Annals of Medicine and Medical Sciences (AMMS)
Volume 05, 2026, *Page No.: 27 to 32*
Available at: *http://ammspub.com*

Original Article

OPEN ACCESS

Knowledge, Attitude, Healthcare-Seeking Behaviour, and Barriers Related to Reproductive Tract Infections/Sexually Transmitted Infections among Married Women Residing in Urban Slums of Central India: A Cross-Sectional Study

Dr. Aishwarya Kumar [1], Dr. Uday Narlawar [2]

[1]Assistant Professor, Department of Community Medicine, GBCM, Dehradun, Uttarakhand, India.
[2]Professor and Head, Department of Community Medicine, GMC, Nagpur, Maharashtra, India.

*Corresponding Author: Dr. Aishwarya Kumar; *aish18kumar@gmail.com*

Abstract

Context: Reproductive tract infections (RTIs) are common health problems among women of reproductive age and contribute significantly to morbidity, particularly in low- and middle-income countries. ***Aim:*** To assess knowledge, attitude, healthcare-seeking behaviour, and perceived barriers related to reproductive tract infections and sexually transmitted infections among married women. ***Settings and Design:*** A cross-sectional study was carried out in urban field practice area of a tertiary care centre in Central India. ***Methods and Material:*** A total of 317 married women were interviewed using a pretested questionnaire. Data were analysed using descriptive statistics, and associations were assessed using the Chi-square test. ***Results:*** Most participants were aware of reproductive tract infections and sexually transmitted infections; however, only 39.8% knew the modes of transmission and 32.5% were aware of preventive measures. Nearly 96% believed that increased awareness could reduce disease prevalence. Only 33.4% sought treatment for genital symptoms. Major barriers to healthcare seeking were lack of time (35.5%) and cultural stigma (28.4%). Education and socioeconomic status were significantly associated with knowledge levels ($p<0.05$). ***Conclusions:*** Strengthening health education, particularly regarding menstruation and menstrual hygiene, is essential to improve awareness, promote timely healthcare seeking, and reduce disease burden.

Keywords: ***Healthcare-seeking behaviour; Knowledge; Reproductive tract infections; Sexually transmitted infections; Urban slums.***

Introduction

"Reproductive health refers to the ability to reproduce in a state of complete physical, mental, and social well-being, and not merely the absence of disease or reproductive disorders. Globally, reproductive health problems contribute substantially to women's morbidity and mortality. In developing countries, nearly one-third of the disease burden among women aged 15–44 years is attributed to pregnancy, childbirth, abortion, and reproductive tract infections (RTIs) [1]."

"Reproductive tract infections (RTIs), including sexually transmitted infections (STIs), remain among the most common yet neglected health problems affecting women in their reproductive years. Despite the availability of effective diagnostic and treatment modalities, a large proportion of cases remain undiagnosed and untreated due to socio-cultural beliefs, poor awareness of symptoms, lack of privacy, unavailability of female healthcare providers, financial constraints, stigma, and fear of internal examinations [2].

"Barriers are particularly more pronounced among urban underprivileged women and significantly limit the effectiveness of prevention and control programs. Beyond their health consequences, RTIs/STIs impose substantial social and economic burdens on women, often leading to stigmatization, domestic violence, or abandonment, especially in low-income settings. These challenges highlight the critical need for preventive strategies, with health education playing a central role in disease control and health promotion [3,4]."

The silence and stigma surrounding RTIs necessitate research into women's knowledge, attitudes, and practices, particularly in marginalized urban communities. Under the National Health Mission (NHM) and National Rural Health Mission (NRHM), multiple demand- and supply-side strategies have been implemented to improve access to reproductive and child health (RCH) services. While these interventions have improved service utilization, persistent gaps and adverse outcomes among slum

Received: December 14, 2025; **Revised:** December 27, 2025; **Accepted:** December 30, 2025

populations remain a major concern. In this context, the present study was undertaken.

Objective

1) To assess the knowledge and attitude of married women residing in urban slums regarding reproductive tract infections (RTIs) and sexually transmitted infections (STIs).
2) To describe their healthcare-seeking behaviour and identify perceived barriers to seeking treatment for RTIs/STIs.

Material and Methods

Study design and study setting

A descriptive cross-sectional study was carried out among 317 married women of reproductive age residing in the urban field practice area of a tertiary healthcare centre in Central India.

Study period

The study was conducted from August 2021 to November 2023.

Inclusion criteria for study

1. Married Women of age group 18-49 years in urban field practice area of a tertiary care centre.

Exclusion criteria for study

1. Subjects who did not give consent for the study.
2. Study subjects who have attained menopause.

Study sample

- With reference to the study done by Ratnaprabha *et al*., assuming prevalence of reproductive tract infections among married women of reproductive age group as 29.15%, sample size is calculated as,
  - Absolute precision = 5
  - Desired Confidence Level (1-α) = 95%

$$n = \frac{Z^2 1-\alpha/2 \times p \times (1-p)}{d^2}$$

Calculated Sample size = 317

Data collection procedure

- Data collection was started after obtaining clearance from Institutional Ethics Committee. House to house survey was done. Before starting the interview, study participants were well informed about the nature of the study and written informed consent for each study subjects was taken.
- After reaching the area of sample collection, for selecting the lane for the study, a pen was rotated and the area towards which the cap end of the pen pointed that lane was selected. Now for selecting the houses in that particular lane, a coin was flipped and for e.g. If it showed heads then the houses present on the right side of the lane were selected and if tails then the left side houses were selected. This method was repeated for selection of houses till the desired sample size was achieved.

The principal investigator conducted face-to-face interviews with the study participants in the local language (Marathi) using a predesigned proforma, after establishing rapport. Each interview lasted approximately 20 minutes. On average, 10–15 participants were interviewed per day, followed by a complete clinical examination. Interviews were carried out at the participants' residences, and if a respondent was not available, the next household was approached.

Predesigned and pretested proforma was used for the data collection.

Data management and analysis

- Collected data were checked, edited at the end of the day during the period of data collection.
- Data were entered in Microsoft Excel 2019 and was rechecked and cleaned after entry to ensure quality of data.
- Data analysis was done using Microsoft Excel 2019.
- Continuous variables: Summarized as mean with standard deviation.
- Categorical variables: Summarized in terms of proportion, frequency and percentage.
- Associations between categorical data were tested using Chi-square (χ^2) test and p-value < 0.05 was considered statistically significant.

Results

In Table I it was seen that majority i.e. 143 (45.11%) study subjects were aged between 26 to 33 years. The age of study subjects ranged between 20 to 49 years, with mean age in years 33.82 ± 6.64 (SD). Present study showed that, majority of 112 (35.33 %) study subjects were educated up to Middle School followed by 76 (23.97 %) study subjects were educated up to High School. Present study also revealed that according to modified Kuppuswamy scale, majority of 205 (64.67 %) study subjects were from upper lower class of socioeconomic status followed by 107 (33.75%) study subjects were from lower middle class.

In Table II it was seen that majority i.e. 210 (66.24%) of study subjects had heard of diseases that can be transmitted through sexual intercourse but only 126 (39.75%) study subjects knew about the modes of transmission of RTI/ STI and 103 (32.50%) study subjects knew the precautions of STIs.

In Figure I it was seen that 127 (40.1%) study subjects responded vaginal discharge as a symptom of RTI/STI, followed by 71 (22.3%) genital itching, 29(9.1%) burning pain during micturition, 20 (6.3%) ulcers/ sores in genitalia, 15(4.7%) fever, 11(3.5%) lower abdominal pain respectively and 1 (0.3%) study subject mentioned bleeding. In the present study, 154 (48.5%) study subjects were not aware regarding any symptoms of RTI/STI.

In Table III it was seen that majority of study participants had positive attitude regarding RTI/STI. 304 (95.90%) agreed that increasing awareness regarding modes of transmission can reduce prevalence of RTI/STI. Majority i.e. 310 (97.80%) study subjects felt that every infected person with RTI/STI should take treatment and 293 (92.43%) agreed that if a woman is infected, her husband should get tested and receive appropriate treatment. 233 (73.50%) study subjects felt that appropriate treatment of infected individuals with RTI/STI can prevent further spread of diseases.

In Figure II it was seen that 106 (33.44%) study participants sought treatment the last time they had any unusual genital discharge, genital ulcers or sores. Out of these 106 study participants who received treatment, only 24 (7.57%) study participant's husband received the treatment.

In Figure III it was seen that, out of the 106 study subjects who sought treatment the last time they had any unusual genital discharge, genital ulcers or sores, 71 (66.98%) study participants sought treatment in government hospital, followed by 27 (25.47%)

in private hospital and 8 (7.55%) study subjects opted pharmacy as the place of treatment for RTI/STI. None of the study subjects went to local healer for treatment.

Table IV showed that awareness of RTIs/STIs was significantly higher among women with higher education (χ^2 = 18.56, p = 0.002) and higher socioeconomic status (χ^2 = 12.84, p = 0.002). No significant associations were observed for knowledge of transmission or preventive measures. Statistical associations were not performed for attitude, healthcare-seeking behaviour, and perceived barriers, as responses were largely uniform, treatment-seeking was limited, and barriers were multiple-response variables; these are therefore presented descriptively.

In Table V it was seen that the most commonly reported barrier was lack of time and household responsibilities, reported by 35.5% of participants, followed by cultural stigma or embarrassment (28.4%). Financial constraints were reported by 21.3% of the respondents. Other notable barriers included lack of privacy at health facilities (14.2%) and fear of disclosure to family or partner (11.8%).

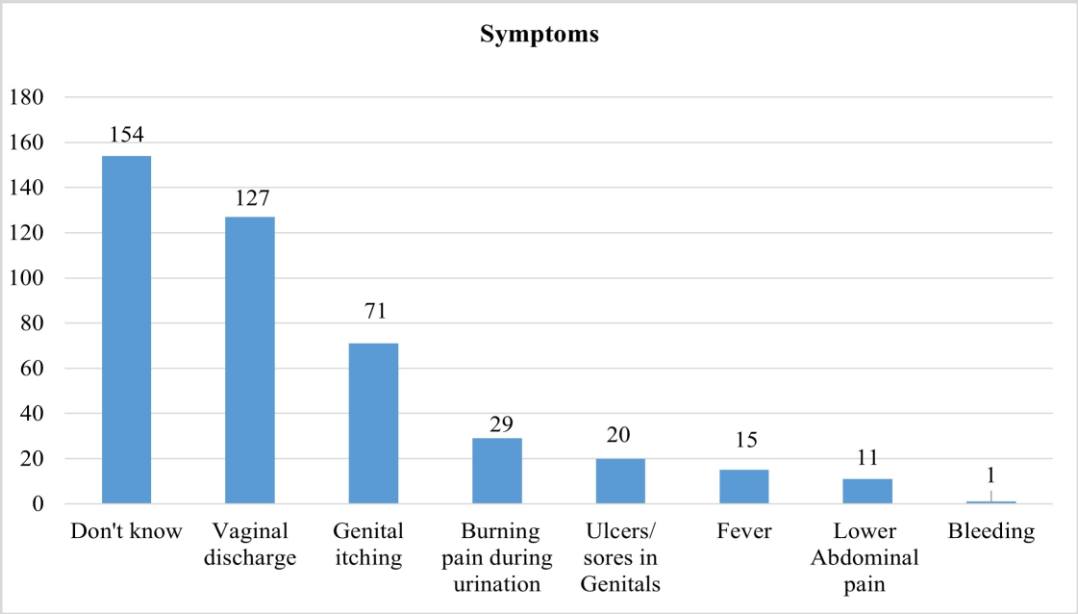
Table I: Distribution of Study Subjects According to Socio-Demographic Profile

Age	**Number of Subjects**	**Percentage**
18-25	29	09.15%
26-33	143	45.11%
34-41	89	28.07%
42- 49	56	17.67%
Education	**Number of Subjects**	**Percentage**
Professional degree or honours	00	00
Graduate or postgraduate	48	15.14%
Intermediate or post high school diploma	58	18.30%
High school certificate	76	23.97%
Middle school	112	35.33%
Primary school	07	02.21%
Illiterate	16	05.05%
Socioeconomic Status	**Number of Subjects**	**Percentage**
Upper(I)	00	00
Upper Middle(II)	05	01.58%
Lower Middle (III)	107	33.75%
Upper Lower (IV)	205	64.67%
Lower(V)	00	00
Total	317	100%

Mean age in years (SD): 33.82 (6.64); Range: 20-49 YEARS

Table II: Knowledge Regarding Reproductive Tract Infections and Sexually Transmitted Infections Among Study Participants (N = 317)

Distribution as per Knowledge	**Study Subjects (n = 317)**					
	Yes		**No**		**No comment**	
	n	**%**	**N**	**%**	**n**	**%**
Have you ever heard of diseases that can be transmitted through sexual intercourse?	210	66.24%	103	32.50%	04	01.26%
Do you know what are the modes of transmission of RTI/ STI?	126	39.75%	184	58.05%	07	2.21%
Do you know the precaution of STI?	103	32.50%	211	66.56%	03	0.94%



* *Multiple response*

Figure I: Awareness of Symptoms of RTIs/STIs Among Study Participants

Table III: Attitude Regarding RTIs/STIs Among Study Participants (N = 317)

Distribution as per Attitude	Study Subjects					
	Agree		Disagree		No comment	
	n	%	n	%	n	%
I feel that increase in awareness regarding modes of transmission of RTI/STI can reduce its prevalence.	304	95.90%	04	1.26%	09	2.84%
Despite taboos and discrimination, I feel that every infected person with RTI/STI should take treatment.	310	97.80%	03	0.94%	04	1.26%
I feel if a woman is infected, her husband should get tested & receive appropriate treatment if required.	293	92.43%	10	3.16%	14	4.41%
I feel that appropriate treatment of infected individuals can prevent the spread of diseases.	233	73.50%	57	17.98%	27	8.52%

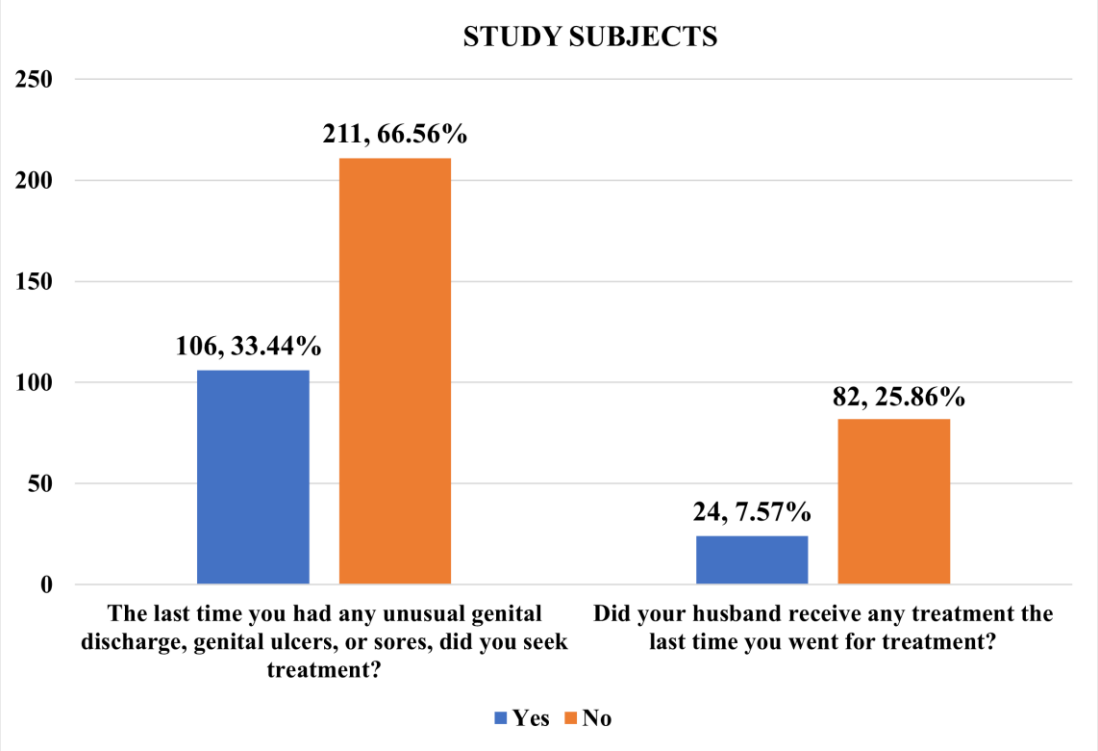


Figure II: Healthcare-Seeking Behaviour For RTI/STI Symptoms Among Study Participants (N = 317)

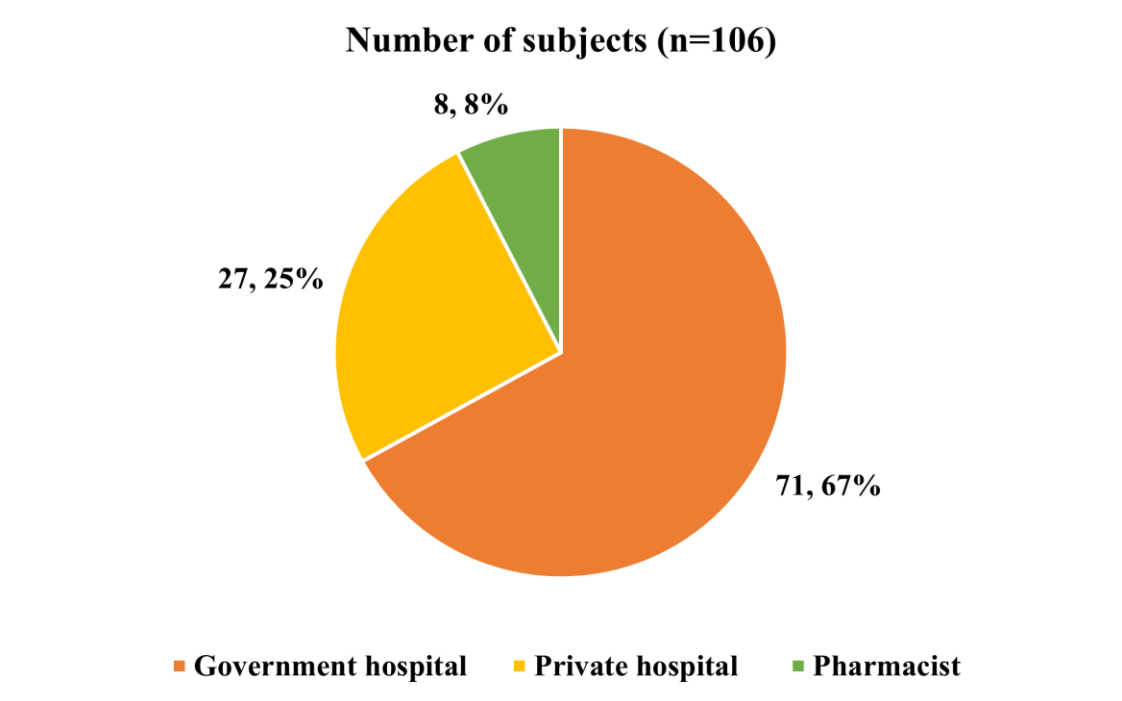


Figure III: Place of Healthcare-Seeking for RTI/STI Symptoms Among Symptomatic Participants (N = 106)

Table IV: Association of Education and Socioeconomic Status with Knowledge of RTIs/STIs Among Study Participants (N = 317)

Knowledge Variable	Education χ^2 (p-value)	SES χ^2 (p-value)
Heard of RTIs/STIs	18.56 (0.002)	12.84 (0.002)
Modes of transmission	8.12 (0.147)	6.77 (0.034)
Precautions	4.87 (0.432)	2.98 (0.225)

Table V: Perceived barriers to healthcare-seeking among participants who did not seek treatment for RTI/STI symptoms (n = 211)

Perceived Barrier	Frequency	Percentage
Lack of time / household responsibilities	75	35.5 %
Cultural stigma / embarrassment	60	28.4 %
Financial constraints	45	21.3 %
Lack of privacy at health facilities	30	14.2 %
Fear of disclosure to family/partner	25	11.8 %

Discussion

The present cross-sectional study among 317 reproductive-age women in an urban slum area of Central India demonstrated that although more than half of the participants had heard about reproductive tract infections and sexually transmitted infections, comprehensive knowledge regarding symptoms, modes of transmission, and preventive measures remained inadequate. While attitudes towards prevention and treatment were largely positive, healthcare-seeking behaviour was suboptimal, with education and socioeconomic status emerging as significant determinants of awareness.

Most participants (45.11%) were aged 26–33 years, with a mean age of 33.82 ± 6.64 years, in line with previous Indian studies (Sharma *et al*., 2017; Patil *et al*., 2018). Educational levels were low, with 35.33% up to middle school, and 64.67% belonged to the upper-lower socioeconomic class, consistent with findings from other urban slum populations (Sharma *et al*., 2017; De Anindita *et al*., 2018).

Although 66.24% of women were aware of reproductive tract infections and sexually transmitted infections, knowledge gaps were evident, as less than half knew the modes of transmission and only one-third were aware of preventive measures. Vaginal discharge and genital itching were the most commonly recognized symptoms. Similar deficiencies in comprehensive knowledge have been reported in earlier studies (Sharma *et al*., 2017; Patil *et al*., 2018).

Public healthcare facilities were preferred by most participants, reflecting accessibility and affordability, and aligning with findings from comparable settings (De Anindita *et al*., 2018; Sharma Prajna *et al*., 2017). Attitudes were largely positive: 95.90% agreed that awareness reduces prevalence, 97.80% supported treatment for infected individuals, and 92.43% agreed that husbands should also get tested. Furthermore, 73.50% believed that appropriate treatment prevents disease spread, as reported by Al-Batanony *et al*. (2016).

Despite favourable attitudes, healthcare-seeking behaviour remained limited, with only one-third of women seeking treatment for symptoms and very low treatment uptake among husbands. These results are comparable to other urban slum studies reporting low healthcare-seeking rates (Yadav *et al*., 2025). Perceived barriers included lack of time, cultural stigma, fear of disclosure, and financial constraints.

Education and socioeconomic status were significantly associated with awareness of STIs ($\chi^2 = 18.56$, $p = 0.002$; $\chi^2 = 12.84$, $p = 0.002$). No significant association was observed for knowledge of transmission or preventive measures, consistent with findings from Kumari *et al*. (2023), Anandan *et al*. (2024), and Patil *et al*. (2018). (2024), and Patil *et al*. (2018).

In Conclusion

Building upon these findings, the study underscores that although awareness of reproductive tract infections and sexually transmitted infections exists among married women of reproductive age, it does not translate into adequate knowledge or appropriate healthcare-seeking practices. While attitudes towards reproductive health were encouraging, persistent sociocultural and practical barriers continued to limit timely care-seeking.

Strengthening health education from an early age, promoting regular screening and early treatment, and reinforcing community-based information, education, and communication strategies are essential to improve utilisation of reproductive health services and reduce the burden of infections among women residing in urban slums.

Declarations

Ethical Clearence

The study was conducted in strict adherence to ethical standards, with prior approval from the Institutional Ethics Committee (No. 1481), dated 15/1/2021 and informed consent obtained from all participants.

Funding

No external funding was received for this study.

Conflict of Interest

The authors declare no conflict of interest

Acknowledgement

I express my sincere gratitude to Dr. Uday Narlawar, Professor and Head, Department of Community Medicine, Government Medical College and Hospital, Nagpur, for his invaluable guidance, constant encouragement, and insightful suggestions throughout the planning, execution, and completion of this study. I am also thankful to all the study participants and those who directly or indirectly supported this research.

References

[1] Ratnaprabha GK, Thimmaiah S, Johnson AR, Ramesh N. Prevalence and awareness of reproductive tract infections

among women in select under privileged areas of Bangalore city. Int J Med Sci Public Health. 2015 Dec 1;4(12):1691-96.

[2] Patil P, Rao A. Study of reproductive hygiene among married women at urban field practice area, Dharwad. Int. J. Commun. Med. Public Health. 2018 Oct;5:4393.

[3] 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 Journal of Community Health. 2016 Mar 31;28(1):78-83.

[4] Hegde SK, Agrawal T, Ramesh N, Sugara M, Joseph PM, Singh S, Thimmaiah S. Reproductive tract infections among women in a peri-urban under privileged area in Bangalore, India: Knowledge, prevalence, and treatment seeking behavior. Annals of Tropical Medicine & Public Health. 2013 Mar 1;6(2).

[5] Viramgami AP, Verma PB, Vala MC, Sharma S. A cross-sectional study to assess reproductive and child health profile of working women residing in urban slums of Rajkot City. Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine. 2019 Oct;44(4):313.

[6] Raikwar R, Sharma KK. Health Profile and Reproductive Performance of Korku Tribal Women of Betul District, Madhya Pradesh. Indian Journal of Research in Anthropology. 2015 Jul;1(1).

[7] Rath RS, Gupta V, Silan VK, Anant G, Farhad A, Vijay S. Knowledge, attitude and practices about sexually transmitted infections/reproductive tract infections (STIs/RTIs) in married women of rural Haryana. Indian Dermatol Online J. 2015;6(1):9–12.

[8] Gawade S, Gawade S, Gore H. Knowledge and health seeking behaviour regarding reproductive tract infections among married women of reproductive age residing in the urban slum area. Int J Med Public Health. 2025;15(1):722–726.

[9] Bhilwar M, Lal P, Sharma N, Bhalla P, Kumar A. Prevalence of reproductive tract infections and their determinants in married women residing in an urban slum of North-East Delhi, India. J Nat Sci Biol Med. 2015;6(Suppl 1):S29–S34.

[10] Agarwal AK, Mishra J, Verma PK, Mahore R, Verma R. Knowledge, attitude and treatment seeking behaviour for reproductive tract infections (RTI) and sexually transmitted infections (STIs) among married women attending Suraksha Clinic, Madhya Pradesh, India. Glob J Med Public Health. 2022;11(2).

[11] Doley P, Yadav G, Gupta M, Muralidhar S. Knowledge, health seeking behavior and barriers for treatment of reproductive tract infections among married women of reproductive age in Delhi. Int J Reprod Contracept Obstet Gynecol. 2021;10(2):591–596.

[12] Prajna S, Sherkhane MS. Knowledge and attitude about sexually transmitted infections among women in reproductive age group residing in urban slums. Int J Community Med Public Health. 2016;4(1):20–24.

[13] Pandit M, Nagarkar A. Determinants of reproductive tract infections among women in urban slums of India. Women's Reproductive Health. 2017 May 4;4(2):106-14.

[14] Rathod DS, Shelke AD, Naik DB, Kesari PM. Prevalence of reproductive tract infections and sexually transmitted infections among married women in the reproductive age group in urban slum of Bidar, Karnataka. Int J Community Med Public Health. 2017;4(11):4182–4186.

[15] Kumar Patel P, Singh TB, Singh SK, Singh S. Awareness and knowledge of sexually transmitted infections and its associated factors among clinically suspected cases attending a tertiary care hospital in Eastern Uttar Pradesh. Int J Health Sci Res. 2023 Jul;13(7):222-227.

[16] Sonia S, Rajendran S, Kumar S, *et al*. Knowledge and attitude related to sexually transmitted infections and contraceptive use among patients attending the Venereology Outpatient Department in Thiruvallur: A cross-sectional study. Cureus. 2024 Dec 23;16(12):e76281.

[17] Kadri AM. IAPSM's Textbook of Community Medicine., 1st ed. Jaypee Brothers Medical Publishers. 2019.