



KNOWLEDGE, ATTITUDE, AND AWARENESS REGARDING SEXUALLY TRANSMITTED INFECTIONS OTHER THAN HIV AMONG FIRST-YEAR MBBS STUDENTS IN A TERTIARY CARE HOSPITAL

Dermatology

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ABSTRACT

Context: Sexually transmitted infections (STIs) other than HIV remain an important public health concern among young adults. While HIV has received substantial programmatic attention, data on awareness and attitudes regarding non-HIV STIs among first-year medical students at the time of entry into the MBBS curriculum are limited. **Aims:** To assess the knowledge, awareness, and attitudes regarding sexually transmitted infections other than HIV among first-year MBBS students. **Settings and Design:** A cross-sectional, questionnaire-based study conducted at a tertiary care teaching hospital. **Methods and Material:** Consenting first-year MBBS students were enrolled in the study. Data were collected using a pre-designed and pre-validated self-administered questionnaire assessing knowledge of STIs, modes of transmission, symptoms, complications, sources of information, and attitudes towards STIs. **Statistical analysis used:** Data were analysed using SPSS software. Descriptive statistics were applied, and results were expressed as frequencies and percentages. **Results:** Teachers and healthcare professionals were the primary sources of information. Most students demonstrated good awareness of common STIs and major modes of transmission. Knowledge regarding symptoms was satisfactory; however, awareness of lesser-known STIs and long-term complications was limited. Certain misconceptions regarding transmission and prevention persisted. Attitudes towards sex education were predominantly positive, with low levels of stigma towards individuals affected by STIs. **Conclusions:** Although first-year MBBS students showed adequate baseline knowledge of STIs other than HIV, notable gaps and misconceptions remain. Early incorporation of structured sexual health education in the undergraduate medical curriculum is essential to improve knowledge, address misconceptions, and strengthen preventive practices.

KEYWORDS

Sexually transmitted infections; Knowledge; Attitude; Awareness; Medical students; Non-HIV STIs

INTRODUCTION

Sexually transmitted infections (STIs) are a group of infectious diseases transmitted predominantly through sexual contact. They are a major global public-health problem, particularly among adolescents and young adults. The World Health Organization estimates that there are millions of new curable STI infections annually, with the highest burden observed in individuals aged 15–24 years. Beyond their immediate morbidity, STIs contribute substantially to infertility, adverse pregnancy outcomes, chronic pelvic pain, malignancy and an increased risk of acquisition and transmission of human immunodeficiency virus (HIV).^{1,2}

While HIV has received extensive public health attention through public health programmes and awareness campaigns, non-HIV STIs such as syphilis, gonorrhoea, chlamydial infections, trichomoniasis, human papillomavirus (HPV), and genital herpes account for the majority of STI episodes. These infections are often asymptomatic or pauci-symptomatic, facilitating ongoing transmission and delayed care-seeking, and are key drivers of reproductive-age morbidity.^{1,2}

Young people, including university and college students, are at elevated risk for STIs because of a combination of behavioural, biological, and social factors — including, multiple sexual partners, unsafe sexual practices, limited knowledge, limited access to confidential testing and persistent stigma that reduces help-seeking.³

Medical students represent a particularly important group in this context because they are both part of the sexually active young adult population and the future providers of STI prevention and care. However, medical students, particularly in the early years of training, may have incomplete knowledge and misconceptions regarding STIs. First-year MBBS students, in particular, enter medical training with knowledge largely derived from school education and informal sources, making this an appropriate stage to assess baseline awareness and attitudes before formal clinical exposure.

The present study was therefore undertaken to assess the knowledge, awareness and attitudes regarding sexually transmitted infections other than HIV among first-year MBBS students in a tertiary care teaching hospital in Bengaluru.

Study design and setting

A cross-sectional, questionnaire-based study was conducted among first-year MBBS students at a tertiary care centre in Bengaluru, Karnataka.

Study population and sample size

All first-year MBBS students aged 18–22 years who were present during the period of data collection and willing to participate were included in the study. A total of 300 students were enrolled. Students who did not provide consent or returned incomplete questionnaires were excluded.

Study tool

Data were collected using a structured, self-administered questionnaire designed to assess knowledge, awareness and attitudes regarding sexually transmitted infections (STIs) other than HIV. The questionnaire consisted of sections covering:

1. Socio-demographic details (age, gender and place of stay)
2. Knowledge of common STIs, causative agents, modes of transmission, symptoms and complications
3. Sources of information related to STIs
4. Attitudes towards sexual practices, sex education and people affected by STIs

The questionnaire was reviewed for content validity by 2 faculty members from the Department of Dermatology, Venereology and Leprology and 1 faculty from community medicine and was pre-tested on 20 students prior to the study.

DATA COLLECTION

After explaining the purpose of the study, informed consent was obtained from all participants. The questionnaires were distributed and completed anonymously during classroom hours to ensure confidentiality and minimize response bias.

Ethical considerations

The study was approved by the Institutional Ethics Committee. Participation was voluntary, and confidentiality of the participants was strictly maintained throughout the study.

STATISTICAL ANALYSIS

SUBJECTS AND METHODS:

Data were entered into Microsoft Excel and analysed using appropriate statistical software, SPSS V.20. Descriptive statistics were used to summarize the data. Results were expressed as frequencies and percentages.

RESULTS

Participant characteristics

Of the 300 first-year MBBS students included in the study, 167 (55.7%) were males and 133 (44.3%) were females. Nearly half of the students were day scholars staying with family (144, 48.0%), while 156 (52.0%) resided in hostels or paying-guest accommodations.

Sources of information

Teachers constituted the primary source of information regarding sexually transmitted infections, with additional sources listed in Table 1.

Table 1: Source of information regarding STI

Source Of Information	n (%)
Teachers	210 (70 %)
Doctors/Hospitals	168 (56.3 %)
Internet	114 (38%)
Newspaper and Magazine	109 (36.6 %)
TV/ radio	110 (36.5 %)
Parents	14 (4.7%)
Friends	9 (3%)
Relative	2 (1.4 %)

knowledge of STIs

Almost all students (n=298, 99.3%) had heard of STIs, and 260 (86.7%) reported awareness of STIs other than HIV. HIV/AIDS (99.7%) and genital warts (93.0%) were the most commonly known infections, whereas awareness of chancroid (26.0%) and lymphogranuloma venereum (25.8%) was limited.

Table 2: knowledge of STIs

Sexually transmitted infections	n (%)
HIV/AIDS	298 (99.7%)
Genital warts	279 (93%)
Syphilis	231(77%)
Hepatitis B	207 (69%)
Gonorrhea	198 (66%)
Genital Herpes	195 (65%)
Chancroid	78 (26%)
LGV	77 (25.8%)

A majority correctly identified viruses (80.3%) and bacteria (50.6%) as causative agents of STIs. Most students recognized multiple sexual partners (90.5%) and unprotected sex (72.0%) and sex outside marriage (40%) as important predisposing factors, whereas fewer participants considered premarital sex (18.0%) or alcohol and drug abuse (12.6%) as risk behaviours.

Perceived transmission routes, symptoms, and complications

Students demonstrated adequate knowledge of established routes of STI transmission; however, incorrect beliefs regarding transmission through casual contact were also noted, as presented in Table 3.

Table 3: Knowledge about transmission of STIs

Mode of transmission	n (%)
Blood transfusion	291 (97%)
Sharing the infected needle	276(92%)
Prostitution	272 (90.5%)
Mother to child transmission	267 (89%)
Poor hygiene	255(85%)
Not using condoms	180 (60%)
kissing	59 (19.6 %)
Sharing the same toilet	35 (11.5%)
Mosquito bite	33 (11%)
Shaking hands with infected person	12 (4%)
Sharing clothes	9 (3%)

Regarding symptoms, fever was identified by 91.0% of students as a manifestation of sexually transmitted infections, followed by genital ulcers (90.0%) and vaginal or urethral discharge (87.5%). Dysuria was recognised by 81.0% of participants, while swelling in the groin and abdominal pain were identified by 79.0% and 75.0% of students, respectively. Overall, 75.0% of students felt that all the listed symptoms could be associated with STIs. However, 12.0% of

participants were unable to identify any symptom suggestive of an STI. Infertility (54.7%) was the most commonly recognized complication, followed by cervical cancer (48.6%) and abortion (44.6%), while 55.0% believed that all three complications could result from STIs.

Attitudes towards STIs and sexual practices

Only 17.0% of students felt that masturbation was harmful to health, whereas 58.0% disagreed and 20.0% were unsure. A large majority (95.3%) supported inclusion of sex education in schools and colleges. Nearly half (48.6%) believed that banning prostitution could reduce the spread of STIs, and 60.0–62.2% disagreed that premarital sex or having a partner who had sex before marriage necessarily contributed to STI spread.

Most students (83.0%) did not support isolation of people with STIs, indicating relatively non-stigmatizing attitudes. However, 33.8% incorrectly believed that emergency contraceptive pills could prevent STIs, and 17.6% thought that HIV/AIDS is curable, highlighting persisting misconceptions regarding prevention and prognosis. (table 4)

Table 4: Attitudes towards STIs and sexual practices

Attitude	Agree	Disagree	Do not know
Masturbation harmful	51 (17%)	174 (58%)	60 (20%)
Sex Education should be made mandatory	286 (95.3 %)	12 (4.1%)	3 (1%)
Banning of prostitution	146 (48.6 %)	99 (33%)	54 (18%)
Pre-marital sex	63 (21%)	187 (62.2%)	53 (17.6%)
Sex before marriage	66 (22%)	182 (60.8%)	53 (17.6%)
Isolation of infected patients	87 (29.1%)	180 (60%)	32 (10.8 %)
Emergency Contraceptive use prevents STIs	101(33.8%)	126 (42%)	69 (23%)
HIV Cure	53 (17.6%)	198 (66%)	49 (16.2%)

DISCUSSION

Our study assessed the knowledge, awareness and attitudes regarding sexually transmitted infections other than HIV among first-year MBBS students. Overall, the findings indicate that most students possessed a reasonable level of awareness about common STIs and their modes of transmission; however, important gaps and misconceptions were identified, particularly with respect to lesser-known infections, complications and preventive measures.

In the present study, teachers and healthcare professionals were the most commonly reported sources of information regarding STIs, which is in concordance with the findings of Subbarao et al.¹ and Gupta et al.⁵ In contrast, other studies have reported the internet as the predominant source of information, particularly among students from non-medical backgrounds and adolescents.^{6,7} The increasing reliance on online platforms for sexual health information reflects changing information-seeking behaviour among young individuals. While internet-based sources may improve accessibility, they also carry a risk of inaccurate or incomplete information, which may contribute to the persistence of misconceptions observed in the present study. These findings highlight the need for structured, evidence-based sexual health education within the medical curriculum to supplement informal sources of information.

In this study, awareness of common STIs such as syphilis, gonorrhoea, genital herpes and genital warts was high, whereas knowledge of chancroid and lymphogranuloma venereum was low, a pattern also noted by Subbarao et al.,⁷ likely reflecting greater exposure to school-level health education for the former and declining clinical prevalence with limited preclinical emphasis for the latter.

Most students demonstrated good knowledge regarding major modes of transmission such as unprotected sexual intercourse, blood transfusion and sharing of infected needles. However, misconceptions regarding transmission through poor hygiene and casual contact were also observed. Similar misconceptions have been reported in earlier studies.⁶⁻⁸ This suggests that inaccurate beliefs regarding STIs continue to persist among young individuals, underscoring the need for structured and comprehensive sexual health education.

Although awareness regarding common symptoms of STIs was satisfactory in the present study, knowledge about complications was comparatively limited. While infertility and cervical cancer were

recognised by a substantial proportion of students, fewer participants were aware of the broader spectrum of long-term complications associated with STIs. Similar gaps in awareness regarding complications have been reported among students from non-medical backgrounds in India and among university students in other settings.^{7,9} In addition, studies conducted among medical students have also demonstrated incomplete knowledge of the long-term consequences of STIs.¹⁰ Improving understanding of STI-related complications is important, as this may promote early health-seeking behaviour and reinforce adherence to preventive and treatment practices.

Assessment of attitudes revealed generally positive perceptions towards sex education and non-stigmatizing views towards individuals affected by STIs. The majority of students supported the inclusion of sex education in schools and colleges, which aligns with findings from other Indian studies.^{2,5} However, misconceptions regarding the role of emergency contraceptive pills in preventing STIs and mixed attitudes towards premarital sexual practices were noted, indicating areas where targeted educational interventions are required.

Most earlier studies assessing knowledge and attitudes regarding sexually transmitted infections have predominantly focused on school students and adolescents, with a greater emphasis on HIV/AIDS⁵⁻⁸. Although a few studies have evaluated awareness among the general population¹¹⁻¹³ and university students⁷, data specifically addressing non-HIV sexually transmitted infections remain limited. Furthermore, studies focusing on first-year medical students, particularly at the time of entry into the MBBS curriculum, are scarce. This group represents a critical transitional phase, wherein students commence professional medical training with variable baseline knowledge of sexual health, often influenced by prior school-level education that disproportionately highlights HIV. Hence, the present study was undertaken.

CONCLUSION

The present study highlights that first-year MBBS students demonstrated a high overall level of awareness regarding sexually transmitted infections other than HIV, particularly with respect to modes of transmission and symptoms. However, important gaps were identified in knowledge related to lesser-known STIs, and certain misconceptions regarding transmission and prevention.

These findings underscore the need for early, structured and comprehensive sexual health education within the undergraduate medical curriculum. Addressing misconceptions and strengthening knowledge regarding non-HIV STIs during medical training may help future physicians play a more effective role in prevention, early diagnosis and patient education.

Limitations

This was a cross-sectional, single-centre study, which limits the generalizability of the findings. Data were based on self-reported responses and may be subject to recall and social desirability bias. The study assessed knowledge and attitudes but did not evaluate actual sexual behaviour or practices.

Key Messages

This study identifies critical gaps in knowledge of non-HIV sexually transmitted infections among first-year MBBS students at entry into medical training, particularly regarding complications and prevention. Early, structured sexual health education is essential to correct misconceptions and strengthen future STI prevention and counselling practices.

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