) of having RTI as compared to nulliparous women. Also women having more than three pregnancies (OR 1.8, 95% CI; 1.2-2.6),have higher odds of having RTI was supported in the study conducted by Bhilwar et al. [72] Similar finding was observed by Desai et al. [24]where the chances of such infections increases with higher order births, but in a study conducted by Bote et al.[56]women with gravida status < =2 had higher odds (2.52) of having RTI than that of women with > 2 gravida status.

The risk of RTI is .193 times in women married above 18 years of age as compared to women married before 18 years of age. Desai et al[53] observed that women whose marriage was consummated after the legal age at marriage have eight percent less chance of having such a problem , similar to this study finding.

The risk of RTI is .087 times in women who had institutional delivery as compared to women who had home delivery. In the study by Bote et al.[27] women who had home delivery had higher odds (2.842) of having RTI as compared to women delivering in an institution ,and also Bhawsar et al.[70] found that women who delivered at home had higher odds (1.40) of having RTI compared to women delivering in health facility, which corroborates with the finding of this study.

The odds of having RTI are 2.050 times higher in women having history of abortions as compared to women without any history. Women who have had induced abortion and those who have had spontaneous

abortion had 156 percent and 137 percent higher chance, respectively, of having RTI/STI as found by Desai et al .[24] In a study by Bhawsar et al [70] in Punjab, women who had history of abortion were found to be significantly more likely to have higher odds (1.50) of symptoms of RTI which is similar to this study finding.

The risk of RTI is .145 times in women whose husband use condoms as compared to women who do not use any contraceptives. Women who used IUCD as contraceptives have higher odds (1.300) of having RTI as compared to women not using any contraceptives.

So in the present study, RTIs were found to be significantly associated with the insertion of IUDs. The odds of having RTI among women who had inserted IUD were 2.87 times higher than those not using IUD as observed by Bote et al.[27] Also Bhilwar et al. found similar findings (OR 11.8, 95% CI; 4.3-32.0) which supports the finding of this study.. The increased prevalence in women using IUDs could be due to the improper insertion techniques, including care to ensure sterile conditions, and poor follow-up care after insertion.

Although the findings of the present study are substantiated by other studies , but there are some studies , the findings of which do not corroborate with the findings of this study. This is probably because of the difference in the nature of study technique , sample size, geographical area and the characteristics of the study subjects. Therefore it necessitates further studies in this issue in future.

V. Summary

Every human being has the right to live in an environment with minimum health risks, and to have access to health services that can prevent or alleviate their suffering, treat disease, and help maintain and promote good health throughout the individual's life. Many women, wherever they live in the world, are being denied this basic human right.

Reproductive tract infections are infections of the genital tract. Universal access to reproductive health has also been included in the Millenium Development Goals as a priority issue.

Health cannot be attained where poverty and misery abound, where food and safe water are scarce, where housing is inadequate, and where public and community services are lacking or rudimentary .Low education, lack of awareness and poor health care seeking behaviour of slum women adds to this condition. Thus the health situation of women in reproductive age group in the urban slums needs much attention. Evidence of existing health status in urban slum population is needed for effective implementation of programme.

In this perspective, the present study has been conducted with the overall aim to determine the prevalence of RTI/STI and to assess the knowledge and health seeking behavior regarding RTI/STI of reproductive age group women (15-49 years) of urban slums of Burdwan Municipal area .The study was conducted during May 2014-October 2015 among 422 study subjects selected through multistage random sampling. The study subjects were interviewed using a pre-designed pre-tested schedule for data collection. Data was analyzed with appropriate statistical tests to find out the factors associated with reproductive tract infections. Ethical clearance for the study was obtained from the institutional ethics committee of Burdwan Medical College ,West Bengal.

I .Socio-Demographic Characteristics Of The Study Subjects:

Out of the 416 study subjects, 46.4 % of the study subjects belonged to the age group of 20-29 years.

23.6% and 30 % belonged respectively to the age group of <20 years and >29 years.

Majority of study subjects belonged to the Hindu religion (74.8%) , 21.6% and 3.6% belong to Muslim and Christian religion respectively.

Out of the 416 study subjects, , 65.9% women belonged to the schedule caste, 21.1% belonged to the general caste, 3.4% to the schedule tribe and 9.6% to the other backward classes.

Among the study subjects 78.1% were homemakers , 7 % of women were employed and 14.9 % were student.

Out of the 416 study subjects ,127 (30.5%) were illiterate , 16 (5.8%) were just literate and 273 (i.e 63.7%) were literate of which 29.6% were educated upto primary level,10.8% were educated upto mid-school, 22.4% were educated upto secondary , 2.2% studied upto higher secondary and 0.9 % upto graduation.

Out of 416 of study subjects, 54.3% belonged to SES-V , 42.1% belonged to SES-IV and 3.6% to SES- III.

Out of the total 416 study subjects 72.1% were married. A few of them i.e. 4.6% were either separated, divorced or widow. 23.3% of the total women were unmarried.

About three-fourth of the total 319 married study subjects, 76.5% were married for more than five years, 23.5% were married for less than five years.

Out of total 319 married study subjects, most of them i.e 79.6 % were married before 18 years of age and 20.4% were married after18 years.

Reproductive characteristics of the study subjects:

Among the 319 study subjects ,59.3 % had 2or less than 2 deliveries and 32 % had more than 2 deliveries.

Out of 291 parous study subjects,12.0% had home delivery,70.8% had institutional delivery and 17.2% had both home and institutional delivery.
About three-fourth of the total 319 married study subjects, 76.2% had no history of abortion, 23.8% had history of abortion.

Menstrual hygiene and adoption of family planning of the study subjects:

Among the total 416 study subjects, 78.8 % uses only clothes, 11.1 % uses sanitary pads and 10.1 % uses both sanitary pads and clothes.
Out of the total 319 married study subjects, more than half, 52.3% had Tubectomy done, 20.1% do not adopt any family planning method , 14.7 %, 8.2 % and 4.7 % uses OCP, Condom and IUCD respectively.

II. Prevalence Of Reproductive Tract Infections:

42.1% of the total respondents i.e. 175 had any kind of reproductive tract infection in last twelve months and rest 57.9% had no reproductive tract infection.
42.1 % had vaginal discharge syndrome and 13.4% have lower abdominal pain syndrome 0.5 % have lesion over genital area and in 0.5% inguinal swelling found. Total reported RTI symptoms were 56.5%. All the study subjects who were symptomatic had vaginal discharge.
Abnormal vaginal discharge was predominant symptom among 175(42.1%) individuals , 14.4% had vulval itching, while 26.9 % complains of low back ache. 14.4% had lower abdominal pain and 9.4 % had associated fever. 0.7% had lesion over genital area and 0.5% had inguinal swelling .Urinary symptoms were complained by 7.5% respondents.

III. Association Between Study Suject's Socio-Demographic, Reproductive Characteristics And Reproductive Tract Infection

- Reproductive tract infection was more in 20-29 years age group (49.2%) and significant statistical association (p=0.009) observed between the age group and presence of reproductive tract infection.
- Reproductive tract infection was more in Muslims (44.5%) in comparison to Hindu (41.8%) and Christian (33.3%) study subjects but statistically not significant.
- Reproductive tract infection was less in General caste (36.4%) in comparison to SC,ST.OBC (43.6%) but statistically not significant.
- Reproductive tract infection was more in study subjects who were illiterate (53.5%) in comparison to women who were literate (37%). Significant statistical association (p= 0.002) was found between presence of reproductive tract infection and educational status.
- Reproductive tract infection was more in SES-V (42.9%) in comparison to SES-III and IV(41.1%) but statistically not significant.
- Reproductive tract infection was more in homemakers (44.6%) in comparison to employed(41.4%) and student (29%) but statistically not significant.
- Reproductive tract infection was more in currently married study subjects(46%) in comparison to unmarried (29.9%) and widow ,separated or divorced (42.1%). Significant statistical association(p=0.02) was found between presence of reproductive tract infection and marital status.
- Reproductive tract infection was more in study subjects using clothes (44.8%)during menstruation than who uses sanitary pads (23.9%) or both (40.5%). Significant statistical association(p=0. .026) was found between presence of reproductive tract infection and menstrual hygiene.
- Reproductive tract infection was more in greater than 5 years duration of marital life (49.2%) in comparison to less than 5 years duration of marital life (34.7%) .Significant statistical association(p= 0.038) was found between presence of reproductive tract infection and duration of marital life .
- Reproductive tract infection was more in study subjects who were married before 18 yrs of age (51.9%) than after 18 years (21.5%) .Significant statistical association (p=0.0000) was found between presence of reproductive tract infection and age at marriage.
- Reproductive tract infection was more in study subjects with greater than 2 children (54.9%) than in nulliparous or less than 2 children (41.5%) .Significant statistical association (p=0.03)was found between presence of reproductive tract infection and parity.
- Reproductive tract infection was more in study subjects who had home deliveries (62.9%) than who had institutional deliveries (43.2%). Significant statistical association (p=0.041)was found between presence of reproductive tract infection and place of delivery.
- Reproductive tract infection was more in study subjects with 2 or more than 2 abortions (80.7%)than with 1 (64.4%) or no abortion (37.9%). Significant statistical association (p=0.000)was found between presence of reproductive tract infection and number of abortions.

- Reproductive tract infection was more in study subjects adopting invasive methods of family planning(51.1%) than with non-invasive methods (38.7%). Significant statistical association(p=0.036) was found between presence of reproductive tract infection and adoption of family planning methods.
- Reproductive tract infection was more in study subjects not using any family planning methods(65.6%) than who use (40.8%). Significant statistical association(p=0.001) was found between presence of reproductive tract infection and adoption of family planning methods.
- The prevalence of self-reported RTIs was observed to be .483 times among older women (≥30 years) as compared to young women <30 years of age and significant statistical association found..
- With regards to educational status , the odds of having RTI among women who have studied till secondary level were about forty–three percent less than as compared to illiterate women.
- The probability of reporting the problem of RTI was found to be significantly lower among women who used sanitary pads during menses compared to those who used clothes(.404 times)
- The odds of having RTI are 1.322 times higher in married women as compared to the unmarried ones and it is statistically significant.
- Women who were married for more than 5 years have higher odds(13.08) of having RTI compared to women married for less than 1 year and statistically significant.
- Women who have more than 2 pregnancies have higher odds(1.336) of having RTI as compared to nulliparous women and significant statistical association found.
- The probability of reporting the problem of RTI is .193 times in women married above 18 years of age as compared to women married before 18 years of age and significant statistical association found.
- A statistically significant association was found between prevalence of RTI and place of delivery The results shows that the probability of RTI is .087 times in women who had institutional delivery as compared to women who had home delivery .
- The odds of having RTI are 2.050 times higher in women having history of abortions as compared to women without any history and significant statistical association found.
- The risk of RTI is .145 times in women whose husband use condoms as compared to women who do not use any contraceptives. Women who used IUCD as contraceptives have higher odds (1.300) of having RTI as compared to women not using any contraceptives and statistically significant.

IV. Knowledge Regarding Reproductive Tract Infection

1. Awareness of reproductive tract infection

Among 416 women 70.7% of the study subjects had heard of reproductive tract infection and the rest did not heard about it

2. Knowledge about symptoms of reproductive tract infections

Among 294 subjects, 79.6 % responded white discharge as a symptom of reproductive tract infection, 70.7% said itching as symptom,23.1% and 32 % responded burning sensation during micturation and irregular menstruation respectively. Lower abdominal pain was said by 45.9 % as symptom while fever, genital ulcer and swelling in the groin by 15 %, 4.1 % and 2 % respectively. 20.1 % did not know any symptom.

3.Knowledge about mode of transmission of reproductive tract infections

Among 294 respondents, 40.1% said infected partner as mode of transmission while 38.1% said lack of personal hygiene.25.8 % and 10.9 % responded mother to child and transfusion of infected blood. Needles/blade/skin puncture said by 6.8% and 61.9% do not know the mode of transmission of reproductive tract infection.

4 .Knowledge about ill-effects of reproductive tract infection on health

Out of 294 study subjects, 67.4% responded cancer uterus as ill-effect of reproductive tract infection on health. Increased menstrual bleeding was responded by 48.9 % while damage to the child and chronic abdominal pain responded by 22.4% and 24.8 % respectively.18.7 % said problem during pregnancy can occur while 19.7 % said still-birth as ill-effect.32.6 % did not know any ill-effects of reproductive tract infection.

5 .Knowledge about prevention of the disease

Out of 294 study subjects ,74.8% regarded reproductive tract infection can be prevented while 14.3 %said that reproductive tract infection cannot be prevented and 10.9% did not know that reproductive tract infection can be prevented.

6 . Knowledge about mode of prevention of disease

Among 220 study subjects ,45.9% said that maintaining hygiene of genitalia as mode of prevention of reproductive tract infection.34.1% and 20.9% said using condoms during intercourse and avoiding sex with infected partner as mode of prevention while 4.5%, 3.6% and 5.5% said not taking hot food , safe delivery practices and using permanent contraceptive methods as preventive mode respectively.41.8% did not know how to prevent reproductive tract infection.

7 .Knowledge about necessity of treatment of the disease

Out of 294 respondents, 47.6% said that treatment was necessary while 15.3% said that no treatment was required.37.1 % did not know whether treatment was required.

8 . Knowledge about partner treatment

19.1% out of 294 study subjects said that treatment of partner was necessary and 16.3% responded no partner treatment was required. 64.6% did not know whether partner treatment was necessary.

V . Health-Seeking Behaviour

1. Place of seeking health care

Out of 175 symptomatic study subjects , 49.1% did not go for any treatment. Among those who had treatment , 24% went to private medical facility, 12.6% went to Govt. Medical facility while 22.9 % consulted homeopathy or ayurvedic.13.7 % went to pharmacy while 12% took advice from traditional healer respectively.

2. Reasons for not taking any treatment

Among 86 study subjects who did not take any treatment , 67.4% said that lack of severity as reason for not taking any treatment. 15.1%, 10.5 % and 7 % responded financial problems, no problem with routine activities and symptoms were for a short duration as reasons for not taking any treatment.

VI. Conclusion

The study on reproductive tract infections among women of reproductive age group in the municipal area of Burdwan assessed socio-economic characteristics, prevalence of reproductive tract infections by syndromic approach and knowledge regarding reproductive tract infections . The study also had the objective to find any association of reproductive tract infection with soci-demographic variables and health care seeking behavior of them.

The highlights of the study finding were as follows:

- Maximum proportion of the study subjects i.e. 46.4% belonged to the age group of 20-29 years and minimum proportion (13.7%) belonged to 40-49 years age group .
- Majority of study subjects belonged to the Hindu religion (74.8%) .
- Out of the 416 study subjects, majority(65.9%)of them belonged to the schedule caste.
- Majority of the study subjects i.e 78.1% were homemakers .
- Among them 30.5% were illiterate.
- Majority of the 416 respondents, 54.3% belonged to SES-V and 42.1% belonged to SES-IV as per modified BG Prasad scale 2013.
- Majority of the subjects (72.1%) were married.
- Nearly 76.5% of the study subjects were married for more than five years.
- It has been found that early marriage of girls is quite prevalent. Most of them i.e 79.6 % were married before 18 years of age .
- Majority of the study subjects i.e 59.3 % had 2or less than 2 deliveries .
- Rate of institutional delivery was quite good (70.8%).
- Majority of the study subjects i.e. 76.2% had no history of abortion.
- 78.8 % of the total 416 study subjects uses only clothes during menstruation.
- Majority of the study subjects i.e 52.3% had tubectomy done , 20.1% do not adopt any family planning method , 14.7 %, 8.2 % and 4.7% uses OCP, Condom and IUCD respectively.
- 42.1% of the total respondents had any kind of reproductive tract infection in last twelve months .
- Among them 42.1 % had vaginal discharge syndrome and 13.4% have lower abdominal pain syndrome .Both lesion over genital area and inguinal swelling found in 0.5% each.
- Abnormal vaginal discharge was predominant symptom among 42.1% individuals ,26.9% complains of low back ache. 14.4% had lower abdominal pain and vulval itchig. Also associated fever, lesion over genital area ,inguinal swelling and urinary symptoms were complained .
- Married study subjects , those married for more than five years , those who have more than 2 pregnancies, those who have history of abortions and those using IUCD as contraceptives significantly increases the odds of reproductive tract infections with those married for more than five years being maximum (OR 13.08).
- Significant statistical association was found between presence of reproductive tract infections and age of the study subjects , educational status , menstrual hygiene, age at marriage and place of delivery.
- 70.7% of the study subjects had heard of reproductive tract infections.
- Knowledge of symptoms of reproductive tract infection, 79.6 % responded white discharge as a symptom of reproductive tract infection, 70.7% said itching as symptom and 20.1 % did not know any symptoms.

- In regards to knowledge of mode of transmission of RTI, 40.1% said infected partner as mode of transmission while 38.1% said lack of personal hygiene and 61.9% do not know the mode of transmission of reproductive tract infections
- Majority of the study subjects, 67.4% responded cancer uterus as ill-effect of reproductive tract infection on health while 32.6 % did not know any ill-effects of reproductive tract infections.
- Most of the study subjects ,74.8% regarded reproductive tract infection can be prevented but 10.9% did not know that reproductive tract infection can be prevented.
- Regarding mode of prevention of reproductive tract infection, 45.9% said that maintaining hygiene of genitalia as mode of prevention of reproductive tract infection while 41.8% did not know how to prevent reproductive tract infection.
- 47.6% said that treatment was necessary while 15.3% said that no treatment was required.37.1 % did not know whether treatment was required.
- 19.1% out of 294 study subjects said that treatment of partner was necessary and 16.3% responded no partner treatment was required. 64.6% did not know whether partner treatment was necessary.
- Out of 175 symptomatic study subjects , 49.1% did not opted for any treatment. Among those who had treatment , 24% went to private medical facility, 12.6% went to Govt. Medical facility while others either consulted homeopathy or ayurvedic, went to pharmacy or took advice from traditional healer.
- Majority of study subjects(67.4%) said that lack of severity as reason for not taking any treatment.

Though the findings of the present study are substantiated by other studies, but there are some studies, the findings of which do not corroborate with the findings of this study. This is probably because of the difference in the nature of study technique, sample size, geographical area and the characteristics of the study subjects. Therefore it necessitates further studies in this issue in future.

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