

Knowledge and Practice of Contraception Among Male Adolescents of High Schools in Kathmandu Metropolitan City

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Abstract

Background

Adolescents have the lowest levels of contraceptive knowledge and use globally, placing them at heightened risk of unintended pregnancy, unsafe abortion, and sexually transmitted infections. This study assessed the level of knowledge and practice regarding contraception among male adolescents in high schools in Kathmandu Metropolitan City.

Methods

A cross-sectional study was conducted among 384 male adolescent students from 10 high schools (5 government and 5 private) in Kathmandu Metropolitan City from January 1 to 12, 2023. Data were collected using a self-administered questionnaire adapted from WHO's "Illustrative Questionnaire." Knowledge was assessed using 13 items, with scores ≥ 8 (60%) categorized as good knowledge. Descriptive statistics and chi-square tests were performed using SPSS version 25.

Results

The mean age of respondents was 17.14 ± 1.02 years. The majority were Brahmin/Chhetri (42.4%), Hindu (82.8%), and unmarried (96.1%). Overall, 46.61% demonstrated good knowledge about contraception. Communication with parents about sexual matters was limited, with 83.3% never discussing such topics with their father and only 21.36% with their mother. Among respondents, 20.31% had ever practiced sex, with 35.9% initiating sexual activity at 14–18 years. Age ≥ 17 years (OR = 2.60, 95% CI: 1.66–4.07) and private school attendance (OR = 5.27, 95% CI: 2.96–9.37) were significantly associated with better knowledge.

Conclusions

Knowledge of contraception among male adolescents was unsatisfactory. Comprehensive sexual and reproductive health education targeting adolescents, particularly younger students in government schools, is urgently needed. Integration of sex education into school curricula and improved parent-adolescent communication about sexual health are recommended.

Background

Contraception is the intentional prevention of conception through various devices, sexual practices, chemicals, drugs, or surgical procedures. Effective contraception enables physical relationships without fear of unintended pregnancy and ensures reproductive autonomy (1). Contraceptive information and services are fundamental to the health and human rights of all individuals (2). Adolescents are the

individuals aged 10–19 years defined by the World Health Organization (3) who navigate numerous physical, cognitive, emotional, and behavioural changes as they acquire increasing autonomy. Experimentation during this period may include sexual activity, which without adequate knowledge and protection places adolescents at higher risk of unintended pregnancy, unsafe abortion, and sexually transmitted infections (4).

Globally, contraceptive methods used by men or requiring male cooperation account for one-quarter of all contraceptive use, with condoms being the most prevalent (7.7%), followed by withdrawal (3.1%) (5). Approximately 10 million unintended pregnancies occur annually among adolescent girls aged 15–19 years, with 3.9 million abortions being unsafe (6). Contraceptive knowledge among adolescents remains insufficient and often inaccurate (7). Modern contraceptive use varies considerably across countries, from 2% in Pakistan to 44% in Indonesia (8). While awareness is nearly universal in Nepal, actual contraceptive use remains low. Only 14% of married adolescents aged 15–19 and 24% of married women aged 20–24 currently use modern contraceptive methods (9). Among teenagers aged 15–19 years, 30.2% had live births, with teenage fertility higher in rural areas (10).

Studies indicate that adolescents have low knowledge of contraceptive methods in both public and private schools (11). Given Nepal's male-dominated society, engaging men in family planning programs is essential (12). However, research specifically focusing on male adolescents' contraceptive knowledge and practices in Nepal are limited. This study addresses this gap by assessing knowledge and practice of contraception among male adolescents in high schools in Kathmandu Metropolitan City.

Methods

A cross-sectional study was conducted in high schools in Kathmandu Metropolitan City, Kathmandu district, Bagmati Province, Nepal. The study population comprised male adolescent students enrolled in secondary level (grades 11 and 12) from five government and five private schools in Kathmandu Metropolitan City. The sample size was calculated using the formula $n = z^2pq/d^2$, assuming 49% prevalence of contraceptive knowledge from a previous study (1), 95% confidence level and a 5% margin of error, yielding 384 participants. All male students from selected sections were included, and required samples were randomly selected to meet the target size. Students unwilling to participate were excluded.

Data were collected from January 1 to 12, 2023 using the WHO's "Illustrative Questionnaire" (13), adapted to the Nepali context. Only three sections relevant to the study were used: Section 1 (Socio-demographic Characteristics), Section 2 (Knowledge on Contraception), and Section 3 (Current Heterosexual Relationship - Practice of Contraception). Self-administered questionnaires were distributed and collected on the same day. Data were edited, organized, rechecked, and cleaned after entry to ensure quality. Analysis was performed using SPSS version 25. Descriptive statistics, chi-square tests, and odds ratios with 95% confidence intervals were calculated. Statistical significance was set at $p < 0.05$.

Results

Socio-demographic Characteristics

A total of 384 male adolescents participated in this study. The mean age was 17.14 ± 1.02 years, with the majority (69.8%) aged 17-19 years. Most respondents were Brahmin/Chhetri (42.4%), Hindu (82.8%), and unmarried (96.1%). Nearly half (48.96%) were in grade eleven, and 76.6% attended private schools. Communication about sex-related matters with parents was notably poor, with 83.3% never discussing such topics with their father and only 21.36% doing so with their mother as shown in Table 1.

Knowledge of Contraception

Knowledge of specific contraceptive methods varied considerably, as presented in Table 2. While most respondents correctly identified that a man can use a condom before intercourse (91.7%), only 14.6% correctly knew that oral pills are taken daily. About 53.6% correctly identified injectable contraceptive frequency, 61.7% knew about emergency contraceptive pills, and 74.2% understood periodic abstinence. However, only 44.5% correctly understood the withdrawal method. Regarding reproductive health knowledge, 61.2% correctly responded that most women periods are regular, 40.4% knew sperm die within 6 hours, and 62.8% correctly identified the most likely time for pregnancy. Among respondents who had heard about contraceptive methods, the majority (54.7%) were aware of male condoms, followed by IUD (42.7%), female sterilization (25.8%), male sterilization (25.5%), implants (24.7%), and jelly/foam (22.9%). Overall, less than half (46.61%) of respondents demonstrated good knowledge of contraception, while more than half (53.39%) had poor knowledge.

Practice of Contraception

Among the 384 respondents, 78 (20.31%) had ever practiced sex. Among sexually active respondents, 39.74% had planned sexual intercourse, while 60.26% had unplanned sex. The majority (35.9%) initiated sexual activity at 14-18 years, 30.77% started after 18 years, and 5.13% experienced sex before age 10. Use of contraception during first sex was high (91.03%), while 8.97% used no method. Among various contraceptives used beyond first sex, condoms were most common (53.52%), followed by pills (16.90%), safe period (2.82%), withdrawal (1.41%), emergency contraceptive pills (1.41%), and others (23.94%). Communication about contraception with partners occurred among 46.15% before sex, 5.13% after sex, and 48.72% never discussed it. Consistent use of contraception beyond first sex was reported by 33.33%, while 52.56% never used or were not sexually active. Of the 78 sexually active respondents, 13 (16.67%) reported partner pregnancy, with 8 currently pregnant and 5 having abortions.

Factors Associated with Knowledge and Practice

Age and college type were significantly associated with knowledge in Table 3. Respondents aged ≥ 17 years had 2.6 times higher knowledge (OR=2.60, 95% CI: 1.66-4.07) compared to younger students. Private school students had 5.27 times higher knowledge (OR=5.27, 95% CI: 2.96-9.37) than government

school students. Age was the only factor significantly associated with practice as shown in Table 4, with students aged ≥ 17 years having 7.27 times higher practice (OR=7.27, 95% CI: 1.43-37.09).

Discussion

This study assessed contraceptive knowledge and practice among male adolescents in Kathmandu Metropolitan City. The findings reveal inadequate knowledge, with less than half (46.61%) demonstrating good knowledge, consistent with studies from India and Poland (1,7). Low knowledge levels among adolescents are concerning, as young men often assume less responsibility for contraception and may face serious consequences from unintended pregnancies (14). Studies from Latin America similarly report inadequate sex education, leaving adolescents ill-equipped to prevent pregnancy (15).

Male condoms were the most recognized method (54.7%) and most commonly used (53.52%), consistent with multiple studies (11,12,16,17). This likely reflects condoms' dual protection against pregnancy and STIs, along with widespread availability and marketing (17). Knowledge of emergency contraceptive pills (61.7%) was similar to a previous Nepalese studies (61.5%) (18, 19). However, knowledge of permanent methods was low (approximately 25%), comparable to other findings (1,17,20).

Contraceptive use during first sex was high (91.03%), similar to a study of youth sexual behaviours (93%) (21). However, consistent use beyond first sex was low (33.33%), suggesting adolescents may not maintain protective behaviours. This pattern aligns with research identifying cultural taboos, socioeconomic factors, and inadequate adolescent-friendly services as barriers to consistent contraceptive use (22). Notably, withdrawal method use was very low (1.41%), contrasting with studies showing higher withdrawal use among adolescents (4).

Age was significantly associated with both knowledge and practice, with older adolescents demonstrating better outcomes. This finding aligns with studies showing increased knowledge and practice with age (11,23). Private school attendance was strongly associated with better knowledge (OR=5.27), likely reflecting better educational resources and sexual health education in private institutions. However, the absence of an association between knowledge and practice is concerning and contradicts studies showing positive knowledge-practice relationships (24,25). This may indicate that while knowledge is improving through school-based programs, translating knowledge into consistent practice remains challenging, suggesting the need for more comprehensive, skill-based interventions (26).

This study was conducted in selected schools of Kathmandu Valley only, limiting generalizability to out-of-school adolescents or those in rural areas. Additionally, self-reported data on sensitive topics may be subject to social desirability bias.

Conclusion

This study found that age and school type were significantly associated with knowledge of contraception. Respondents aged 17 years or older had 2.6 times higher knowledge than younger students, while private school students had 5.27 times higher knowledge than government school students. Age was the only factor significantly associated with contraceptive practice, with older students having 7.27 times higher practice. No significant association was found between knowledge and practice.

These findings have important implications for public health policy in Nepal. The low knowledge levels, particularly among younger adolescents and government school students, underscore the urgent need for comprehensive sexual and reproductive health education integrated into school curricula. The knowledge-practice gap suggests interventions should include skill-building components such as communication, negotiation, and decision-making skills. Future research should employ longitudinal designs to better understand causal pathways and evaluate school-based interventions.

List of Abbreviations

Abbreviation	Full Form
WHO	World Health Organization
ECP	Emergency Contraceptive Pills
IUD	Intrauterine Device
STIs	Sexually Transmitted Infections
OR	Odds Ratio
CI	Confidence Interval
SPSS	Statistical Package for the Social Sciences
IRC	Institutional Review Committee

Declarations

Ethical Considerations and consent to participate

Ethical approval was obtained from the Institutional Review Committee of the Institute of Medicine, Tribhuvan University (Approval Date: December 15, 2022). All methods were performed in accordance with the relevant guidelines and regulations of this committee. Permission was obtained from Kathmandu Metropolitan City and respective school authorities. Written informed consent was obtained from all participants. Consent to participate was obtained from the parents or legal guardians of all

participants under the age of 16. Respondents were informed of their right to withdraw at any time. Confidentiality was maintained throughout.

Availability of Data and Materials

The datasets generated and analyzed during this study are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare that they have no competing interests.

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Authors' Contributions

Sumit Bohara designed the study, performed data collection, statistical analysis and manuscript writing. Subhash Bhusal contributed to the study design and data collection, performed statistical analysis, and drafted the manuscript. Rojina Dahal and Rajan Paudel contributed to study design, data interpretation, analysis and critical revision. Menuka Bohara contributed to study design, performed data analysis and critical revision. All authors read and approved the final manuscript.

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Tables

Table 1: Socio-demographic characteristics of the study population (n=384)

Characteristics	Number	Percentage
Age of respondent		
Under 17	116	30.2
17-19	268	69.8
Ethnicity		
Brahmin/Chhetri	163	42.4
Janjati	91	23.7
Madhesi	20	5.2
Dalit	17	4.4
Newar	35	9.1
Other	58	15.1
Relationship status		
Married	15	3.9
Unmarried	369	96.1
Grade		
Eleven	188	48.96
Twelve	196	51.04
College type		
Government	90	23.4
Private	294	76.6
Current paid work		
Yes	59	15.36
No	325	84.64
Religion		
Hindu	318	82.8
Buddhist	48	12.5
Christian	4	1.0
Muslim	3	0.78
Others	11	2.86

Characteristics	Number	Percentage
Importance of religion		
Very important	158	41.4
Important	170	44.3
Not important	56	14.6
Father alive		
Yes	364	94.8
No	20	5.2
Discuss sex with father		
Often	12	3.1
Occasionally	52	13.5
Never	320	83.3
Mother alive		
Yes	382	99.48
No	2	0.52
Discuss sex with mother		
Often	17	4.43
Occasionally	65	16.93
Never	302	78.64

Table 2: Knowledge of contraception among respondents (n=384)

Variable	n (%)
Overall knowledge	
Good knowledge	179 (46.61)
Poor knowledge	205 (53.39)
Specific contraceptive knowledge	
Condom can be used before intercourse	352 (91.7)
Periodic abstinence avoids sex during fertile days	285 (74.2)
ECP can be taken soon after intercourse	237 (61.7)
Injectable contraceptives every 2-3 months	206 (53.6)
Withdrawal involves pulling out after ejaculation	171 (44.5)
Oral pills taken daily	56 (14.6)
Reproductive health knowledge	
Most women's periods are regular	235 (61.2)
Most likely time to get pregnant is before period	241 (62.8)
Sperm die inside after 6 hours	155 (40.4)
Awareness of contraceptive methods	
Male condom	210 (54.7)
IUD	164 (42.7)
Female sterilization	99 (25.8)
Male sterilization	98 (25.5)
Implant	95 (24.7)

Table 3: Factors associated with knowledge of contraception (n=384)

Characteristics	Good Knowledge n (%)	Poor Knowledge n (%)	P value	OR (95% CI)
Age				
≥17 years	106 (59.22)	43 (20.98)	<0.001*	2.60 (1.66-4.07)
<17 years	73 (40.78)	162 (79.02)		
College type				
Private	162 (90.5)	132 (64.39)	<0.001*	5.27 (2.96-9.37)
Government	17 (9.5)	73 (35.61)		
Relationship status				
Married	4 (2.23)	11 (5.37)	0.114	2.48 (0.78-7.93)
Unmarried	175 (97.76)	194 (94.63)		
Ethnicity				
Privileged	97 (54.19)	101 (49.27)	0.336	0.82 (0.55-1.23)
Underprivileged	82 (45.81)	104 (50.73)		

*Statistically significant (p<0.05)

Table 4: Factors associated with practice of contraception among sexually active respondents (n=78)

Characteristics	Practice Yes n (%)	Practice No n (%)	P value	OR (95% CI)
Age				
≥17 years	60 (81.97)	4 (57.14)	0.008*	7.27 (1.43-37.09)
<17 years	11 (18.03)	3 (42.86)		
College type				
Private	39 (54.03)	4 (57.14)	0.911	0.91 (0.19-4.38)
Government	32 (45.07)	3 (42.86)		
Relationship status				
Married	8 (11.27)	0 (0)	0.349	1.11 (1.03-1.20)
Unmarried	63 (88.73)	7 (100)		
Ethnicity				
Privileged	38 (53.52)	5 (71.43)	0.36	2.17 (0.39-11.94)
Underprivileged	33 (46.48)	2 (28.57)		

Statistically significant (p<0.05)