

Knowledge of Sexual Health Issues among Unmarried Young People in Nepal

*In the context of a global decline in age of sexual maturation
and rising age of marriage, the window of opportunity for young people
to engage in premarital sexual relations is opening*

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Early and universal marriage has traditionally been the norm in Nepalese culture, although the practise of delayed marriage appears to be on the increase. In 1961, nearly 75 per cent of young women aged 15 to19 years were married; this

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figure declined to just under 50 per cent by 1991 and to a low of 40 per cent in 2001 (Mehta 1998; Khanal 1999; NDHS 1996 and 2001). This, along with the advent of reducing age at first menarche due to improved nutritional status, has led to an increase in the window of opportunity for premarital sexual activity to occur.

Owing to social and cultural taboos and inhibitions, sexual health research in Nepal remains restricted to a small number of studies; for young people, especially those who are unmarried, this is particularly pertinent. Further, much of the hitherto limited research with young people remains unpublished.

Findings from studies which have investigated premarital sexual behaviour among high school and college students have found rates of activity to vary from 11 per cent among students in Pokhara to 14 per cent among Kathmandu students¹ and 16 per cent among students¹ in Palpa District (Limbu 2001; Prasai 1999). Among young unmarried men and women aged 14 to 19 years working in factories in the Kathmandu Valley, 20 per cent and 12 per cent of the men and women respectively reported having experienced sex (Puri 2002). Further, studies of single men in the border towns of Nepal found activity rates of 10 per cent among a sample aged 15 to 19 years and about 50 per cent among a slightly older sample aged 18 to 24 years (Mehta 1998; Tamang and others 2001).

Although the use of modern contraceptives in Nepal has risen steadily over the last two decades, levels still remain low (NDHS 2001; Pradhan and others 1997). For example, among currently married women, ever use and current use of a modern method stand at 50 and 35 per cent respectively. The use of condoms also remains particularly low at only 3 per cent for current usage and 12 per cent for ever use, rising to a high of only 16 per cent among women aged 20 to 24 years (NDHS 2001). Given the perceived problems associated with the discussion of personal sexual behaviour outside of marriage, there is a dearth of information with regard to safer sexual practices during premarital and extramarital sex. A study of condom use during sex with non-regular partners by married and unmarried young men (18 to 24 years), however, found that just over half had used a condom during the last intercourse (Tamang and others 2001). Furthermore, in the light of rising rates of sexually transmitted infections (STIs) among certain target groups and increasing rates of unplanned pregnancies, leading to maternal morbidity and mortality from unsafe abortions, it would appear that safer-sex practices during premarital and extramarital relations are infrequently being adhered to (Dahal 1999; Furber and others 2002; Mehta 1998; UNFPA 1996).

Data collected during the demographic and health surveys as well as from small-scale surveys indicate that awareness of condoms, HIV/AIDS and other STIs

appears to be rising among the general population, mainly owing to extensive media campaigns (NDHS 1996 and 2001; Mehta 1998; Pradhan and others 1997). In 2000, the Nepal Adolescent and Young Adults Survey (NAYA) questioned both married and unmarried young people (aged 14 to 22 years) regarding their awareness of contraception and HIV/AIDS. Their results showed that 93 per cent of young people had heard of HIV/AIDS and 95 per cent were aware of condoms (Neupane and Nichols 2002; Aryal and Nichols 2002).

For many young people in Nepal, however, especially those who are unmarried, social and cultural norms impose barriers to the transfer of sexual health information. Consequently, countless remain ignorant of even the basic knowledge required for safer sexual behaviour. For example, when the comprehensiveness of knowledge was tested during the NAYA survey, among those young people who had ever heard of HIV/AIDS, only 36 per cent were able to cite all three of the following measures to reduce or avoid the possibility of exposure: avoiding sex with a prostitute, using a condom during sex and having one steady partner (Neupane and Nichols 2002). Further, among young people who were aware of condoms, 1 in 10 did not know they could be used to protect against pregnancy, including 1 in 6 married young women.

Evidence from other country settings shows that sex education delivered in school can make a positive contribution to children and young people's knowledge and personal and social development, helping to prevent negative health outcomes such as unintended pregnancies and STIs. It contributes to preparing pupils for the opportunities, responsibilities and experiences of adult life and, when linked to confidential sexual health services, is shown to delay the onset of sexual activity. To achieve sustainable change, however, it is necessary to focus on young people before they become sexually active, before myths become deep-rooted and unsafe patterns of sexual behaviour are established (Kirby 2001; Grunseit and others 1997).

Nepal's education policies over the last 30 years, including the provision of free education up to secondary level, scholarship programmes for girls and the launching of the Education for All campaign, have greatly increased school attendance and raised the educational status of both males and females. In 1998, Nepal had 58,000 trained and 72,000 untrained teachers teaching more than 4.8 million students in 34,000 primary and secondary schools (Nepal 1998). Schools therefore have the potential to act as a key resource in the struggle to achieve optimal sexual health among Nepal's young people.

The present secondary school education curriculum includes health, population and environmental education as a compulsory subject in classes 9 and 10; topics covered include reproductive health, family life education and safe motherhood. Additionally there are two optional courses on health education and population education. Anecdotal evidence suggests, however, that classes, where they are taught, tend to be biomedical in focus, teaching methods tend to be didactic and time allocation is limited. To date, insufficient research has focused on investigating the quality of sexuality education within the school context in Nepal, although some pilot work has been undertaken (Prasai 1999).

In the light of the need to provide high-quality sex education in schools, the Department for International Development (DFID)-funded Safe Passages to Adulthood programme (based at the University of Southampton, United Kingdom) funded the local non-governmental organization, The Society for Local Integrated Development Nepal (SOLID Nepal) to investigate the challenges facing Nepal in its development of a more comprehensive sex and sexuality education curriculum in secondary schools. Using a combination of qualitative and quantitative research techniques, information was gained on young people's, teachers' and parents' knowledge, experiences and attitudes towards school-based sex education, perceived barriers to improving the curriculum and opportunities for change. This paper presents some of the findings from the questionnaire survey conducted among high school students, in particular, the sections focusing on sources of information and current knowledge of sexual health matters.

Methodology

The research consisted of a quantitative self-completion questionnaire distributed among young people attending school in classes 8, 9 and 10.² Section 1 covered basic demographic questions including age, sex, family composition, parental education and employment status, ethnicity, religion and, as measured by provision of household amenities and assets, socio-economic status. Section 2 asked respondents about their current sources of information about sexual and reproductive health and assessed knowledge. Section 3 asked pupils' views and attitudes concerning a series of health and sexuality issues, and section 4 focused on the sex and sexuality education the respondents had received at school, including issues discussed, teaching methods used, quality of teaching, improvements that could be made and other relevant issues. This paper explores factors that influence young people's sexual health knowledge.

Three districts, out of a total of 75 in Nepal, were purposively selected for distribution of the questionnaire; Dhading, Morang and Lalitpur. The sites were

selected to represent regions of differential development, urban, semi-urban and rural settings and cultural and ethnic diversity.

Dhading district is located in the Central Development Region of Nepal and borders China. The district consists of remote communities with limited access to electricity and telephones. Road access is poor with the only motorable road linking the district headquarters with Kathmandu being five hours' drive away. Morang district is located in the Terai in the Eastern Development Region bordering India. Electricity and telephones are available here, although not comprehensively. Finally, Lalitpur is the second biggest city of Nepal and located within the Kathmandu Valley. It is located in the Central Development Region and is one of the most urbanized cities. Communication facilities are extensive and include national and international television, fax, telex and the Internet. Residents in Lalitpur are widely exposed to the tourist trade and the district has a diverse cultural mix.

Owing to political, access and communication barriers it was not possible to undertake a fully random sample of schools in the selected areas. Therefore, purposive sampling techniques were employed. Suitable high school educational establishments in the three sites were contacted by the research team and invited to participate in the research. From those who agreed, three schools in Lalitpur, two in Morang and one in Dhading were chosen and issued with questionnaires to be distributed among pupils in the target classes. The final selection of schools was proportionate to the number of secondary schools in each district and all, except one in Lalitpur, were government-run.³

The questionnaires were based on an appropriately adapted version of a questionnaire previously used in another country context to examine quality of sex education. Following pre-testing, 1,200 questionnaires were distributed in the six educational establishments. After obtaining written consent and giving oral instructions on how to complete the questionnaire, forms were filled in under the supervision of a researcher in examination conditions. The respondents were provided with a pen and an envelope in which to seal their answers and a post-box was used for collection to maintain confidentiality and anonymity. The questionnaires were in both the English and Nepali languages.

Testing of sexual health knowledge

Section 2 of the questionnaire explored young people's knowledge of sexual health matters through the use of 16 true/false statements. The statements fell into four categories; reproductive health, STIs and HIV/AIDS, myths and contraception.

The five statements in the reproductive health category were “It is possible for a women to get pregnant before she has her first period”, “There are times in a woman’s menstrual cycle when she has a greater chance of becoming pregnant”, “A women will not get pregnant if she has sex standing up”, “Sexual intercourse whilst pregnant harms the foetus”, and “A girl’s hymen doesn’t tear without sexual intercourse”.

The five statements categorized as STIs and HIV/AIDS were “If used properly condoms can protect against HIV transmission”, “A person who looks strong and healthy can have HIV”, “A person can get AIDS through mosquito, flea and bedbug bites”, “There are diseases caught by having sex that can cause a woman to be unable to have a baby” and “A person with an STI can sometimes show no symptoms”.

Two statements featured in the mythical grouping, “Masturbation causes serious damage to health” and “A man needs to have sex regularly to maintain his masculinity”. Finally, four statements were grouped under the heading of contraception: “The contraceptive pill works just as well even if the women has been sick or had diarrhoea”, “Men can have a contraceptive injection (birth control injection) every couple of months to prevent getting a woman pregnant”, “Condoms can be used more than once” and “Condoms should not be removed from the penis whilst it is still stiff/hard”.

Analytic techniques

The responses of the young men and women to each of the individual 16 knowledge statements were examined and differences between the two sexes identified. Those giving a response of “don’t know” were not excluded from the analyses but coded as giving an incorrect answer. Each respondent was allocated four knowledge scores dependent on how many questions they correctly answered in each of the categories, a score of 0 for every incorrect answer, and of 1 for each correct one.

Binary logistic regressions, one for males and one for females, were then fitted to the data to identify the significant factors predictive of correct knowledge.⁴ The models were built using both forward and backward conditional stepwise selection procedures; factors were added below the 5 per cent significance level and removed once they became insignificant above that level. Interactions between the variables were also tested for.

Results

Description of the sample

The six educational sites yielded a total of 1,059 completed questionnaires (88 per cent completion rate), 55 per cent of which were

returned by young men. Selected demographic characteristics of the sample are displayed in table 1. The results displayed in table 2 illustrate the vast differentials in access to modern amenities experienced by the respondents in the purposively selected three districts (a consequence of the sampling strategy employed). In Dhading, no respondents reported having electricity in their homes, compared with 53 and almost 100 per cent of respondents in Morang and Lalitpur respectively. Table 2 also highlights the differences between the three districts in the educational status of pupils' parents. In both Dhading and Morang, approximately two thirds of mothers were illiterate and, among women who had received some schooling, very few had attended beyond primary school. In Lalitpur, though, just over 40 per cent of mothers had continued education after obtaining their school leaving certificates (SLC). Among fathers, education attainment was at a similar low level in Dhading and Morang, whereas in Lalitpur a much greater proportion of fathers had attained a qualification beyond SLC.

Table 1. Percentage distribution of respondents by selected demographic characteristics

Variable	Grouping	Percentage	N
Sex	Male	54.8	580
	Female	45.2	479
School class	8	11.1	118
	9	52.6	557
	10	36.3	384
Age	14 and under	16.6	176
	15	27.3	289
	16	32.7	346
	17	12.6	133
	18 and above	10.9	115
District	Dhading	17.3	183
	Morang	31.4	333
	Lalitpur	51.3	543
Ethnicity	Brahmin/Chhetri	42.6	451
	Newar	23.5	249
	Rai/Limbu/Sunuwar	10.7	113
	Others	23.2	246
Religion	Hindu	88.7	939
	Buddhist	7.4	78
	Others	2.8	30
	No religion	1.1	12

Table 2. Percentage distribution of respondents by selected socio-economic educational indicators

Indicators	Dhading	Morang	Lalitpur
Socio-economic:			
Drinking water	91.3	91.9	96.1
Electricity	0.0	52.6	99.6
Radio	89.1	62.5	98.9
Freezer	0.0	9.3	76.2
Motorbike	0.0	8.4	52.5
Car	0.0	1.8	22.8
Telephone	0.0	3.9	80.7
Computer	0.0	1.5	47.1
Mother's education:			
Illiterate	66.7	67.6	23.9
Informal	19.7	11.1	7.0
Primary	9.3	14.7	6.3
Some secondary	1.6	5.1	5.3
SLC	0.5	1.5	16.2
Above SLC	2.2	0.0	41.3
Father's education:			
Illiterate	33.3	33.3	9.0
Informal	18.6	9.3	6.8
Primary	27.9	28.2	8.5
Some secondary	7.7	15.0	3.7
SLC	4.9	9.6	7.9
Above SLC	7.7	4.5	64.1

Sources of information

All respondents were asked in the questionnaire who or what were their main sources of information regarding reproductive health (i.e., reproductive system, menstruation, pregnancy, contraception) and HIV/AIDS and other STIs. As illustrated in table 3, the most important sources of information for young people concerning general reproductive health issues were teachers, books, radio and television. Roughly half of the respondents also reported friends of the same sex and health workers as important sources, and young women frequently cited their mother and sister(s) as key resources for reproductive health knowledge.

The main difference found between young people's sources of information concerning reproductive health and STIs and HIV/AIDS was the role of the

Table 3. Percentage of young men and women reporting various sources of information regarding reproductive health (reproductive system, menstruation, pregnancy, contraception)

Indicators	Male	Female	
Mother	15.7	61.9	***
Father	18.8	12.3	*
Brother(s)	16.0	8.4	***
Sister(s)	6.8	40.7	***
Other family members	13.8	17.8	
Grandparents	9.0	15.0	*
Friends of the same sex	49.2	54.0	
Friends of the opposite sex	12.7	7.9	*
Teachers	79.4	79.5	
Health workers	49.7	50.0	
Television	50.6	55.8	
Cinema	34.1	31.5	
Radio	66.5	64.6	
Books/magazines	65.4	68.2	

*p<0.05 **p<0.01 ***p<0.000

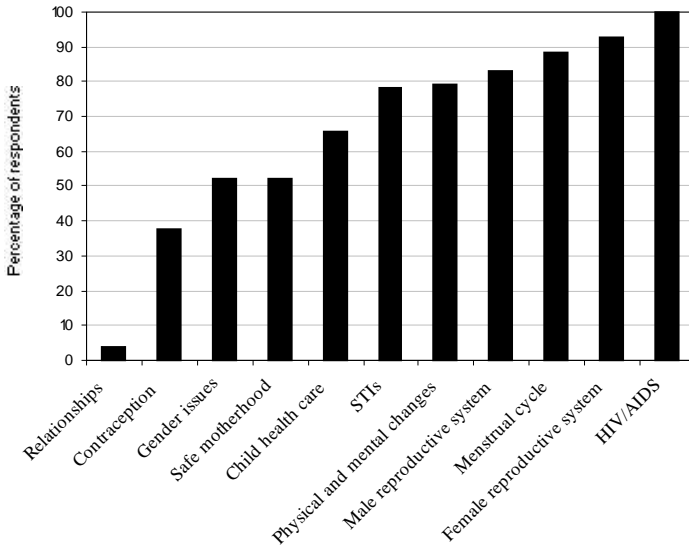
immediate family (see tables 3 and 4). Although mothers of young women appeared to be a central source regarding reproductive health knowledge, they did not appear to play such an important role in the provision of information on HIV/AIDs and STIs, for which fathers seemed to perform a somewhat increased role.

Variations between the three districts in young people's sources were investigated, with a number of significant differences being found. Young people whose homes were supplied with electricity were more likely to cite radio and television as major sources, as would be expected. Further, young women in Lalitpur were significantly more likely to report their mothers as a source of information regarding reproductive health issues (69 per cent) than their counterparts in the other two districts (Dhading: 60 per cent, Morang: 44 per cent); possibly owing in part to the concentration of more highly educated mothers in Lalitpur district.

Delivery of sex education in school

Section four of the questionnaire focused on pupils' experiences of the sex and sexuality education they had received at school. To monitor which subjects were actually being covered during sex education classes, the pupils were presented with a list of 11 topics and asked if they had received instruction on each.⁵

Percentage of respondents in class 10 reporting having received teaching on selected sex education topics at school



As shown in the figure over three quarters of the pupils in class 10 said they had definitely received instruction about the physical and mental changes which occur during puberty, the reproductive systems of both men and women, the menstrual cycle, HIV/AIDS and STIs. However, just over a third reported having been taught how to protect themselves from pregnancy (contraception) and under five per cent reported having been taught about relationships.

As expected, satisfaction with the issues covered increased significantly as pupils progressed through the school system. Only 15 per cent of pupils sampled in class 8 felt that their health education classes had covered all the sexual health issues they wanted to know about, compared with 28 per cent in class 9 and 40 per cent in class 10. Furthermore, variation was evident between the pupils in each of the six schools. In class 10, students' satisfaction in the different schools ranged from a high of 51 to a low of 30 per cent.

Table 4. Percentage of young men and women reporting various sources of information regarding STIs and HIV/AIDS

Indicators	Male	Female	
Mother	8.7	29.9	***
Father	11.9	21.4	***
Brother(s)	17.0	11.3	*
Sister(s)	7.1	32.3	***
Other family members	15.6	19.2	
Grandparents	7.3	13.7	*
Friends of the same sex	46.1	44.1	
Friends of the opposite sex	14.6	8.6	*
Teachers	83.1	77.4	*
Health workers	55.0	56.7	
Television	58.6	62.7	
Cinema	42.9	41.4	
Radio	69.9	68.4	
Books/magazines	73.8	69.0	

*p<0.05 **p<0.01 ***p<0.000

Level of knowledge

Table 5 displays the proportion of young men and women who responded correctly to the 16 true/false statements. It is clear that overall knowledge regarding many of the sexual health issues is relatively low; however, young men appeared to be more informed than their female counterparts, displaying significantly greater knowledge in half of the statements.

The notion that “having sexual intercourse whilst pregnant can harm the foetus” was believed by 95 per cent of both young men and women, almost 70 per cent of young women and 60 per cent of young men believed that “masturbation can cause serious damage to ones’ health”, a third of young people were aware that STIs can be asymptomatic and only 37 and 20 per cent of young men and women respectively correctly knew that condoms need to be removed from the penis while it is still hard.

Greatest knowledge existed with regard to HIV/AIDS. For example, 73 per cent of men and 60 per cent of women correctly knew that condoms could be used to protect against HIV infection and 71 and 73 per cent of young men and women respectively were aware that “individuals carrying the infection can look strong and healthy”.

Table 5. Percentage of respondents correctly responding to each true/false knowledge statement

Knowledge statement		Male	Female	
Reproductive health				
There is the possibility that a woman can get pregnant before she has had her first period	True	7.2	4.4	*
A woman will not get pregnant if she has sex standing up	False	21.0	14.4	*
There are times during a women's menstrual cycle when she has a greater chance of becoming pregnant if she has sex	True	50.7	39.5	***
A girl's hymen doesn't tear without sexual intercourse	False	36.0	39.5	
Sexual intercourse whilst pregnant harms the foetus	False	5.0	5.0	
STIs and HIV/AIDS				
If used properly condoms can protect against HIV transmission	True	73.4	60.1	***
There are diseases caught by having sex that can cause a woman to be unable to have a baby	True	58.8	53.4	
A person who looks strong and healthy can have HIV	True	71	72.7	
A person can get AIDS through mosquito, flea or bedbug bites	False	41.9	45.1	
A person with an STI can sometimes show no symptoms	True	31.7	36.3	
Myths				
Masturbation causes serious damage to health	False	40.7	30.5	**
A man needs to have sex regularly to maintain his masculinity	False	39	43.2	
Contraception				
The contraceptive pill works just as well even if the women has been sick or had diarrhoea	False	22.4	23.2	
Men can have a contraceptive injection (birth control injection) every couple of months to prevent getting a woman pregnant	False	27.9	20.0	**
Condoms can be used more than once	False	57.8	47.6	**
Condoms should not be removed from the penis while it is still hard/stiff	False	37.1	20.0	***

*p<0.05 **p<0.01 ***p<0.000

Table 6. Mean scores for each knowledge category by gender and school site

School site	Reproductive health (0-5)	STIs and HIV/AIDs (0-5)	Myths (0-2)	Contraception (0-4)
Males				
Dhading (1)	0.77	1.99	0.95	1.59
Morang (1)	1.39	2.84	0.66	1.34
Morang (2)	1.22	2.61	0.63	1.54
Lalitpur (1)	1.30	3.41	0.90	1.34
Lalitpur (2)	1.11	2.26	0.82	1.56
Lalitpur (3)	1.38	3.32	0.89	1.45
Sig	0.000	0.000	0.001	0.317
Females				
Dhading (1)	0.71	1.71	0.86	1.06
Morang (1)	1.36	2.12	0.51	1.05
Morang (2)	1.53	2.47	0.43	1.40
Lalitpur (1)	0.96	3.44	0.79	1.07
Lalitpur (2)	0.97	1.79	0.79	1.24
Lalitpur (3)	1.09	3.44	0.78	1.09
Sig	0.000	0.000	0.003	0.556

Table 6 displays the school-level mean scores for both men and women in each of the four knowledge categories. As shown, significant differences in knowledge between the six sites were apparent for all topics except that of contraceptive knowledge.

The maximum possible knowledge score in the reproductive health category was 5. No pupil received full marks and only eight pupils correctly answered four out of the five questions; 64 per cent of young men and 73 per cent of women scored less than two. General knowledge regarding contraception was also found to be low, with only 3 and 2 per cent of men and women, respectively, correctly answering all four questions as compared with 19 and 34 per cent respectively not getting any of the answers correct. More encouraging were the scores for STI and HIV/AIDS knowledge. Overall, 9 per cent of men and women correctly answered all five questions and only 15 per cent of men and 20 per cent of women scored less than two.

Determinants of knowledge

It would appear that success, to a certain degree, has been achieved in the delivery of health messages concerning HIV/AIDS, the statements “individuals with HIV/AIDS can look strong and healthy” and “when used properly condoms can protect against HIV” (the two highest-scoring statements) were therefore selected as dependent variables in the logistic regressions performed to identify factors associated with increased knowledge.

When used properly condoms can protect against HIV

Factors found to be predictive of young people’s knowledge concerning the use of condoms to protect against HIV are displayed in table 7. As shown, young men who live in Morang have a little over seven times the odds of knowing that condoms protect against HIV as young men who live in Dhading district; likewise, young men in Lalitpur have 1.8 times the odds. Similar findings are evident among the young women, where odds are increased by about 21 and 6 times in Morang and Lalitpur, respectively. As a young person progresses through the school system, knowledge is found to increase significantly. Young men and women in class 10 are 3.1 and over 10 times, respectively, as likely to have correct knowledge about condoms than their peers in class 8, after controlling for all other factors. School type also appears to impact on levels of knowledge. Students attending the privately run school were found to have up to 3 times the odds of correct knowledge as similar students attending State-run establishments.

Other factors found to be significant in the male model included the cited sources of information regarding HIV and topics covered during sex education classes delivered at school. As illustrated in table 7, young men who reported their brothers, television and magazines/books as main sources of information on HIV/AIDS were roughly 2 to 3 times as likely in each case to correctly know that condoms can protect against HIV if used properly as those who did not cite each as sources. Finally, young men who had received basic sex education at school (the physical and mental changes that occur at puberty, the male reproductive system and safe motherhood) had significantly greater odds of knowledge than those who had not attended classes, after all other factors had been controlled for.

Additional significant knowledge predictors in the female model included religion, father’s educational level, sex education received at school, and television and books as main sources of HIV/AIDS information.

Table 7. Odds ratios from logistic regression analyses predicting the effects of various characteristics on the likelihood of correct knowledge

Characteristic		Odds ratio
Men		
District	Dhading	1.00
	Morang	7.42 ***
	Lalitpur	1.79
Class	8	1.00
	9	1.87
	10	3.14 **
Source of HIV information	Brother	3.05 *
	Television	2.33 **
	Books/magazines	2.29 **
Sex education received	Physical and mental changes	2.04 *
	Male reproductive system	2.57 **
	Safe motherhood	2.44 **
Type of school	Public	1.00
	Private	2.47 *
Constant		0.03
Df		11
-2 Log likelihood		469.70
Women		
District	Dhading	1.00
	Morang	21.26 ***
	Lalitpur	5.82 ***
Class	8	1.00
	9	5.79 **
	10	10.19 **
Religion	Non-Hindu	1.00
	Hindu	0.33 *
Father's education	Illiterate	1.00
	Primary/informal	2.92 *
	Secondary/SLC	1.32
	Above SLC	3.98 **
Source of HIV information	Television	1.98 *
	Books/magazines	3.49 ***
Sex education received	Physical and mental changes	5.39 ***
	The menstrual cycle	0.32 *
Type of school	Public	1.00
	Private	2.94 *
Constant		0.007 ***
Df		13
-2 Log likelihood		355.54

*p<0.05 **p<0.01 ***p<0.000

Young women who practised Hinduism were significantly less likely to respond with the correct answer and, after controlling for all other factors, young women with more educated fathers were more likely to respond correctly. For example, women whose fathers were educated above SLC level had almost 4 times the odds of being correct as those with illiterate fathers.

The sources of information which were found to significantly impact on knowledge among young women concerning the use of condoms as a protection against HIV included television and magazines/books, which increased the odds by 2.0 and 3.5 times respectively. As with young men, young women who reported basic sex education teaching at school (physical and mental changes at puberty) were significantly more likely to have correct knowledge; however, after controlling for all other factors, young women who had received teaching on the menstrual cycle were 68 per cent less likely to respond correctly (although this finding was only just significant at the 5 per cent level).

People who have HIV/AIDS can look strong and healthy

Factors found to be predictive of young men's and women's knowledge concerning the appearance of individuals infected with HIV are displayed in table 8.

Father's level of education appeared to be a significant predictor of correct knowledge among the young men sampled. For example, young men whose fathers were educated to degree standard had 2.3 times the odds of providing a correct response as young men who had illiterate fathers. Furthermore, young men who reported books and television as a main source of information regarding HIV/AIDS had roughly twice the odds of knowing that people infected with HIV can look strong and healthy as those not accessing such sources. Young men who rely on teachers as an informative source were, however, found to be significantly less likely to respond correctly.

Having received basic sex education at school (physical and mental changes during puberty and the male reproductive system) was also found to be significantly associated with odds of correct knowledge; however, unlike the previous model, receiving safe motherhood education at school this time decreased the odds by 43 per cent, after controlling for all other factors.

Having received basic sex education at school (physical and mental changes during puberty and the male reproductive system) was also found to be significantly associated with odds of correct knowledge; however, unlike the previous model, receiving safe motherhood education at school this time decreased the odds by 43 per cent, after controlling for all other factors.

Table 8. Odds ratios from logistic regression analyses predicting the effects of various characteristics on the likelihood of correct knowledge regarding the healthy appearance of individuals infected with HIV

Characteristics		Odds ratio	
Men			
Father's education	Illiterate	1.00	
	Primary/informal	0.80	
	Secondary/SLC	2.80	**
	Above SLC	2.31	**
Source of HIV information	Teachers	0.55	*
	Television	2.22	**
	Books/magazines	2.39	***
Sex education received	Physical and mental changes	1.71	*
	Male reproductive system	2.51	**
	Safe motherhood	0.57	**
Constant		0.50	
Df		9	
-2 Log likelihood		602.15	
Women			
Mother's education	Illiterate	1.00	
	Primary/informal	1.06	
	Secondary/SLC	5.49	**
	Above SLC	2.16	(10%)
Source of HIV information	Books/magazines	2.43	***
Sex education received	Male reproductive system	1.89	*
	Relationships	4.13	*
Number of amenities / household assets	0-2	1.00	
	3-5	0.92	
	6-7	2.90	**
	8-10	1.90	(10%)
Constant		0.44	
Df		9	
-2 Log likelihood		458.13	

*p<0.05 ** p<0.01 ***p<0.000

Among the young women, mothers' education appeared to be a good predictor of knowledge; young women whose mothers had completed secondary education or higher had significantly raised odds of correct knowledge. The use of written literature as a source of HIV/AIDS information provided young women

with significantly increased knowledge, and young women who reported receiving some basic sex education including the teaching of the male reproductive system and the role of relationships were roughly 2 and 4 times as likely to know that HIV-infected individuals can look healthy as similar young women not receiving such instruction. Finally, level of social-economic deprivation, as measured by the number of amenities in the household, significantly impacted on the likelihood that a young woman knew that people with HIV can look strong and healthy, with young women living in more affluent households displaying greater awareness.

Discussion

In the context of a global decline in age of sexual maturation and rising age of marriage, the window of opportunity for young people to engage in premarital sexual relations is opening. Social taboos and inhibitions have in the past limited the study of Nepalese young people's sexual knowledge, attitudes and behaviour; however, with the advent of HIV/AIDS and increasing prevalence of STIs there has been a realization of the need to provide young people with information and skills to reduce their vulnerability to negative sexual health outcomes.

The results presented here are from a sex and sexuality education survey distributed among young people at secondary school. It forms part of a much larger study looking at the barriers and opportunities to developing a more comprehensive sex education curriculum. It is recognized that the analyses are based on a relatively small proportion of young people in Nepal and include only those attending school. Also, the purposive sampling techniques employed mean that the final respondent sample is not truly representative of all young people in school classes 8, 9 and 10. Nevertheless, the results highlight several key issues which merit further attention and have a direct bearing on health promotion and school curriculum development activities.

With regard to young people's sources of information about sexual health issues, the results from this study clearly show that schools play an important role in informing young people about sexual health matters. However, on examination of the topics that are being covered in class, it is apparent that the more easily taught, less challenging, factual and biological issues are fairly consistently being covered, whereas the broader issues such as feelings and relationships are often being overlooked. Although it is crucial that young people be given the basic facts on such things as the male and female reproductive systems, the menstrual cycle, HIV/AIDS and methods of contraception, unless these are provided in conjunction with the skills training to enable young people to communicate their wishes and

desires effectively, it is unlikely that the knowledge gained will lead to effective behaviour change.

This study found in-depth knowledge regarding many sexual health issues to be low among both young men and young women in Nepal, with the exception of particular knowledge concerning HIV/AIDS. Although young men appear to be better informed than young women, myths about masturbation and virility remain widespread and detailed knowledge regarding contraception remains sparse.

The results of the modelling, which attempts to identify factors predictive of HIV/AIDS knowledge, show that awareness regarding the use of condoms to avoid exposure to HIV infection improves as pupils move up through the school classes; however, clear disparities are evident between the districts and schools sampled. Young people living in the most remote district, Dhading, with little access to modern media, have significantly reduced levels of knowledge, compared with young people living in the more developed districts of Morang and Lalitpur, after controlling for all other factors. Furthermore, pupils, and in particular female students, in Morang district, appeared to be better informed than their counterparts in Lalitpur. This unexpected outcome, given the relative levels of social deprivation and modernization in the two districts, could possibly be explained by the presence of a Healthy Schools Programme in Morang, run by PLAN International.⁶ Although the initiative is not being implemented in the specific schools included in this particular study, the information that is being provided by the programme could possibly be filtering into the wider community and thereby increasing overall knowledge.

Parental education, rather than district of residence, was found to be a much greater predictor of knowledge regarding the healthy appearance of individuals infected with HIV. This finding could purely be a reflection of the differential levels of development in the three regions; alternatively, it might be that more educated parents, having greater awareness of the impact that HIV can have on an individual's health, subsequently transfer correct knowledge to their children.

In all the models, the detrimental effect of social deprivation on young people's level of knowledge is highly evident along with the positive impact that exposure to visual media messages and access to informative sources of literature can have. In every instance, young people who cite television and magazines/books as main sources of information on HIV have substantially increased odds of correct knowledge. Finally, but by no means least, young

people who have received basic sex education at school are, in general, better informed as a result, even after controlling for all other factors including age, district, social deprivation and exposure to media.

Although this research, on which further work is required, leaves a number of key questions unanswered, it is clear that if the desired shift in behaviour to reduce HIV/AIDS and STI prevalence and the number of unwanted pregnancies is to be achieved, we need to take a multifarious approach to delivering knowledge to tackle the issues. Appropriately designed and relevant educational activities need to be targeted, not only at young people, but also at the parents and elderly persons from whom they seek information and guidance. The results of this study would indicate that media messages delivered via visual means are effective; however, many people in Nepal do not have access to such amenities so alternative means of transferring messages need to be explored. Since many people are also illiterate, this is not a simple task.

Although Nepal has incorporated sex and sexuality education into its national curriculum, it is still very much in its infancy and requires further monitoring and evaluation. Nevertheless, given the relatively short period of time that the programme has been running, the results presented here clearly show the potential that schools have to contribute to improved learning about sexual and reproductive health matters. Detailed and comprehensive knowledge among many young people, and in particular young women, appears to be remain low, emphasizing the need for further curriculum and teacher training material development with a shift away from superficial biological coverage towards a more inclusive programme.

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Endnotes

1. Age and sex distribution unspecified.
2. Classes are organized by level of ability not by age; however, ages of the sample ranged from a low of 12 to a high of 22 with 87 per cent aged between 14 and 17 years.
3. All schools, whether government-run or private, are obliged to cover the same curriculum.
4. Factors tested in the model included: district, school site and type, age, class, ethnicity/caste, religion, importance of religion, sources of HIV/AIDS information, topics covered during school sex education classes, highest educational level of mother and father, and level of socio-economic deprivation.
5. Each of these 11 topics are listed in the curriculum handbook.
6. A child-focused, non-profit developmental organization aiding deprived children in developing countries.

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