



Knowledge, Attitude and Perceptions of Nursing Students Towards Contraceptive Practices And Sexually Transmitted Infections: A Questionnaire-Based Study

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Abstract

Introduction: Sexually transmitted infections (STIs) and inadequate contraceptive awareness continue to remain major public health challenges among young adults. Nursing students represent a critical group who will serve as future healthcare providers and reproductive health counselors. Assessing their knowledge, attitudes, and perceptions regarding

contraception and STIs is therefore essential for identifying gaps and strengthening sexual and reproductive health (SRH) training.

Aims and objectives

- To assess the knowledge, attitudes, and perceptions of nursing students regarding contraceptive practices and sexually transmitted infections, and to identify

factors influencing their awareness and preventive behaviours.

- To evaluate the attitudes and perceptions of nursing students toward the use of contraceptives and sexually transmitted infections prevention practices.

Materials & Methods: A cross-sectional, questionnaire-based study was conducted among B.Sc. Nursing students at a tertiary institution in Mangalore. A total of 165 students were approached using convenience sampling, of whom 160 completed the questionnaire and were included in the final analysis. Data were collected using a pretested, structured questionnaire covering sociodemographic characteristics, contraceptive and STI knowledge, attitudes, and perceptions. Descriptive statistics were used to summarize responses, while associations between year of study and knowledge level were analyzed using the Chi-square test with a significance level of $p < 0.05$.

Results: Participants had a mean age of 20.4 years, with females comprising 82.5% of the sample. While 94.3% had heard of modern contraceptives, misconceptions persisted, particularly regarding emergency contraception and protection against STIs. Knowledge improved significantly from first to fourth year ($\chi^2 = 10.92$, $p = 0.018$), with 68.6% of final-year students demonstrating good knowledge compared to 31.4% of first-year students. Positive attitudes were evident, with 74.3% supporting open contraceptive education, though cultural hesitancy remained a barrier for many students.

Conclusion: Academic progression positively influences SRH knowledge and attitudes among nursing students. Early curriculum reinforcement, interactive teaching methods, and stigma-free learning environments are essential to enhance future nurses' competence in contraceptive counseling and STI prevention.

Keywords: Nursing students, Contraceptive knowledge, sexually transmitted infections, Attitudes and perceptions, Reproductive health

Introduction

Sexually transmitted infections (STIs) and inadequate contraceptive utilization continue to pose significant global public health challenges, particularly among adolescents and young adults. According to the World Health Organization (WHO), more than one million new STIs are acquired each day worldwide, with an estimated 374 million new infections annually from chlamydia, gonorrhea, syphilis, and trichomoniasis ¹. Parallel to the rising global burden of STIs is the persistent issue of unmet contraceptive needs. Nearly 270 million women of reproductive age are reported to have unmet needs for modern contraception, leading to unintended pregnancies, unsafe abortions, and associated morbidity ². These dual concerns highlight the need for robust sexual and reproductive health (SRH) education, especially for young populations engaged in health sciences.

Nursing students constitute a particularly important group within this context, as they will play a central role in future healthcare delivery and community health education. Their knowledge, attitudes, and perceptions toward contraceptive practices and STI prevention are essential not only for their personal health, but also for their effectiveness as health educators and counselors. Despite this, multiple studies from low- and middle-income countries describe an alarming gap in SRH knowledge among nursing and allied health students. For instance, a study among university students in Bhutan reported that while condom use was common, only 53% had good STI knowledge, and misconceptions—such as believing that oral contraceptive pills prevent STIs—

were widespread³. Similar trends have been documented across diverse settings, including studies covering university students in 22 countries, where misconceptions, stigma, and limited access to reproductive health information contributed to low rates of modern contraceptive use⁴.

Evidence suggests that sociocultural norms, taboos surrounding premarital sexuality, and inadequate SRH-focused curricula significantly contribute to low awareness and unfavorable attitudes among health science learners⁵. In South Asia, this issue is particularly prominent. A study among female students in Bangladesh found suboptimal awareness of HIV/AIDS, STIs, and contraceptive options, highlighting weaknesses in formal reproductive health education⁶. Likewise, Nigerian tertiary students demonstrated poor understanding of HPV transmission and preventive practices, emphasizing the global persistence of knowledge gaps even among educated youth⁷.

Within India, existing literature consistently indicates only partial awareness of contraceptive methods among nursing students, accompanied by pervasive misconceptions. A North Indian study reported that although 87% of nursing students had heard of modern contraceptives, less than half understood emergency contraception correctly, and many believed that oral contraceptive pills protected against STIs⁸. Other regional studies have demonstrated similar deficiencies in both knowledge and practice regarding condom use and understanding of common STI symptoms⁹. These knowledge gaps are often compounded by cultural hesitancy to discuss sexual health openly, further impeding effective learning.

Misconceptions regarding contraceptive efficacy, STI transmission routes, and perceived risk continue to

influence attitudes and behaviors. Adolescents and young adults frequently underestimate their susceptibility to STIs, and they may engage in high-risk behaviors without adopting protective practices¹⁰. Studies from various countries demonstrate that although positive attitudes toward SRH information exist, they do not necessarily translate into consistent preventive behavior¹¹. This disparity underscores the importance of evaluating not only knowledge but also attitudes and perceptions among nursing students.

Given rising STI prevalence, the ongoing unmet need for contraception, and the critical role nursing students will play in reproductive health counseling, it is essential to assess their current knowledge, attitudes, and perceptions. Such assessment provides insight into educational gaps and guides evidence-based interventions aimed at strengthening SRH competency. This study therefore aims to evaluate these components among nursing students in a tertiary institution in India, thereby contributing to improved curriculum planning and the development of targeted awareness programs.

Aims and Objectives

1. To assess the knowledge, attitudes, and perceptions of nursing students regarding contraceptive practices and sexually transmitted infections, and to identify factors influencing their awareness and preventive behaviours.
2. To assess the level of knowledge among nursing students regarding contraceptive methods and sexually transmitted infections.
3. To evaluate the attitudes and perceptions of nursing students toward the use of contraceptives and sexually transmitted infections prevention practices.

Materials and Methods

A hospital based cross-sectional study was conducted among the nursing students (1st to 4th year B.Sc. Nursing) studying at Laxmi Memorial College of Nursing, Mangalore, aged 18-35 years. The minimum sample size was calculated as 150 using a 53.2% prevalence of adequate STI knowledge (Dorji et al., 2022), with a 95% confidence level and 8% precision, and increased to 165 to account for non-response. Convenience sampling was used.

Inclusion Criteria

1. Nursing students enrolled in B.Sc. Nursing (1st to 4th year) at Laxmi Memorial College of Nursing, Mangalore.
2. Students willing to participate and provide informed written consent.

Exclusion Criteria

1. Students absent during data collection.
2. Incomplete or improperly filled questionnaires.
3. Students who decline consent.

Results

A total of 165 nursing students participated in the study, with a response rate of 100%. After scrutiny, 160 questionnaires were considered complete and included in the final analysis, while 5 were excluded due to incomplete responses. The mean age of participants was 20.4 ± 1.6 years, ranging from 18 to 24 years. The study consisted predominantly of female students (82.5%), reflecting the natural distribution within the nursing program. Participants were distributed across all four academic years, with the highest representation from the second year.

Socio-Demographic Profile of Participants:

Table 1 presents the demographic distribution of the study participants. A majority (62.5%) resided in urban areas, and 64.3% belonged to nuclear families. Most students (71.2%) reported accessing reproductive health information through the internet, followed by classroom teaching (61.2%).

Table 1: Socio-Demographic Profile of Participants (n=160)

Variable	Category	Frequency	Percentage
Age (years)	Mean \pm SD: 20.4 ± 1.6		
Gender	Female	132	82.5
	Male	28	17.5
Year of Study	1st Year	35	21.9
	2nd Year	48	30.0
	3rd Year	42	26.3
	4th Year	35	21.9
Residence	Urban	100	62.5
	Rural	38	23.8
	Semi-urban	22	13.7
Major Information Source	Internet	114	71.2
	Teachers	98	61.2

	Friends	48	30.0
	Media/TV	41	25.6

Knowledge of Contraceptive Methods

Table 2 shows the participant response pattern to contraceptive knowledge items. While 94.3% had heard of modern contraceptive methods, only 61.8% knew that

oral contraceptive pills do not prevent STIs, and just 58.7% answered emergency contraception questions correctly.

Table 2: Knowledge of Contraceptive Methods (n=160)

Item	Correct Response	Frequency (%)
Heard of modern contraceptive methods	Yes	151 (94.3)
Condoms prevent both pregnancy and STIs	Yes	138 (86.2)
Oral contraceptive pills prevent STIs	No	99 (61.8)
Emergency contraception effective within 72 hours	Yes	94 (58.7)
Incorrect usage can cause contraceptive failure	Yes	139 (86.8)
Received information in curriculum	Yes	102 (63.7)

Knowledge of Sexually Transmitted Infections:

Knowledge of Sexually Transmitted Infections (STI) ranged widely across participants (Table 3). The most recognized Sexually Transmitted Infection was

HIV/AIDS (91.2%), while only 47.5% correctly recognized syphilis and gonorrhea as common STIs. A sizeable proportion (38.7%) did not know that STIs can be asymptomatic.

Table 3: Knowledge of STIs (n=160)

Item	Correct Response	Frequency (%)
Heard of STIs	Yes	158 (98.7)
HIV recognized as STI	Yes	146 (91.2)
Syphilis recognized as STI	Yes	76 (47.5)
Gonorrhea recognized as STI	Yes	74 (46.2)
STIs can be asymptomatic	Yes	98 (61.3)
HPV is a vaccine-preventable STI	Yes	89 (55.6)

Association between Knowledge Level and Year of Study:

Table 4 shows a statistically significant association between students' year of study and their level of knowledge on contraception and STIs ($\chi^2 = 10.92$, $p = 0.018$). Knowledge improves steadily with academic progression. Among 1st-year students, only 31.4% demonstrated good knowledge, increasing to 41.7% in

2nd year and 54.8% in 3rd year. The highest proportion of good knowledge (68.6%) was seen in 4th-year students, while poor knowledge reduced progressively from 22.9% in 1st year to just 2.8% in final year.

Table 4: Association between Knowledge Level and Year of Study (n=160)

Year of Study	Good (%)	Moderate (%)	Poor (%)	Chi-square	p-value
1st Year (n=35)	31.4	45.7	22.9	10.92	0.018*
2nd Year (n=48)	41.7	37.5	20.8		
3rd Year (n=42)	54.8	35.7	9.5		
4th Year (n=35)	68.6	28.6	2.8		

Attitude toward Contraception and Sexually Transmitted Infection Prevention:

Attitudinal assessment revealed that 74.3% agreed that

contraceptive counseling should be openly discussed, while 43.7% felt embarrassed purchasing condoms at pharmacies. Table 5 summarizes key attitude responses.

Table 5: Attitude Toward Contraception and STI Prevention (n=160)

Statement	Agree/ Strongly Agree (%)
Discussing contraception before marriage is acceptable	65.6
Contraceptive education must be included in all health courses	74.3
Condom use reduces sexual pleasure	38.1
Embarrassment exists in purchasing condoms at pharmacies	43.7
Both genders share equal responsibility in STI prevention	81.8
Comfortable discussing sexual health with a healthcare provider	62.5

Perceptions and Preventive Behaviors:

Perceptual responses demonstrated that 71.2% were willing to undergo STI screening, and 84.3% believed

that open sexual health discussion reduces stigma. However, 46.9% identified cultural taboos as a barrier to contraceptive use (Table 6).

Table 6: Perceptions and Preventive Behaviors (n=160)

Item	Response (%)
Believe they are at risk of STI	39.3
Willing to undergo STI screening	71.2
Would recommend contraception to peers	76.8
Believe discussion reduces stigma	84.3
Cultural taboos hinder contraceptive use	46.9
Fear of side effects creates resistance	38.1

Discussion

Sexual and reproductive health (SRH) knowledge among nursing students is critical, as they will serve as primary health educators and counselors in clinical and community settings. Understanding their existing knowledge, attitudes, and perceptions toward contraception and sexually transmitted infections (STIs)

is therefore essential for identifying educational gaps and strengthening professional training. The present study examined nursing students across different academic years to assess how educational exposure influences reproductive health competency. By evaluating their performance and comparing findings with similar research conducted in India and internationally, this

discussion aims to interpret the results in context, highlight emerging trends, and propose steps for improving SRH education within nursing curricula.

In this study, only 31.4% of first-year students demonstrated good knowledge, compared to 68.6% of final-year students, indicating steady improvement with each academic level. Similar results were reported in a study among university students in Bhutan, where senior students demonstrated significantly higher STI awareness due to ongoing educational engagement and exposure to reproductive health modules³. Peltzer and Pengpid, in a multi-country assessment involving 22 nations, also observed that senior students consistently scored higher in reproductive health knowledge, attributing this difference to academic maturity and classroom exposure⁴. These findings reinforce the present study, highlighting that cumulative learning contributes to deeper conceptual understanding.

While awareness of modern contraceptives was high in our study (94.3%), misconceptions persisted, such as over one-third of students incorrectly believing that oral contraceptives offer protection against STIs. Such misconceptions have been widely documented. A South Indian study found that although most nursing students had heard of emergency contraception, fewer than half understood its correct use and limitations⁹. A study among Bangladeshi students likewise reported widespread misconceptions despite general awareness, emphasizing that information alone is insufficient unless coupled with structured, scientifically accurate teaching⁶. Therefore, academic exposure must be accompanied by active clarification of myths, case-based teaching, and reinforcement through clinical examples.

Attitudes toward sexual health in the present study were generally positive, with 74.3% agreeing that

contraceptive education should be discussed openly. However, 43.7% expressed embarrassment in purchasing condoms, reflecting the influence of cultural stigma. Cultural hesitancy in discussing sexual health is not unique to this setting. A Nigerian study found that cultural taboos and fear of judgment limited open reproductive health conversations among college students⁷. This suggests the need for pedagogical strategies that foster open communication, normalize discussions, and allow students to engage without fear of stigma. Methods such as small group teaching, simulated counseling interactions, and guided discussions could help overcome reticence.

The perception findings were also encouraging. Over 70% of students were willing to undergo STI screening, and 84.3% believed that open sexual health discussion reduces stigma. Similar observations were reported by Davis et al., who noted that clinical exposure increased willingness among nursing students to recommend sexual health services and counsel openly¹⁰. Gothwal et al. also found that experienced nursing trainees demonstrated greater ease and confidence in discussing contraceptive choices due to cumulative patient interaction⁸. Thus, clinical exposure and professional responsibility play essential roles in shaping positive perceptions.

The progression in knowledge and attitudes observed in this study underscores the importance of introducing reproductive health education early in nursing training. The relatively lower competency among first-year students suggests a need to make sexual and reproductive health components more visible in the initial academic year. Enhanced educational strategies—such as peer-assisted learning, digital resources, interactive modules, and integration of real-life case

scenarios—could further strengthen understanding. Given that nursing graduates will serve as frontline educators and counselors in community settings, it is crucial that they develop strong foundations early in their training to combat misinformation and guide patients effectively.

Overall, the results of this study align closely with domestic and international findings and reinforce the role of formal health education in bridging knowledge gaps, improving attitudes, and shaping perceptions regarding contraception and STI prevention. Strengthening curriculum delivery and facilitating open, supportive learning environments may enhance student preparedness and contribute to improved reproductive health outcomes in the communities they will serve.

This study has certain limitations. First, as it was conducted in a single nursing institution, the findings may not be generalizable to all nursing students across different regions. The use of convenience sampling may also introduce selection bias. Data were collected through self-administered questionnaires, which rely on participant honesty and may be influenced by social desirability bias. The cross-sectional design captures responses at a single point in time and cannot establish causality between academic progression and knowledge improvement. Additionally, the study did not include qualitative methods, which could have provided deeper insights into attitudes and cultural influences affecting reproductive health understanding.

Conclusion

This study highlights a significant association between academic progression and improved knowledge, attitudes, and perceptions regarding contraception and sexually transmitted infections (STIs) among nursing students. As students advanced through successive

academic years, their understanding of reproductive health concepts improved markedly, reflecting the positive impact of structured curriculum, clinical exposure, and increased academic maturity. Despite strong awareness, notable misconceptions and cultural hesitations were observed, particularly among junior students, underscoring the need for strengthened early instructional strategies and open, stigma-free learning environments. Given their future role as frontline healthcare providers and community educators, ensuring that nursing students develop accurate and comprehensive reproductive health competency is essential. Integrating interactive teaching methods, reinforcing evidence-based knowledge throughout the program, and addressing socio-cultural barriers can enhance preparedness. Overall, the study emphasizes the need for continuous curriculum strengthening to empower nursing students to contribute effectively to sexual and reproductive health promotion and STI prevention in the communities they serve.

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