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## **Knowledge and Perceptions regarding Sexual and Reproductive Health among high school students in Kathmandu, Nepal**

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### **Abstract**

#### *Background*

Nepal recently began teaching sexual education in the school system and has established youth friendly services in order to meet the need of increased sexual and reproductive knowledge among the youth.

#### *Objective*

To examine the sexual and reproductive knowledge and perceptions among young people attending schools in Kathmandu.

#### *Method*

A written questionnaire was distributed to 160 students, in a classroom environment, in four schools in Kathmandu.

## *Results*

Two thirds of the females and nearly 60% of the males knew that it was possible to get sexually transmitted infection (STI) during one sexual encounter and more than half of the students knew when in the menstrual cycle conception was more likely to occur. One third of the participants did not know that it was possible to become pregnant after having intercourse once. The males demonstrated less knowledge than the females regarding every aspect of sex and reproduction, with the exception of pregnancy prevention.

## *Conclusion and clinical implications*

For the youths in this study, it was more important to prevent unwanted pregnancies than to protect oneself from STIs. Establishment of a hotline on the internet, where personalized and confidential counselling can be offered may complement the comprehensive sexual education in schools.

## **Keywords**

Health promotion, young people, Nepal, sexual knowledge

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## **Background**

In many countries, interventions to prevent unwanted pregnancies, unsafe births, and Sexually Transmitted Infections (STIs) are important political issues. Prevention, in terms of improving sexual knowledge and providing contraceptives, remains an important component in meeting goals five and six of the World Health Organization's (WHO) Millennium Development Goals (MDGs). Sex education for all youths is necessary to prevent STIs, unsafe abortions, early and unwanted pregnancies, and childbirth.<sup>1</sup> Preventive strategies are focused on access to sexual and reproductive health information, and affordable contraceptives and methods for handling and preventing STIs.<sup>2</sup> Reproductive rights, such as the right to: (a) control one's fertility; (b) self-protection; and (c) protection against STIs apply not only to adults but also to young people. Furthermore, social norms often restrict young people, both male and female, from expressing their sexuality freely and without fear of prejudice. In many societies, cultural codes often restrict a female's mobility and freedom to express her sexuality.<sup>3</sup>

The Government in Nepal developed policy initiatives and criteria for examining sexual health education, in 2006. There are several important policy documents guiding the official school system in Nepal with regard to sex education. However, in reality, there are wide variations in the extent to which teachers follow the government's guidelines in the

classroom. Hence, sexual and reproductive health education in Nepal is inadequate due to teachers' feeling of embarrassment and lack of knowledge on the part of the teacher.<sup>4</sup> Due to lack of sexual education, both in schools<sup>4</sup> and at home<sup>5</sup>, young people acquire their sexual and reproductive knowledge from friends and the mass media, such as television, newspapers, radio, and pornography.<sup>6</sup>

School-based sex education programmes are significant tools for disseminating information on good sexual health and the prevention of pregnancies in youths.<sup>7</sup> However, there are several reasons why these programmes are not always implemented.<sup>8</sup> In Nepal, some castes and areas still follow traditions which promote early marriages, even though the rate of delayed marriage is increasing nation-wide. Premarital sex is largely unacceptable in the Nepalese society, but studies show that young people have started to engage in premarital sex over the past decade or so.<sup>9-10</sup> In a study conducted with male college students in Kathmandu, 39% saw no problem with premarital sex. This included sex with sex workers and unsafe sex.<sup>11</sup> In another study with college students, 47% of the males and 28% of the females indicated that they had had premarital sexual intercourse.<sup>12</sup> According to a study on barriers to sexual health services for youths in Nepal, the number of Human Immunodeficiency Virus (HIV) cases and unwanted pregnancies are steadily increasing.

Factors that have negative effects on sexual behaviour are identified as: lack of youth-friendly services, feeling of embarrassment, influence of alcohol and peers, and poor sexual and reproductive health knowledge.<sup>6</sup> Additionally, health personnel and teachers appear to think that providing information and education encourages young people to engage in unsafe sexual activity instead of helping to prevent unsafe sexual behaviour.<sup>13</sup> STI/HIV education programmes have, so far, been considered favourably in an effort to reduce risky adolescent sexual behaviours among Nepalese young people.<sup>14</sup> The aim of this study was to examine the sexual and reproductive health knowledge and perceptions of young people attending schools in Kathmandu.

## **Methods**

### *Design*

This study was a descriptive cross sectional study to explore knowledge and perceptions amongst the school-aged population, in four schools in Kathmandu. Data were gathered at two private and two public schools.

*Questionnaire and measures*

The self-administered questionnaire had previously been developed and tested as part of a larger study on sexual behavior, involving 2,020 youth in Sri Lanka.<sup>15</sup> The questionnaire comprised 28 questions about sexual knowledge, attitudes and behaviours. In this study, questions focusing on sexual and reproductive health knowledge and from whom students wanted to receive this knowledge were used (Table 1). Prior to using the questionnaire in this study, it was pilot tested in Nepal on a group of 10 youths in order to test face validity.<sup>16</sup>

**Table 1**

Description of measures in the study

<b>Items</b>	<b>Response Type</b>
Is it possible for a teenager to become pregnant after having intercourse once?	Yes/No
Is it possible for a teenager to become infected with Sexually Transmitted Infection STIs after having intercourse once?	Yes/No
Please name as many methods as you know to prevent pregnancy.	Open answers
Please name as many methods as you know that can prevent STI	Open answers
Given that a teenage girl is having intercourse, at what time during her monthly menstruation cycle do you think pregnancy is most likely to occur?	Day 1-12, Day 12-18, Day 18-28
What STIs are teenagers in Nepal aware about?	HIV/AIDS, Gonorrhoea, Syphilis, Trichomoniasis, Human papilloma Virus (HPV), Herpes Simplex Virus (HSV), Chlamydia
Where do you want to receive your sexual knowledge from?	Healthcare personnel, Doctors, Parents, Books/Journals, Teachers, Friends, TV/Radio, the Internet, Siblings, Grandparents, Any other

*Study population and procedure*

School students in grades ten through twelve (age range 16-24) were invited to participate in a questionnaire survey, prior to a one hour education session on sexual and reproductive health, which was conducted by the principal investigator and an assisting midwife. The study was undertaken in the central region of Nepal, where the largest percentage of the population is located. Almost half of the population lives in the so-called “hill zone”, which includes the Kathmandu Valley, and it is the most urbanized area with the highest population

density.<sup>17</sup> The four schools, comparable in size and enrollment, that were randomly selected taught students from pre-school to grade twelve. Out of 3400 students, 162 were in grades ten through twelve. The classes had students from both rural and urban areas and were not divided by gender. They were all residents of Kathmandu at the time of the study. The data collection was performed in the spring of 2014. All the selected schools taught in English. Hence, the information about the study, the questionnaire, and the one hour teaching session in sexual and reproductive health were delivered in English.

The Vice Principal at each school was contacted and informed, both orally and in writing, about the study. The school official informed the students orally about the survey and presented the principal investigator and the assisting midwife to the students, who reminded the students that participation in the study was voluntary. There were no incentives for the participants and students could withdraw from the study at any time. After the students had provided signed informed consents the questionnaires were distributed to them. No students left the classroom; all of them completed the questionnaire, although some did not answer all the questions. After the session, the students were invited to speak in private with the researchers, if they so desired. Some students stayed after class and discussed contraceptive use and the impact on them in a society that was in transition from a conservative to a more liberal environment.

#### *Statistical Analysis*

Open questions and closed alternatives were categorized with binary responses for analysis purposes in Excel and were thereafter converted into SPSS for further descriptive statistics. Pearson's chi-square test was used for comparison between genders, in questions with closed alternatives. Open questions and questions with multiple answers were analyzed using Fisher's exact test to compare genders. The level of statistical significance for differences between genders was set at  $p \leq 0.05$ . A statistician was consulted for the analysis of some items.

#### *Ethical considerations*

The Helsinki Declaration of 1975, as revised in 2008, was followed and considered regarding informed choice, informed consent, confidentiality, and the right to withdraw at any time.<sup>18</sup> the researchers acted in a respectful manner towards the participants, ensuring informed choice and the possibility to withdraw at any time. The study was approved by the Minister of Education.

## Results

### *Demographic and social characteristics of the respondents*

The total number of participants was 160 of which 46% were male and 54% were female. They varied in age from 15 to 23 years of age (mean=17.4 SD= 1.430). The median age of the males was 18 and of females 17. One 16 year-old boy was a father and five of the girls between 19 and 23 years of age were mothers (Table 2).

**Table 2**

Demographic characteristics of the survey participants

<b>Characteristics</b>	<b><u>Total</u> n (%) n=160</b>	<b><u>Male</u> n (%) n=74 (46)</b>	<b><u>Female</u> n (%) n=86 (54)</b>
<i>Is a parent</i>	6 (4)	1 (1)	5 (6)
<i>Origin: rural Nepal</i>	52 (33)	28 (38)	24 (28)
<i>Origin: urban Nepal</i>	86 (54)	32 (43)	54 (63)
<i>Origin not answered</i>	22 (14)	14 (19)	8 (9)

### *Reproductive health knowledge*

More than two thirds of the participants responded that it is possible for a teenager to become pregnant after the first intercourse, with no differences between the males and females'. When asked about possibilities of a teenager getting infected with an STI after intercourse once, fewer males than females answered yes (n=44, 60% vs. n=66, 77%, p<0.05). When asked when pregnancy was most likely to occur during the menstrual cycle, just over half of the participants answered correctly (Table 3).

**Table 3**

## Reproductive health knowledge

<b>Issues</b>	<b>Total n (%)</b> <b>n=160</b>	<b>Male</b> <b>n (%)</b> <b>74 (46)</b>	<b>Female</b> <b>n (%)</b> <b>n=86 (54)</b>	<b>P*</b>
Possibility of a teenager getting pregnant after having intercourse once Yes (right answer)	107 (67)	47 (64)	60 (70)	ns
Possibility of a teenager getting infected with an STI after having intercourse once Yes (right answer)	110 (69)	44 (60)	66 (77)	<0.005
When is pregnancy most likely to occur?				
Day 1-12	16 (10)	10 (14)	6 (7)	ns
Day 12-18 (right answer)	83 (52)	34 (46)	49 (57)	ns
Day 18-28	34 (21)	17 (23)	17 (20)	ns

\* Chi-squared or Fisher's Exact Test, significance level  $p < 0.05$ ; ns = non-significant

When asked about contraceptive methods to prevent pregnancy, condoms and contraceptive pills were the most common answers. Moreover, a higher proportion of female participants answered in favour of abstinence from sexual activity. When asked about methods to use to prevent STIs, condom use was the most common answer (Table 4).

**Table 4**

Sexual knowledge: Methods to prevent pregnancy and STIs.

<b>Issues</b>	<b>Total n (%)</b> <b>n=160</b>	<b>Male</b> <b>n (%)</b> <b>74 (46)</b>	<b>Female</b> <b>n (%)</b> <b>n=86 (54)</b>	<b>P*</b>
<b>Methods to prevent pregnancy</b>				
Condoms	86 (54)	42 (57)	45 (52)	ns
Contraceptive pills	71 (44)	29 (39)	42 (49)	ns
Abstinence	18 (11)	3 (4)	15 (17)	< 0.05
Femedomes	7 (4)	6 (8)	1 (1)	< 0.05
Copper T Intra Uterine Device (IUD)	8 (5)	6 (8)	2 (2)	ns
Contraceptive injections	9 (6)	5 (7)	4 (5)	ns
Coitalinteruptum	5 (3)	2 (3)	3 (4)	ns
Day after pill/abortion	6 (4)	4 (5)	2 (2)	ns
Vasectomy	2 (1)	2 (3)	0 (0)	ns
Mini laparotomy	1 (1)	1 (1)	0 (0)	ns
<b>Methods to prevent STI</b>				
Condom (considered right answer)	74 (46)	35 (47)	39 (45)	ns
Vaccination	7 (4)	1 (1)	6 (7)	ns
Only one partner	12 (8)	6 (8)	6 (7)	ns
Avoid multiple partners	12 (8)	4 (5)	8 (9)	ns
Contraceptive pills	17 (11)	2 (3)	15 (17)	<0.05
Femedomes	9 (6)	6 (8)	3 (4)	ns
Abstinence	2 (1)	1 (1)	1 (1)	ns
Do not think about HIV/AIDS during intercourse	2 (1)	2 (3)	0 (0)	ns

\* Chi-squared or Fisher's Exact Test, significance level  $p < 0.05$ ; ns = non-significant*Sources preferred for getting sexual health knowledge*

When asked where young people currently learnt about sexual issues and *from whom* the participants would like to receive information, friends and the Internet were the most common answers among both males and females. A higher proportion of female participants, compared to the male participants, chose their mother as the easiest person to talk about sexual issues. Other sources were: parents, sisters, cousins, siblings, teachers, fathers, books, mobile phones, the Internet, Facebook, a girlfriend, a boyfriend, healthcare personnel, doctors, midwives, nurses, older people, and sexual partners (data not shown). When asked from whom a teenage girl would like to receive information regarding sexual issues, friends and the Internet were the most common answers among both genders (Table 5).

**Table 5**

Sources of sexual information (current and preferred)

<b>Issues</b>	<b><u>Total n (%)</u></b> <b>n=160</b>	<b><u>Male</u></b> <b><u>n (%)</u></b> <b>74 (46)</b>	<b><u>Female</u></b> <b><u>n (%)</u></b> <b>n=86 (54)</b>	<b><i>P</i>*</b>
<b>Easiest person for a male teenager to talk to regarding sexual issues</b>				
Friends	98 (61)	43 (58)	55 (64)	ns
Brother	20 (13)	7 (10)	13 (15)	ns
<b>Easiest person for female teenagers to talk to regarding sexual issues</b>				
Friends	93 (58)	38 (51)	55 (64)	ns
Mother	39 (24)	10 (14)	29 (34)	<0.05
<b>From whom should teenager receive information regarding sexual issues?</b>				
Friends	114 (71)	47 (64)	67 (78)	ns
Internet	97(61)	42 (57)	55 (64)	ns
Books/journals	77 (48)	31 (42)	46 (64)	ns
Doctors	74 (46)	39 (53)	35 (41)	ns
Teachers	71 (44)	35 (47)	36 (42)	ns
TV/radio	71 (44)	32 (43)	39 (45)	ns
Parents	69 (43)	27 (37)	42 (49)	ns
Health personnel	66 (41)	29 (39)	37 (43)	ns
Siblings	28 (18)	14 (19)	14 (16)	ns
Grandparents	14 (9)	7 (10)	7 (8)	ns

\* Chi-squared or Fisher's Exact Test, significance level  $p < 0.05$ ; ns = non-significant**Discussion**

The results revealed that one third of the participants were not aware that it is possible to become pregnant after having intercourse once. About two thirds of the girls knew that they could get an STI after having intercourse once. More than half of the students knew that one was most likely to conceive between days 12-18 in the menstrual cycle. The proportions are consistently lower for males. The males have less awareness regarding sexual and reproductive health knowledge, except for methods to prevent pregnancy. Both females and males wanted to receive their sexual health knowledge primarily from friends and secondarily from the Internet.

The findings in this study show that both the males and females had some knowledge of contraceptives. Condoms were the most mentioned method of birth control. This supports the findings from earlier studies in low income countries.<sup>19-20</sup> Other methods mentioned were Copper T IUD, contraceptive injections, the day-after pill, abortion, vasectomy, and mini-laparotomy. The suggested suitability of these methods to prevent pregnancies among teenagers revealed a need for further information and discussion. It is a problem if youth believe that abortion, vasectomy, or mini-laparotomy are suitable contraceptive methods for teenagers. It also leads to speculate whether these answers are a sign of the low level of awareness that youth have regarding suitable contraceptive methods.

One interesting finding though, is that more students mentioned condoms as a method to prevent pregnancies than as a method to prevent STIs. Hence, although young people are aware of the existence of STIs and that people in their age group can become infected, few seem to perceive that they are personally vulnerable. They are more concerned with preventing unwanted pregnancies than preventing STIs. This is in line with the conclusions of prior studies.<sup>21</sup> Within Nepalese culture and traditions it is more devastating to become pregnant while single than it is to become infected with an STI.

Almost one third of participants in this study did not know they could contract an STI after having sexual intercourse once. This is a common misconception among people in the participants' age group. Other misconceptions include: a condom can be used multiple times; one can tell by looking at someone if that person is infected with an STI<sup>22</sup> and that using modern contraceptives might lead to infertility if the woman has never been pregnant<sup>20</sup>. Additionally, there is a lack of awareness regarding symptoms that are common to STIs. Youth make judgments on the possibility of contracting an STI based on their partner's external appearance.<sup>21</sup>

The main reason why youth fail to utilize contraceptives may be because they do not anticipate intercourse; they describe it as "just happening". It is argued that perceived, rather than actual risk, of intercourse leading to unwanted pregnancy or STIs that determines the use of contraceptives among young people.<sup>20</sup> According to the WHO,<sup>19</sup> education is the main tool to prevent STIs, pregnancies and non-consensual sex.<sup>19</sup> It is, therefore, highly important to continue to conduct research within this field so that adequate educational material, based on scientific knowledge, rather than on social and cultural norms, preconceptions, and opinions can be made available.

In our study, friends and the Internet were the sources from which young people mainly gained their knowledge of sexual issues. This is contrary to other research,<sup>23</sup> which shows that curriculum-based sexual education programmes have been successful in providing accurate and age-appropriate information, and that curriculum-based programmes are even more successful if the programmes are linked to contraceptive provision and services.<sup>23</sup> Youth friendly and age-appropriate approaches aim towards supporting young people with accurate and scientifically based information about sexual and reproductive health and rights. The students in this study did not have access to proper curriculum-based sexual education in school, and a limited chance of receiving youth-friendly services. Friends and the Internet are their main sources of information, both of which may lead to misunderstandings.

It is important to develop reliable, comprehensive, age appropriate, and youth friendly information about sexual and reproductive health and rights. One suggestion could be a hotline on the Internet where educated health personnel are available for anonymous and confidential conversations and discussions about sexual and reproductive health and rights. This could also help young people to avoid the feeling of being judged and make it easier for them to ask sensitive questions in a secure environment.

Approximately, one fourth of the participants responded that the easiest person with whom a teenage girl could discuss sexual issues was her mother. There is difference between who the young females and males would prefer to discuss sexual and reproductive health issues with. While young females are far more likely, than males, to discuss their sexual and reproductive health issues with their parents, usually mothers, males find it easier to discuss sexual issues with outsiders, such as medical practitioners.<sup>19,24</sup> The participants also expressed concern about inadvertently meeting someone they knew at a clinic.<sup>6, 13</sup> Health personnel and doctors were not seen as a person with whom the participants could easily discuss sexual issues. It can be argued that if the students had the confidence that they would receive reliable and confidential information from health care personnel, without moral judgment, more may turn to such services for proper advice and guidance.

Although the study was conducted with students in grades ten through twelve but almost 25% indicated that they had finished the 12<sup>th</sup> grade. These responses could be an indication of the fact that many were re-taking a year because of incomplete grades. Another important aspect was the higher attendance of urban females, as compared to males. This may reflect modernization and increasing levels of education in urban females. The inclusion criteria

focused on youth to enable comparisons with other studies that use the youth concept. Therefore, two participants who were deemed too old to include were excluded<sup>26</sup>

This study highlighted the importance of providing the youth population in Nepal with basic sexual and reproductive health knowledge, which could play a part in preventing unwanted pregnancies and STIs. Additionally, this may assist young people in making decisions that are based on their own will and are not influenced by peers or partners. This can be done with innovative reliable online base information and education or an adequate school based sexual and reproductive education. Furthermore, youth friendly services are likely to benefit young people.

### **Limitations of the Study**

The main limitation of this study was the weak reliability test of the questionnaire. Only face validity cannot be considered strong evidence for an instrument's validity.<sup>25</sup> However, the strength was that this questionnaire had previously been used in Sri Lanka, on a large scale.<sup>15</sup> Still, the instrument could have been improved. Moreover, the answers could depend on multiple factors, such as, students' lack of interest in participation or the participants may have guessed or chosen the answers randomly. Additionally the participants in the study may have misinterpreted certain questions.

The strength was that the total student population in grades ten through twelve participated in this study. Furthermore, young females and males from both public and private schools were included. This enabled the findings to be generalizable to young people outside the participating group. However, due to the relatively small number of participants, generalization should be considered cautiously.

All the participants involved in the study completed the consent form in the information letter and responded to at least a portion of the questionnaire. However, collecting data regarding such sensitive topics in a school environment may have led to some non-responses because the students did not want to answer all the questions. Another limitation could be that the participants may have copied each other's answers. Additionally, some might have ticked the boxes just randomly. However, double answers in questions with closed alternatives were excluded from analysis to enhance reliability and validity.

## **Conclusion**

For youths in this study it was more important to prevent unwanted pregnancies than to protect oneself from STIs. The male participants had less sexual and reproductive knowledge except regarding methods to prevent pregnancy. Establishing a hotline through the Internet, where personalized and confidential counselling can be offered, could be a supplement to the sexual education in school. The results indicate that the sexual education needs to be revised and improved in order to meet the great need for increasing reproductive and sexual knowledge among youth who attend school in Nepal.

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## **Conflict of interest**

The authors declare no conflict of interest.

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