

Awareness, Perceptions, Attitudes, and Practices among Antenatal Mothers in Goa towards Reproductive Tract Infections/Sexually Transmitted Infections

Manjusha Jindal¹, Viraj Ramesh Naik², Jagadish Cacodcar³, Manojkumar Kulkarni⁴

¹Associate Professor, Department of Obstetrics and Gynaecology, Goa Medical College, Bambolim, Goa, India, ²Senior Resident, Department of Obstetrics and Gynaecology, Goa Medical College, Bambolim, Goa, India, ³Professor and Head, Department of Preventive and Social Medicine, Goa Medical College, Bambolim, Goa, India, ⁴Associate Professor in Statistics and Demography, Department of Preventive and Social Medicine, Goa Medical College, Bambolim, Goa, India

Abstract

Introduction: Reproductive tract infections (RTIs) are a universal public health problem among young women in developing countries and occupy the second position in public health problems. RTIs lead to 17% of economic losses in these countries. According to the WHO estimates in 2008, globally, 499 million new cases of RTIs occurred annually among women in the reproductive age group. In India, one among four women in the reproductive age group has any one type of RTIs and the annual incidence of RTI estimated is about 5%. Consequently, the prevalence rate of RTIs in various states of India is 19%–71%. There are about 40% of women estimated to have RTIs/sexually transmitted infections (RTI/STI) at any given point of time, but only 1% complete the full course of treatment of both partners. The present study was conducted to know about the knowledge, attitude, and practices about the RTI/STIs among the antenatal mothers attending outpatient departments in Goa Medical College as part of needs assessment for formulating educational and preventive strategies.

Materials and Methods: This cross-sectional descriptive study was conducted at Goa Medical College, a Tertiary Care Hospital at Bambolim-Goa, from December 2018 until February 2019. Institutional Ethics Committee (IEC) approval was taken from the IEC of the Goa Medical College. Data were collected by interviewing mothers using a semi-structured questionnaire. Additive scores were developed for awareness, knowledge, and perceptions in specific areas of transmission, prevention, and treatment of RTI/STI. The scores were characterized as poor, average, and good. Data were entered in EpiData Manager and analyzed using SPSS 22 version. Categorical variables were expressed in percentages and proportions and quantitative variables in mean \pm SD. The association between dependent and independent variables was assessed using bivariate analysis. $P < 0.05$ was taken as statistically significant.

Aims and Objectives: The aims of the study were (1) to study the level of awareness regarding RTIs/STIs among antenatal mothers, (2) to study their knowledge regarding symptoms and modes of transmission of RTI/STI, (3) to study awareness regarding preventive strategies for transmission of RTI/STIs, and (4) to study their attitudes and perceptions toward STIs.

Results: The mean age of the study participants was 27.5 years. The majority of antenatal mothers, i.e., 64% were aware of RTI/STIs in our study. There was poor awareness in 46% of study subjects and good awareness in 28% of study subjects. On bivariate analysis, awareness was significantly related to education level ($P = 0.000$), occupation ($P = 0.002$), socioeconomic status ($P = 0.000$), and location ($P = 0.000$). About 59% antenatal mothers knew whitish discharge per vaginum as the most common symptom of STI/RTI. The other symptoms identified were lower abdominal pain by 56%, itching in perineal region by 40%, weakness by 50%, and loss of weight by 22%. The mode of spread of RTI/STIs was identified as a sexual route by 56% and blood transfusion by 35% and 31% and 30% were of the opinion that unhygienic conditions and unsafe deliveries were the modes of spread of RTI/STIs, respectively. About 50% antenatal mothers were aware that safe sexual practices can prevent STI/RTIs, 36% felt that the use of condoms helps in preventing STI/RTIs, 22% opined that good personal hygiene is the mode of preventing RTI/STIs, and 31% were ignorant about

its prevention. Thus, 67% subjects had poor knowledge, 24% average knowledge and good knowledge was present in only 9% study subjects. On bivariate analysis, knowledge was significantly related to age ($P = 0.04$), education ($P = 0.03$), occupation ($P = 0.002$), and location ($P = 0.015$). Socioeconomic status shows significant linear by linear relation trends. About 74% study, subjects felt that RTI should be treated to avoid complications, while 23% did not want to express themselves. Similarly, 20% subjects refused to talk about STIs. Half of the

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Corresponding Author: Dr. Manjusha Jindal, 18-GOMECO Housing Society, Bambolim - 403 202, Goa, India.

study participants (48%) had a poor score with respect to perception about STI/RTI. Only 19% had good scores which were significantly related to education ($P = 0.012$), occupation ($P = 0.001$), and location ($P = 0.000$).

Conclusion: The study findings show that although there is 64% awareness of STI/RTI, there is a lack of requisite knowledge with respect to RTIs. The attitude, knowledge, and perception are significantly related to education, occupation, and location. Therefore, the knowledge has to be spread in society through educational programs so as to increase awareness of this problem, thereby curbing the spread of RTI/ STIs and their complications.

Key words: Antenatal mothers, Awareness, Knowledge, Reproductive tract infection, Sexually transmitted infections

INTRODUCTION

Reproductive tract infections (RTIs) are a universal public health problem among young women in developing countries and occupy the second position in public health problems.^[1] RTIs lead to 17% of economic losses in these countries.^[1] According to the WHO estimates in 2008, globally, 499 million new cases of RTIs occurred annually among women in the reproductive age group.^[2] In India, one among four women in the reproductive age group has any one type of RTIs^[3] and the annual incidence of RTI estimated is about 5%.^[4] RTIs include three types of infection: Sexually transmitted infections (STIs) such as chlamydia, gonorrhoea, chancroid, and human immunodeficiency virus (HIV), endogenous infections caused by overgrowth of organisms normally present in the genital tract of healthy women such as bacterial vaginosis and vulvovaginal candidiasis, and iatrogenic infections which are associated with improperly performed medical procedures such as unsafe abortion or poor delivery practices.^[6] Most of the women, who on the outpatient basis, seek care have vaginal infections.^[7,8] About 40% of women in India are estimated to have RTI/STI at any given point of time, but only 1% complete the full treatment of both partners.^[9] Reproductive ill-health constitutes around 33% of the total burden of disease in women. RTIs, if untreated, can lead to infertility, fetal wastage (10–15%), low birth weight, and prenatal infections (30–50%) as well as congenital infections. STIs, increase the risk of HIV by ten folds^[10] and also lead to consequences which include infertility, ectopic pregnancy, post-abortual and puerperal sepsis, stillbirth and perinatal death, cervical cancer, cirrhosis of liver, hepatocellular cancer, chronic pelvic pain, and emotional distress as well as social rejection. Social effects comprise stigmatization, domestic abuse, and even abandonment.^[10] In low-income countries, due to lack of knowledge and/or non-availability of health-care facilities, STI is often undiagnosed and untreated. This study was conducted to know about the knowledge, attitude, and practices about the RTI/ STIs among the antenatal mothers attending outpatient departments (OPDs) in Goa Medical College as part of needs assessment for formulating education and prevention strategies.

MATERIALS AND METHODS

A cross-sectional study using a semi-structured interview questionnaire was conducted at Goa Medical College, a Tertiary Care Hospital at Bambolim, Goa. The study duration was 3 months from December 2018 to February 2019. Institutional Ethics Committee (IEC) approval was obtained from the IEC of the Goa Medical College.

Sample Size

Taking the prevalence of RTI/STI (42%) from the previous study by Anjana *et al.*^[11] with a margin of 10% error, the sample size was calculated as 97; hence, 100 subjects were recruited for the study.

Sampling Technique

Sampling technique was census method.

Study Participants

All pregnant women registering for antenatal care visits were voluntarily recruited into the study after a careful explanation of the objectives of the study and their consent duly obtained.

Inclusion Criteria

The study subjects were pregnant women attending antenatal clinic for the first time, regardless of gravid status and duration of pregnancy, and willing to participate in the study.

Exclusion Criteria

Women unwilling to participate in the study.

Data Collection and Analysis

The source of data was the semi-structured questionnaire form filled after interview. These interviews included demographic and clinical characteristics, access to media related to RTI/STI, and general knowledge of RTI/STI and attitude and perceptions toward RTI/STI. The confidentiality was maintained. Additive scores were developed for awareness, knowledge, and perceptions in specific areas of transmission, prevention, and treatment. The scores were characterized as poor, average, and good.

Data was entered in EpiData Manager and analyzed using SPSS 22 version. Categorical variables were expressed in percentages and proportions and quantitative variables in mean \pm SD. Association between dependent and independent variables was assessed using bivariate analysis. $P < 0.05$ was taken as statistically significant.

Aims and Objectives

The aims of the study were as follows:

1. To study the level of awareness regarding STIs among antenatal mothers.
2. To study their knowledge regarding symptoms and modes of transmission of STI.
3. To study awareness regarding preventive strategies for transmission of STDs
4. To study their attitudes toward STIs.

RESULTS

A total of 100 antenatal mothers were interviewed in the study.

The mean age of the study participants was 27.5 years. As shown in Table 1, 46% subjects belonged to the age

Table 1: Sociodemographic details of the study participants

Sociodemographic variable	Total number (n=100)	Percentage
Age		
<20 years	4	4
21–25	29	29
26–30	46	46
31–35	15	15
>36	6	6
Parity		
Primi	48	48
Multi	52	52
Education		
Illiterate	7	7
Primary	20	20
Secondary	48	48
Higher secondary	3	3
Graduate	21	21
PG or above	1	1
Occupation		
Housewife	71	71
Clerical/service	18	18
Salesgirl	1	1
Advocate	1	1
Teacher	7	07
Carpenter and others	2	02
Socioeconomic status (modified BG Prasad classification)		
I	20	20
II	26	26
III	10	10
IV	27	27
V	17	17

group of 26–30 years and 29% between 21 and 25 years. About were primigravidas and 52% were multigravidas. Education up to secondary and higher secondary was noted in 51% subjects, graduation and above in 22%, 20% secured primary education, and 7% were illiterate. About 71% subjects were homemakers, involvement in clerical job or service was seen in 18% and 9% were salesgirl or professionals. About 20% antenatal mothers belonged to socioeconomic Class I, 26% belonged to Class II, 10% belonged to Class III, 27% belonged to Class IV, and 17% belonged to Class V. About 56% participants were from rural areas and 44% belonged to urban areas. About 63% subjects had access to both private and government health-care facility while 36% had access to a government facility.

As shown in Figure 1, 64% antenatal mothers had heard about RTI/ STIs, 29% had not heard about RTI/STIs, and 7% were ignorant of the entity.

The source of information regarding RTI/STI was doctors in 45% study subjects, followed by health workers in 30%, TV and radio (22%), newspapers (5%), and 3% had other sources such as family members, friends, and neighbors, as shown in Figure 2 (total no. exceeds 100).

As per additive scores of awareness, there was poor awareness in 46% of study subjects, and good awareness in 28% of study subjects while 26% had an average level of awareness. On bivariate analysis, awareness was significantly related to education level ($P = 0.000$), occupation ($P = 0.002$), socioeconomic status ($P = 0.000$), and location ($P = 0.000$). There was no significant relation to age, parity, and access to hospital services.

As shown in Table 2, 59% antenatal mothers knew whitish discharge per vaginum as the most common symptom of STI/ RTI. The other symptoms identified were lower abdominal

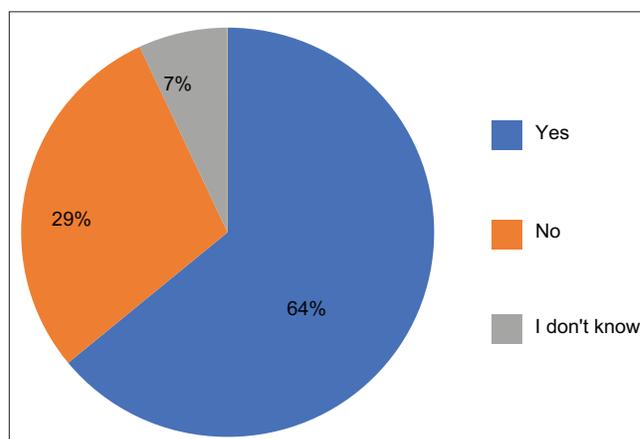


Figure 1: Awareness of antenatal mothers about reproductive tract infection (RTI)/sexually transmitted infections (STIs) – heard of RTI/ STIs

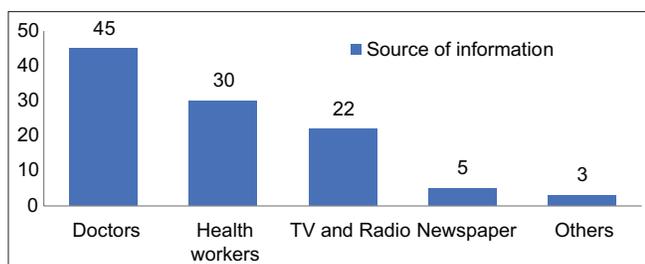


Figure 2: Source of information about reproductive tract infection/sexually transmitted infections

Table 2: Distribution of antenatal mothers based on their knowledge about RTI/STI

Knowledge variable	Number	Percentage
Knowledge of symptoms of RTI/STIs among antenatal mothers*		
Lower abdominal pain	56	56
White discharge per vaginum	59	59
Itching	40	40
Loss of weight	22	22
Weakness	50	50
Do not know	36	36
Knowledge about modes of spread of RTI/STIs*		
Sexual	56	56
Blood transfusion	35	35
Infected needles	22	22
Unsafe delivery	30	30
Unhygienic condition	31	31
Knowledge about methods of preventing RTI/STIs*		
Safe sexual practices	58	58
Good personal hygiene	22	22
Use of condoms	36	36
Do not know	31	31

Total exceeds 100 due to multiple responses. RTI: Reproductive tract infection, / STI: Sexually transmitted infections

pain by 56%, itching in perineal region by 40%, weakness by 50%, and loss of weight by 22%. One third mothers (36%) were ignorant of the symptoms. The mode of spread of RTI/STIs was identified as a sexual route by 56% blood transfusion by 35% and 31% and 30% were of the opinion that unhygienic conditions and unsafe deliveries were the modes of spread of RTI/STIs respectively. About 50% antenatal mothers were aware that safe sexual practices can prevent STI/RTIs, 36% felt that the use of condoms helps in preventing STI/RTIs, 22% opined that good personal hygiene is mode of preventing RTI/STIs, and 31% were ignorant about its prevention.

As per additives scores of knowledge about STI/RTI, 67% subjects had poor knowledge, 24% average knowledge, and good knowledge was present in only 9% study subjects. On bivariate analysis, knowledge was significantly related to age ($P = 0.04$), education ($P = 0.03$), occupation ($P = 0.002$), and location ($P = 0.015$). Socioeconomic status trends are significant, showing linear by linear relation. Parity and access to hospital services had no significant correlation to knowledge about RTI/STI.

Attitude and Perception

About 74% study, subjects felt that RTI should be treated to avoid complications, while 23% did not want to express themselves. Similarly, 20% subjects refused to talk about STIs while 79% felt that they should be treated but they were unwilling to mix with and take care of persons with STIs. On additive scores, half of the study participants (48%) had a poor score with respect to perception about STI/RTI. Only 19% had good scores which were significantly related to education ($P = 0.012$), occupation ($P = 0.001$), and location ($P = 0.000$). Age, parity, socioeconomic status, and access to health services had no significant relation to perception about STI/RTI.

DISCUSSION

In our study, 75% antenatal mothers belonged to the young age group between 21 and 30 years which is similar to findings of the study done by Shethwala and Mulla.^[12]

In our study, the majority of the antenatal mothers, i.e., 64% were aware of RTI/STIs, which is comparable to the study done by Thekdi *et al.*^[13] in Gujarat and Rabiou *et al.*^[14] in Nigeria, who reported 60.4% and 77.2%, respectively. This can be attributed to the fairly good level of education in these areas. In our study, we found that educated antenatal mothers (secondary education and above) had a higher level of knowledge than mothers who were illiterate and those who secured primary education and this was found to be statistically significant ($P < 0.05$). Furthermore, we noticed that antenatal mothers belonging to higher socioeconomic status (Class I, II, and III) had a better level of knowledge about STI than mothers belonging to lower socioeconomic status (Classes IV and V). This was found to be statistically significant ($P < 0.05$). Probably, it indirectly reflected access to education material.

In our study, we found that majority of the antenatal mothers, i.e., 45% had gained knowledge about RTI/STIs from doctors, followed by healthcare workers (30%), TV and radio (22%), newspaper (5%), and others such as relatives, neighbors, and friends (3%). Our findings are similar to the findings reported by Rani *et al.*^[8]

More than half of the antenatal mothers, i.e., 59% reported vaginal discharge as the most common symptom of RTI/STIs which is comparable to findings in study done by Rabiou *et al.*^[14] and Kamini *et al.*^[10] In our study, antenatal mothers were aware of multiple symptoms of RTI/STIs such as lower abdominal pain (56%), itching in perineal region (40%), loss of weight (22%), and weakness (50%). This can be attributed to the higher level

of education of the study population. Similar findings are reported by Shetty *et al.*,^[15] Thekdi *et al.*,^[13] and Rani *et al.*;^[8] however, the level of awareness is less as compared to our study.

In our study, the majority of antenatal mothers, i.e., 56% responded that sexual route being the main route of transmission of RTI/STIs, which is similar to findings of the study done by Rani *et al.*^[8] and Shetty *et al.*^[15] About 1/3rd, i.e. 35% reported transmission through blood transfusion, 22% were of the opinion that route of transmission is through infected needles, and 30% were of the opinion that route of transmission is through unsafe deliveries. Our findings are similar to findings in studies conducted by Rani *et al.*^[8] and Prusty and Unisa.^[16]

In our study, majority of the antenatal mothers, i.e., 58%, could correctly identify that practicing safe sex can help to prevent the spread of RTI/STIs, 36% opined that using condoms can prevent the spread of RTI/STIs, and 22% felt having good perineal hygiene can help in prevention. Our findings are similar to the findings of studies done by Rizwan *et al.*^[17] and Shetty *et al.*^[15]

Most of the studies mentioned above are done among married women, among females attending gynecological OPDs, among females in rural field practice areas. However, our study focuses on awareness and knowledge of antenatal mothers about RTI/STIs and we found that the level of awareness of antenatal mothers in Goa is good.

CONCLUSION

It was seen in our study that most of the antenatal mothers were aware of RTI/STIs and the mode of transmission and mode of prevention; however, the knowledge has to be spread deep in the society through educational programs so that even uneducated women become aware of this problem, thereby seeking treatment at the correct time and curbing the spread of RTI/STIs.

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ETHICAL APPROVAL

The study was approved by the Institutional Ethical Committee.

REFERENCES

1. Durai V, Varadharajan S, Muthuthandavan AR. Reproductive tract infections in rural India-a population-based study. *J Family Med Prim Care* 2019;8:3578-83.
2. World Health Organization. Global Incidence and Prevalence of Selected Curable Sexually Transmitted Infections. Geneva: World Health Organization; 2014.
3. Devi BS, Swarnalatha N. Prevalence of RTI/STI among reproductive age women (15-49 years) in urban slums of Tirupati Town, Andhra Pradesh. *Health Popul Perspect Issues* 2007;30:56-70.
4. National AIDS Control Organization. Training of Medical Officers to Deliver STI/RTI Services. New Delhi: MOHFW, Government of India, National AIDS Control Organization; 2012.
5. National AIDS Control Organization. National Guidelines on Prevention, Management and Control of Reproductive Tract Infections Including Sexually Transmitted Infections. New Delhi: MOHFW, Government of India, National AIDS Control Organization; 2007.
6. Surjushe A, Saraswat A, Rakhunde S, Atram V, Chavan RB. Prevalence of reproductive tract infections and sexually transmitted diseases in central rural area of Yavatmal District, Maharashtra, India. *Int J Biomed Adv Res* 2018;9:324-7.
7. Mobasher M, Saeedi Varnamkhasht N, Karimi A, Banaeiyan S. Prevalence study of genital tract infections in pregnant women referred to health centers in Iran. *Turk J Med Sci* 2014;44:232-6.
8. Rani V, Dixit AM, Singh NP, Kariwala P. KAP study on reproductive tract infections (RTIs) among married women (15-44 years) in rural area of Etawah, Uttar Pradesh. *Indian J Community Health* 2016;28:78-83.
9. Das S, Dasgupta A. Community based study of reproductive tract infections among women of the reproductive age group in a rural community of Eastern India. *Int J Community Med Public Health* 2019;6:330-6.
10. Kamini B, Kumar DK, Epari RK, Karri V. A study on knowledge, attitude and practice of reproductive tract morbidity among women in a rural area of Tamilnadu. *Natl J Res Comm Med* 2014;3:196-204.
11. Verma A, Meena JK, Banerjee B. A comparative study of prevalence of RTI/STI symptoms and treatment seeking behaviour among the married women in urban and rural areas of Delhi. *Int J Reprod Med* 2015;2015:1-8.
12. Shethwala N, Mulla S. Study on reproductive tract infection among the female patients attending the gynecology OPD in a teaching hospitals of Gujarat-India. *Int J Med Sci Public Health* 2014;3:123-5.
13. Thekdi KP, Mehta P, Thekdi PI. Awareness regarding reproductive tract infections among married women in the rural area of Surendra Nagar. *Int J Reprod Concept Obstet Gynecol* 2014;3:98-101.
14. Rabi KA, Adewunmi AA, Akinlusi FM, Akinola OI. Female reproductive tract infections: Understandings and care seeking behaviour among women of reproductive age in Lagos, Nigeria. *BMC Womens Health* 2010;10:8.
15. Shetty SM, Kiran KG, Badiger S, Kempaller VJ. Awareness of women on reproductive tract infections in rural field practice areas of a medical college in Mangalore. *Natl J Community Med* 2017;8:546-9.
16. Prusty RK, Unisa S. Reproductive tract infections and treatment seeking behavior among married adolescent women 15-19 years in India. *Int J MCH AIDS* 2013;2:103-10.
17. Rizwan S, Rath RS, Vivek G, Nitika, Anant G, Farhad A, *et al.* KAP study on sexually transmitted infections/reproductive tract infections (STIs/RTIs) among married women in rural Haryana. *Indian Dermatol Online J* 2015;6:9-12.

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