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Assessment of knowledge and health seeking behavior on reproductive tract infection (RTI) and its prevention among adolescent girls studying in selected Higher Secondary School, West Bengal.

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Abstract:
Background: *Reproductive tract infections constitute a big burden of disease in India especially among women and adolescent girls that adversely affect their reproductive health. It causes impact to both men and women, and their consequences can be more devastating among women than men. Adolescence is at greater risk as they are less likely to seek treatment due to embarrassment, taboos and social stigma. This study was undertaken with the objectives to assess the knowledge and health seeking behaviour on reproductive tract infection (RTI) and its prevention among adolescent girls.*
Materials and methods: *A descriptive study was conducted with the Conceptual framework based on Health Belief Model. Simple random sampling technique was used to select 200 students studying in Class XI of age 15-19 years in selected school of West Bengal. Data was collected through structured knowledge questionnaire and semi-structured questionnaire for health seeking behaviour.*
Results: *The study findings revealed that 15% respondents had symptoms of RTI. Majority, 70.5% of the respondents had fair knowledge, with mean 11.3, median 11 and standard deviation 2.3. Out of 30 respondents who presented with symptoms of RTI, majority, 56.67% of them did not go for health check up, the reasons were 47.06% respondents had mild symptoms, 29.41% respondents were embarrassed and 23.53% of them had financial problems. There was significant association found between knowledge score with the educational status of the mother ($\chi 2=5.06$) and previous knowledge of the respondents ($\chi 2=10.24$).*
Conclusion: *The study concluded that adolescent girls had fair knowledge regarding RTI and its prevention, but poor health seeking behaviour.*
Key words: *Reproductive tract infection (RTI), knowledge, health seeking behavior, adolescent girls*

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I. Introduction

Reproductive tract infections (RTI's) among women aged 15-45 years, is increasing in India. Lack of awareness and health facilities in turn lead to a higher incidence of STDs/RTIs in rural areas. Illiteracy, unhealthy lifestyle, burden of gynaecological and obstetrical conditions and procedures, strong traditional culture and practices put the Indian women at higher risk of acquiring reproductive tract infections. The prevalence of the disease is estimated to be 6% in India and worldwide a total of 30 million people may be affected out of 340 million[1]. Globally, more than 1 million STIs/RTIs are acquired everyday[2].

Need of the study

Adolescents and youth in the age group 10-24 years contribute to about 30% of India's total population. Data of various Indian studies also reveals that adolescents get indulge in pre-marital sex more frequently and at an early age. RTIs including sexually transmitted disease, have historically been labelled a 'silent; epidemic among females, contributing to gynaecological morbidity and maternal mortality globally. STIs, including HIV, are most common among young people aged 15-24 years and more so in young women.[3] The prevalence of reproductive tract infection (RTI) in India was 23.5% among women as per National Family Health Survey-4(2015-2016)[4]. The self report of symptoms according to District Level Household Survey-4 (2012-2013) was found to be 10.9%. In West Bengal it was found to be 15.6% in women[5]. Adolescents in India suffer more in RTIs due to lack of knowledge and lack of self-reported symptoms of reproductive morbidity.

They do not seek treatment due to existing taboos and inhibitions regarding sexual and reproductive health and hesitate discussing regarding their reproductive health problems mainly due to shame and embarrassment. Adolescents with better knowledge regarding menstrual hygiene and menstrual practices are less vulnerable to reproductive tract infections and its consequences.

Statement of the problem

Assessment of knowledge and health seeking behavior on reproductive tract infection (RTI) and its prevention among adolescent girls studying in selected Higher Secondary School, West Bengal.

Objectives of the study

1. To assess the knowledge on reproductive tract infection and its prevention among adolescent girls.
2. To find out the health seeking behavior of adolescent girls on reproductive tract infection.
3. To determine the association between the knowledge scores and selected demographic variables.

II. Material And Methods

The descriptive study was conducted in selected Higher Secondary Schools of West Bengal. A total of 200 students studying in Class XI of age 15-19 years were used for the study.

Study design: Descriptive survey design was used to conduct the present study.

Study setting: The study setting were Sakhawat Memorial Government Girl's High School, Kolkata, Chetla Girl's High School, Kolkata, Binodini Girl's High School, Kolkata and Jadavpur Sammilita Balika Vidyalaya, West Bengal.

Study duration: 8th January 2020 to 28th January 2020.

Sample size: 200 adolescent girls.

Sample size calculation: The sample size for the present study was determined by power analysis formula. Using the prevalence of RTI/STI symptoms of India (9.5%) among age group 15-19 years as per NFHS-4 (2015-2016)[7], the sample size was calculated at 95% confidence level i.e.1.96 with 5% margin of error. The sample size calculated was 132. In this present study, the sample size used was 30 adolescent girls for pilot study and 200 for final study.

Subjects and selection method: The sample of this study was adolescent girls studying in Class XI of age 15-19 years in selected school of West Bengal. Simple random sampling technique was adopted in this study.

Inclusion criteria:

- Adolescent girls who are studying in class XI of age 15-19 years.
- Adolescent girls present at the time of data collection.
- Adolescent girls who are willing to participate in the study.

Data Collection Tools and technique

Based on the objectives of the study, three tools were used to generate necessary information for the study. The technique used for data collection was paper pencil test.

A Semi-structured questionnaire of 8 items were covered in this portion to collect demographic variables of the adolescent girls i.e. age (in years), religion, educational stream, type of family, mother's educational status, monthly family income (in Rs), previous knowledge regarding reproductive tract infection and presence of any symptoms of reproductive tract infection.

The structured knowledge questionnaire was developed to assess the knowledge on reproductive tract infection and its prevention among higher secondary students. In planning the structured knowledge questionnaire, general objectives, specific objectives and contents were lined out. A blue print was prepared specifying the content area, the domain of objectives, the total number of items, their distribution and the maximum possible score of each item. 20 multiple choice questions were prepared for assessing the knowledge. The respondents were instructed to put a tick (√) on the appropriate answer. A score of '1' was allotted against every correct response and '0' against the incorrect response.

Level of knowledge score was formulated as per mean±1SD and was graded as-

Level of Knowledge	Score range
Good	above 13
Fair	9-13
Poor	below 9

Maximum score=20;
Minimum score=0

Semi-structured questionnaire was used to find out their health seeking behaviour on RTI. This tool consisted of 11 questions with both dichotomous and multiple choice questions. Some questions also contain sub questions based on the criteria.

Procedure Methodology: After obtaining ethical clearance from the IPGME&R Research Oversight Committee and formal administrative permission, the study was conducted through informed consent from parents of each respondents. The sample was selected based on inclusion criteria by using simple random sampling technique. Separate code number was given to each respondent. Semi-structured questionnaire was given to collect demographic variables and data on health seeking behavior of the respondents. Structured knowledge questionnaire was used to assess the knowledge level. The tool was pretested on 10 students of Class XI in Alipore Multipurpose Girls School, Kolkata to determine the clarity, ambiguity and time required for completing the questionnaire. The pilot study was conducted among 30 students at Kamala Girl's High School, Kolkata, West Bengal from 9.12.19 to 14.12.19. The final study was conducted at Sakhawat Memorial Government Girl's High School, Chetla Girl's High School, Binodini Girl's High School and Jadavpur Sammilita Balika Vidyalaya, Kolkata, West Bengal from 8/1/20 to 28/1/20.

Statistical analysis: After data collection, the data were organized, tabulated, analyzed and interpreted. Both descriptive and inferential statistics were used for data analysis. The statistical analysis for data are organised as frequency and percentage distribution to describe the sample characteristics and health seeking behavior of respondents with symptoms of RTI. Range, mean, median and standard deviation were used for knowledge score of the Higher secondary students. Area wise maximum possible score mean, median, standard deviation and mean percentage of knowledge score of the respondents were also calculated. Chi Square test were applied for finding the association between knowledge score and selected demographic variables of the respondents.

III. Result

After the study, the data obtained were organized, analyzed and presented in the following sections:

Section I: Findings related to description of demographic characteristics of the respondents (see Table 1, 2 &3).
In the present study, most of the adolescent girls (57%) were in the age group of 15-16years, 86% of the respondents belong to Hindu religion, 75% of the respondents were from Arts stream and majority (67.5%) belong to nuclear family. The data also depicted that 27% of the mother of the respondents had secondary education, 26% were graduate, 25.5 % had higher secondary education and 21.5% had primary education. Majority, 44.5% of the respondents had monthly family income between Rs10001-20000.The data also revealed that 75% of the respondents had previous knowledge about RTI (see Table 1). The source of previous knowledge given by majority, 50.67% of the respondents were from parents (see Table 2). Most of the adolescent girls (85%) had absence of RTI, whereas 15% of them had symptoms of RTI. Out of those who presented with the symptoms of RTI, majority, 86.67% of the respondents had lower abdominal pain (see Table 3).

Section II Findings related to the knowledge score of the adolescent girls regarding reproductive tract infection and its prevention (see Table 4 & 5).
The data showed that majority, 70.5% of the respondents had fair knowledge about reproductive tract infection and its prevention, 17% had good knowledge and 12.5% had poor knowledge (see Table 4). The Knowledge score obtained by the adolescent girls ranges from 6-17 out of total 20 score with a mean of 11.3 and median was 11 (see Table 5). The standard deviation calculated was 2.3 which showed that there was mild dispersion of the knowledge score. Among the five areas of RTI (i.e. concept, causes, types, sign & symptoms and management & prevention), the adolescent girls scored maximum in the area of concept (80%).

Section III Findings related to the health seeking behavior of the adolescent girls regarding reproductive tract infection (see Table 6, 7, 8, 9 & 10).

Out of 30 respondents who had symptoms of RTI, majority, 86.67% of the adolescent girls had no reproductive tract infection in the past. Majority, 60% of the respondents disclose their problems regarding reproductive health to their mother (see Table 6). Regarding problem related to reproductive health, 20% of them who had symptoms did self treatment. The reason given for self treatment were mild symptoms (50%), embarrassed (33.33%) and financial reasons (16.67%) (see Table7).

13 respondents(43.33%) out of those 30 presenting with symptoms of RTI, seek medical help, in which 38.46% seek health care facility during major problems, 23.08% seek help during minor problems, 23.08% seek help only in unavoidable situation and 15.38% seek health care check up on regular basis. Majority, 76.92% of them took medication as prescribed and preferred Government hospital by majority (46.15%) for it was easily available/ accessible (46.15%) (see Table 8). The data also revealed that majority 56.67% of the adolescent girls

with symptoms of RTI had discomfort/ burning sensation due to vaginal discharge, 30% of them had itching around the genitalia and 13.33% had redness around genitalia. Most of the respondents, 80% who had symptoms of RTI use sanitary pads during monthly period, and 46.67% of those respondents change their napkin 3 times a day. The data also presented that majority 93.33% of the adolescent girls who had symptoms of RTI wash their undergarments daily (see Table 10).

The data also depicted that majority, 56.67% who had symptoms did not go for health check (see Table 9), as 47.06% respondents had mild symptoms, 29.41% respondents were embarrassed and 23.53% of them had financial problems (see Table 9).

Section IV Findings related to association between knowledge score of adolescent girls with selected demographic variables (see Table 11)

Chi square was computed to determine the association between the knowledge scores and the demographic variables of the respondents. There was significant association found between knowledge score of the adolescent girls with the educational status of the mother ($\chi 2=5.06$) and previous knowledge of the respondents about reproductive tract infection ($\chi 2=10.24$) at 0.05 level of significance. Hence, it could be concluded that the knowledge score of the adolescent girls was dependent on the mother's educational status and previous knowledge about RTI of the respondents. There were no significant association found with the other demographic variables.

Table 1: Frequency and percentage distribution of respondents according to their demographic characteristics.

n=200

Sample characteristics	Frequency	Percentage(%)
Age (in years)		
15-16	114	57
17-18	86	43
Religion		
Hinduism	172	86
Islam	28	14
Educational stream		
Science	50	25
Arts	150	75
Type of family		
Nuclear family	135	67.5
Joint family	65	32.5
Extended family	Nil	-
Mother's educational status		
Illiterate	Nil	-
Primary	43	21.5
Secondary	54	27
Higher Secondary	51	25.5
Graduate	52	26
Monthly Family Income (in Rs)		
Below 10000	71	35.5
10001-20000	89	44.5
Above 20000	40	20
Had previous knowledge about RTI		
Yes	150	75
No	50	25
Presence of any symptoms of RTI		
Yes	30	15
No	170	85

Table 2: Frequency & percentage distribution of respondents according to their source of knowledge about RTI.

n_1 =150(respondents who had previous knowledge)

Sample characteristics	Responses		Percentage (%) of respondents
	Frequency	Percentage(%)	
Source of knowledge			
Parents	76	38.6	50.67
Teachers	43	21.9	28.67
Friends	10	05.1	6.67
Mass media	45	22.8	30
Health professionals	23	11.6	15.33
Total responses	197		

Multiple responses included

Table 3: Frequency and percentage distribution of respondents according to the symptoms present in the respondents

n_2=30(respondents who had symptoms of RTI)

Sample characteristics	Responses		Percentage(%) of respondents
	Frequency	Percentage(%)	
Symptoms of RTI			
Abnormal vaginal bleeding	15	17.6	50
Lower back pain	20	23.5	66.67
Lower abdominal pain	26	30.6	86.67
Itching or irritation over vulva	18	21.2	60
Burning micturition	06	07.1	20
Ulcers around vulva	Nil	-	-
Painful blister like lesions	Nil	-	-
Total responses	85		

Multiple responses included.

Table 4: Frequency and percentage distribution of adolescent girls according to their knowledge score regarding RTI and its prevention.

n=200

Level of knowledge	Frequency	Percentage(%)
Good (above 13)	34	17
Fair (9-13)	141	70.5
Poor (below 9)	25	12.5

Maximum score=20
Minimum score=0

Table 5: Distribution of range, mean, median and standard deviation of knowledge score obtained by the adolescent girls regarding reproductive tract infection and its prevention.

n=200

Variable	Range	Mean	Median	Standard deviation
Knowledge	06-17	11.3	11	2.3

Maximum score=20
Minimum score=0

Table 6: Frequency and percentage distribution of respondents with symptoms of RTI according to the presence of RTI in the past and whom they disclose their problem related to reproductive health.

n_2=30(respondents who had symptoms of RTI)

Sample characteristics	Frequency	Percentage(%)
Presence of RTI in the past		
Yes	04	13.33
No	26	86.67
Disclose reproductive health problem to		
Mother	18	60
Father	Nil	-
Sister	04	13.33
Friends	02	06.67
Teacher	Nil	-
Do not disclose to anyone	06	20

Table 7: Frequency and percentage distribution of respondents with symptoms of RTI according to self treatment done for reproductive health problem.

Sample characteristics	Frequency	Percentage(%)
Self treatment done (n_2=30)		
Yes	06	20
No	24	80
Reason for self treatment(n_3=6)		
Mild symptoms	03	50
Got healed	Nil	-
Embarrassed	02	33.33
Financial reasons	01	16.67

Table 8: Frequency and percentage distribution of respondents with symptoms of RTI according to health check up seeking behavior of the adolescent girls.

Sample characteristics	Frequency	Percentage(%)
Check up done(n_2=30)		
Yes	13	43.33
No	17	56.67
Frequency of check up(n_4=13)		
Once a month	Nil	-
Once in six months	06	46.15
Once in a year	05	38.46
Beyond one year	02	15.38
Took medicine as prescribed(n_4=13)		
Yes	10	76.92
No	03	23.08
Time of seeking health care facility(n4=13)		
During minor problems	03	23.08
During major problems	05	38.46
Only in unavoidable situation	03	23.08
Check up on regular basis	02	15.38
Source of health care facility(n4=13)		
Local pharmacy	01	07.69
Government hospital	06	46.15
Female Health Worker	02	15.38
Private hospital/practitioner	04	30.77
Home remedies	Nil	-
Spiritual/traditional healer	Nil	-
Reason for choosing health facility(n4=13)		
Previously treated and cured	05	38.46
Easily available/accessible	06	46.15
Cheap/low cost	02	15.38
Religious belief	Nil	-

Table 9: Frequency and percentage distribution of respondents with symptoms of RTI according to their reason for not doing health check up.

n_5=17 (respondents who had not done check up)

Sample characteristics	Frequency	Percentage(%)
Reason for no check up		
No time	Nil	-
Embarrassed	05	29.41
Financial problems	04	23.53
Mild symptoms	08	47.06

Table 10: Frequency and percentage distribution of respondents with symptoms of RTI in terms of effect of vaginal discharge, type of napkin used, frequency of changing pads during periods and cleanliness of undergarments.

n_2=30

Sample characteristics	Frequency	Percentage(%)
Effect of vaginal discharge		
Does not cause any problem	Nil	-
Itching around genitalia	09	30
Redness/ulcer around genitalia	04	13.33
Discomfort or burning sensation	17	56.67
Type of napkin used		
Clothes	06	20
Sanitary pads	24	80
Frequency of changing pads		
Once a day	02	06.67
2 times in a day	10	33.33
3 times in a day	14	46.67
More than 3 times	04	13.33
Wash undergarments daily		
Yes	28	93.33
No	02	06.67

Table 11: Chi square test showing association between knowledge score of the respondents with the demographic variables.

n=200

Sample characteristics	Knowledge score <median	Knowledge score ≥median	Total	χ2 value	p value
Age (in years)					
15-16	37	77	114		
17-18	30	56	86	0.13	0.72
Total	67	133	200		
Religion					
Hinduism	55	117	172		
Islam	12	16	28	1.28	0.26
Total	67	133	200		
Educational stream					
Science	14	36	50		
Arts	53	97	150	0.91	0.34
Total	67	133	200		
Type of family					
Nuclear	47	88	135		
Joint	20	45	65	0.32	0.57
Total	67	133	200		
Educational status of mother					
Upto secondary level	40	57	97		
Higher secondary and above	27	76	103	5.06*	0.02
Total	67	133	200		
Monthly family income (in Rs)					
At and below 2000	56	104	160		
Above 20000	11	29	40	0.81	0.37
Total	67	133	200		
Previous knowledge of RTI					
Yes	41	109	150		
No	26	24	50	10.24**	0.001
Total	67	133	200		
Presence of symptoms of RTI					
Yes	08	22	30		
No	59	111	170	0.74	0.39
Total	67	133	200		

χ 2 df(1)=3.84, p>0.05
χ 2 df(1)=3.84, p<0.05

IV. Discussion

The major findings of the present study were discussed and compared in relation with findings of the other studies, conclusion and its implications.

The findings of the present study revealed that most of the adolescent girls (57%) were in the age group of 15-16year and 86% belong to Hindu religion. 15% of respondents had symptoms of RTI. Out of those who presented with the symptoms of RTI, majority, 86.67% of the respondents had lower abdominal pain, 66.67% of them had lower back pain, 60% respondents had itching or irritation over the vulva, 50% had abnormal vaginal discharge and 20% respondents had burning micturition. These findings were consistent with the study findings conducted by **Mandal S, Naskar S, Md. Samsuzzaman**[6] which revealed most of the adolescent girls, 70.6% belong to Hindu religion. Majority, 52% of the respondents had absence of RTI. Out of those who presented symptoms of RTI, 44.9% of the adolescent girls had vaginal discharge, 24.5% had itching over vulva, 2.9% had lower abdominal pain, 0.9% low backache and 0.9% had burning micturition.

In the present study, majority, 70.5% of the respondents had fair knowledge about reproductive tract infection and its prevention, 17% had good knowledge and 12.5% had poor knowledge. The Knowledge score obtained by the adolescent girls ranges from 6-17 out of total 20 score with a mean score 11.3, median was 11 and SD 2.3. There was significant association found between knowledge score of the adolescent girls with the educational status of the mother (χ2=5.06) and also previous knowledge of the respondents about reproductive tract infection (χ2=10.24) at 0.05 level of significance. The study was supported by the findings of **Simarjeet K, Vandana V, Amandeep K**[7] that revealed majority (61%) of women had average level of knowledge on RTI.

The mean, median & standard deviation of knowledge score was 11.32, 11 & 2.99 respectively. The data also presented that the computed chi-square value of knowledge of women regarding reproductive tract infections with previous knowledge (15.68) was found to be statistically significant at 0.05 level of significance.

In the present study, out of 30 respondents who had symptoms of RTI, majority, 56.67% of them did not go for health check up or seek heath care. The reason given by those respondents who did not go check up were majority, 47.06% mild symptoms, embarrassed (29.42%), financial problems (23.53%). The findings of this study were also consistent with the study conducted by **Chauhan MG, Patel H, Solanki H**[8] in which out of 195 girls who had RTI, only 12.83% girls sought treatment and 170 girls didn't approach any health facility for the treatment due to various reasons like shyness in 95(55.88%) girls, financial constraint among 65 (38.23%) girls & lack of awareness among 10 (5.89%) girls.

V. Conclusion

From the findings of the present study, it was concluded that majority of the adolescent girls had fair knowledge regarding reproductive tract infection and its prevention. The health seeking behaviour of the adolescent girls were poor. The findings of the study showed significant association between knowledge scores with the educational status of the mother and previous knowledge regarding RTI.

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