Prevalence and Correlates of Sexual Risk Behaviors among Nepalese Students

Ramesh Adhikari[1]

This paper explores the prevalence of sexual risk behaviors for HIV among students in Nepal, and investigates the factors that may influence such behaviors. A self-administered questionnaire was completed by 1,276 (636 male and 640 female) students. A composite index of sexual risk behavior was constructed. Associations between sexual risk behavior and explanatory variables were first assessed using Chi-square tests, then further explored using multivariate logistic analysis (binary logistic regression). The study found that sex of the student, marital status, level of education, alcohol consumption, exposure to pornography and close unmarried friends' sexual behavior are the main predictors of sexual risk behavior. Male students were about three times more likely to be involved in sexual risk behavior than female students. Unmarried students who received reproductive health (RH) education were less likely to be engaged in sexual risk behavior than married students. On the other hand, students who consumed alcohol frequently, who were exposed pornography and who had close unmarried friends with experience of sexual intercourse were more likely to be engaged in sexual risk behavior for HIV than their comparison groups. Students, especially male students, are exposed to health hazards through their sexual behavior. This problem should be addressed early by targeting these groups of high-risk students.

Keywords: *Sexual risk behavior, students, sex workers, multiple sex partners, condom use*

Background

Nepal is categorized as a country facing a concentrated HIV epidemic. In 2013, the National Centre for AIDS and STD Control (NCASC) estimated that there were 40,720 people living with HIV in Nepal, with an adult HIV prevalence of 0.23% (NCASC, 2014). The National HIV and AIDS Strategy (2011-2016) and Nepal HIV Investment Plan (2014-16) identify the following key populations at high risk of spreading the epidemic: people who inject drugs, female sex workers and their clients, migrant workers and their spouses and men who have sex with other men (NCASC, 2012). Increasing opportunities for sexual intercourse and non-use of contraceptives have increased the risk of unwanted pregnancy, abortion and STDs, including HIV/AIDS.

Studies indicate that most Asian societies fall within the stage of the demographic and youth transition, and this youth bulge is an important political and policy issue (Xenos & Kabamalan,

[1] Geography and Population Department, Mahendra Ratna Campus, Tribhuvan University, Kathmandu, Nepal. Email: rameshipsr@gmail.com

The University Grant Commission, Nepal provided funding for this study. The author also wishes to thank the administrators of all of the sampled colleges for their support and the students for participating in the study.

2002). In Nepal, young people's sexuality is often stigmatized (Adhikari & Tamang, 2009; Puri & Cleland, 2006; Dahal, 2008). Strong norms persist that prohibit premarital sexual contact between young men and women, and the topic of sexuality largely remains taboo. School teachers and health service providers are also reluctant to discuss the issues of sexuality (Pokharel, Kulczyki & Shakya, 2006).

These attitudes towards sex and sexuality are primarily derived from ancient Hindu and Buddhist texts (Francoeur & Noonan, 2004), as more than 90% (81% Hindu and 9% Buddhist) of the population practice these religions (Central Bureau of Statistics, 2012). Nepalese parents in many rural areas even discourage their daughters from meeting with or talking to boys (Burbank, 1994). Many people do not want their daughters or sisters to have pre-marital sexual relationships. A study surveying college students found a wide variation in attitudes regarding female and male virginity at marriage, particularly based on the sex of the participants. More than two-thirds of the female students (67%), as compared with only about two-fifths of the male students (44%), agreed that a woman should be a virgin at marriage (Adhikari, 2008).

A review study on sex and HIV education programs revealed that such programs are effective in improving sexual behavior among youth, both in developed and developing countries (Kirby, Laris & Rolleri, 2007). Studies also found that sex and HIV education program also reduced the number of sexual partners (Campbell & Lubben, 2003; Barnett, Koning & Francis, 1995) and increased consistent condom use (Kirby, Laris & Rolleri, 2007; Bennell, Hyde & Swainson, 2002).

However, as more young people delay marriage, customary attitudes have been changing. Declining influence of family combined with increasing urbanization, migration and exposure to mass media have contributed to major changes in social and sexual behavior among adolescents (WHO, 1993; Gubhaju, 2001; Regmi, 2008). Due to social restrictions, disclosure of sexual risk behavior is rare. However, a few studies that have been conducted in Nepal indicate a growing trend towards sexual risk behavior (Adhikari & Tamang, 2009; Regmi, 2008; Puri, 2002).

A study conducted in the border towns of Nepal showed that a significant proportion of sexually-experienced, unmarried, young men (ages 18-24) had engaged in sex with a non-regular partner, and had intercourse with sex workers in the 12 months preceding the survey. This study also found that use of condoms during sex with non-regular partners was generally low, with only a small proportion of participants considering themselves to be at risk of contracting sexually transmitted infections and HIV (Tamang, Nepal, Puri & Shrestha, 2001).

Other important factors that have been associated with sexual risk behaviors are socioeconomic status (SES) and living arrangement. Adolescents from low SES families and living in single-parent households have been found to have high-risk behavior (Kalmuss, Davidson, Cohall, Laraque & Cassell, 2003). It has also been shown that young people with few economic resources and those with less stable living environments are more likely than their peers to engage in sexual risk behaviors (Rwenge, 2000).

In Nepal, improving HIV prevention coverage along with behavioral change remains the

primary focus of programs for key populations. While the country has achieved relatively high program coverage among sex workers, improving coverage among migrants remains a huge challenge due to the large migrant population. The last three national strategies have continued to plan for the implementation of more targeted interventions. As a result, the declining trajectories of HIV prevalence and incidence among adult populations over the period of last 10 years stands out as cogent evidence of effective and sustained targeted interventions (NCASC, 2014).

Sexual and reproductive health issues remain the leading cause of ill-health among young people worldwide and are a growing concern in Nepal (Jha, Chaurasia & Jha, 2010). It is important to know about their influence on students' sexual risk behavior for HIV in the Nepalese context so that it is possible to establish priorities for intervention to prevent high-risk sexual behavior. This article aims to analyze the prevalence and investigate the factors associated with sexual risk behavior among students. We hypothesized that level of education, living arrangement, substance use and peers' sexual behavior are associated with sexual risk behavior. This study population has been singled out for two reasons. First, students' sexual behavior is an under-researched area in Nepal. Second, the results could be used to design appropriate college or university-based interventions.

Methods

The data used in this study is from a cross-sectional survey carried out in 2010. A multi-staged random sampling technique was employed for selection of the college/university male and female students. In order to select colleges, a list of all the private and public colleges was obtained from the office of the Vice Chancellor in Kathmandu. This list included all the colleges that provide intermediate (commonly known as Grade 11 & 12), undergraduate and graduate degrees.

In the first stage, 20 colleges were selected randomly from five out of 75 districts in Nepal. In the second stage, two classes were selected randomly from each sampled college/university. The number of students in each class ranged from 40 to 60 students. In each class, 32 (16 male and 16 female) students were selected randomly. A self-administered structured questionnaire in Nepali language was used to obtain information from the students. The questionnaires were pre-tested among students in a non-selected college/university and later refined as required. Since all the sampled colleges/universities were co-educational, students were selected among those who were present on the day of the interview in the sampled classes. Sampled male and female students were kept in separate classrooms. Each student was allocated a separate bench/chair, as in an exam setting, before the questionnaire was distributed to them. A male researcher supervised the male students' class while a female researcher supervised the female students' class. Students were then requested to place the completed questionnaire on a table in the corner of each class. Four male students who were selected for interview refused to participate in the study. A total of 1,276 (636 male and 640 female) students were interviewed.

Written informed consent was obtained from the study participants, and the study was approved by the Research Ethics Committee of the University Grant Commission of Nepal.

The measurable outcome of the study is sexual risk behavior, a dichotomous variable. If any of the following three criteria was met in the last 12 months, participants were considered to be engaging in sexual risk behavior: 1) Sex with multiple partners; 2) Sex with sex workers; 3) No condom use with casual sex partner.

The independent variables used in the study were: sex of the students; age; level of education; religion; marital status; received reproductive health (RH) education in school/college; comprehensive knowledge about HIV/AIDS; migration status; work status; living arrangement; alcohol consumption; exposure to pornography; parental status; family structure; source of family income; peer drinking habits; and experience in sexual intercourse of close unmarried friends. These variables were organized into two or three categories, based on those used in other literature, as well as on the frequency distribution of the variables.

Comprehensive knowledge of HIV/AIDS was measured by five statements: identifying that using condoms and limiting sex to one faithful, uninfected partner are two ways to prevent HIV/AIDS transmission; rejecting two common misconceptions that mosquitoes transmit HIV/AIDS and sharing food with an infected person transmits HIV/AIDS; and knowing that a healthy-looking person can have HIV/AIDS. Similarly, exposure to pornography was separated into three categories: no exposure (never watched), moderate exposure (watched 1-2 times in a month) and high exposure (watched frequently, i.e. at least one time in a week). Level of education was coded into three categories; intermediate (commonly known as Grade 11 & 12), undergraduate and graduate degrees.

Reproductive health education is taught in formal curriculum, but this course is optional for college students. The variable "received RH education" was separated into two categories: yes and no. Likewise, work status was split into two categories: working (students engaged in part-time or full-time jobs were considered working) and not working.

Similarly, marital status of students was coded into two categories: married and unmarried/ single. The variable "living arrangement" was also organized into two categories: those students who lived with their family members were considered "with biological family" and those who lived away from family members were considered "without biological family." The other independent variables were categorized in the same way.

Computing median age at first intercourse can be misleading when a considerable number of respondents have not become sexually active by the time of data collection. One solution is to employ a life table survival analysis method that uses age at the time of the survey as the censoring time for those who had not yet had sex (Zaba et al., 2004). We preferred this method, using current age and current virginity status.

Both bivariate and multivariate techniques were applied to identify the factors associated with the likelihood of being involving in sexual risk behavior. A Chi-square test was used to determine associations. The variables were re-examined using multivariate analysis (binary

logistic regression) in order to identify the significant predictors after controlling other variables.

Results

Background characteristics of sampled population

An overwhelming majority of the students (91%) were in the youth category (15-24 years). Eighty-seven percent were unmarried. More than two-thirds (70%) were migrants from different districts. About a quarter of the students were working part time, and about one-third reported that they were living without family members in their current place of residence. More than half of the students (57%) reported agriculture as their source of family income. About one-fifth of the students (18%) frequently consumed alcohol, and more than three-fifths had been exposed to pornography. More than a quarter of the students reported that they had close friends who drank alcohol frequently. Similarly, more than two-thirds of the students mentioned that they had close unmarried friends who had engaged in sexual intercourse.

Table 1: Background characteristics of students

		Number	Percent
Sex	Female	640	50.2
	Male	636	49.8
Education level	Intermediate	444	34.8
	Undergraduate	589	46.2
	Graduate degree	243	19.0
Age group	15-19	300	23.5
	20-24	864	67.7
	25 and older	112	8.8
Religion	Non-Hindu	52	4.1
	Hindu	1,224	95.9
Marital Status	Married	168	13.2
	Unmarried	1,108	86.8
Received RH education	No	152	11.9
	Yes	1,124	88.1
Comprehensive knowledge about HIV/AIDS	No	556	43.6
	Yes	720	56.4
Migration status	Non-migrant	380	29.8
	Migrant	896	70.2
Work status	Not working	975	76.4
	Working	301	23.6
Living arrangement	With family members	831	65.1
	Without family members	445	34.9
Alcohol consumption	Never/rarely drunk	1,050	82.4
	Consumed alcohol	224	17.6
Exposure to pornography	No exposure	485	38.0
	Moderate exposure	742	58.2

		Number	Percent
	High exposure	49	3.8
Parental status	Have single/no parents	50	3.9
	Have both father and mother	1,226	96.1
Family structure	Joint family	300	23.5
	Nuclear family	976	76.5
Source of family income	Agriculture	723	56.7
	Non-agriculture	553	43.3
Peer alcohol consumption habits	Not drinker	909	71.2
	Drinker	367	28.8
Have unmarried friends	No	749	58.7
who have sexual intercourse	Yes	527	41.3
Total		1,276	100.0

Sexual behavior

Overall, more than two-fifth of the students (42%) had engaged in sexual intercourse. Three-fourths of the sexually-active students (75%) had first experienced intercourse at age 15 to 17. Median age at first intercourse, calculated using life table survival analysis, was found to be 21.3 years for male students and 22.9 years for female students. Nearly half of the male students who were sexually active (46%) had multiple sex partners while the percentage with multiple partners was low (15%) among female students. Furthermore, more than one-fourth of sexually-active male students (26%) had intercourse with sex workers (Table 2).

Table 2: Sexual behavior (life-time) among male and female students

	Male	Female	Total
Ever had sexual intercourse			
Yes	50.0	34.7	42.3
No	50.0	65.3	57.7
Total	**100.0**	**100.0**	**100.0**
Number	**636**	**640**	**1276**
Age at first intercourse			
Less than 15 years	3.5	0.9	2.4
15-17 years	80.2	67.6	75.0
18 or more years	16.4	31.5	22.6
Median age (from life table survival analysis)	21.3	22.9	22.2
Number of sex partners			
One partner	53.5	85.1	66.5
2 partners	24.8	11.7	19.4
3 or more partners	21.7	3.2	14.1
Sex with sex workers			
No	74.5	95.9	83.3
Yes	25.5	4.1	16.7

	Male	Female	Total
Condom use with casual sex partners			
Did not have sex with casual sex partners	35.8	22.2	34.4
Every act of sexual intercourse	35.8	22.2	34.4
Sometimes	12.3	-	11.1
Never	16.0	55.6	20.0
Total	**100.0**	**100.0**	**100.0**
N	**318**	**222**	**540**

Socio-demographic correlates with sexual risk behavior

As mentioned earlier, if any of the following criteria was met in the last 12 months, participants were considered to be engaging in sexual risk behavior: 1) Sex with multiple partners; 2) Sex with sex workers; 3) No condom use with casual sex partner.

Overall, approximately one-fifth of the students (17%) were involved in sexual risk behavior. A significantly higher proportion of male students (29%) than female students (6%) were involved in sexual risk behavior. Table 3 shows clear associations between sexual risk behavior and students' age, marital status, RH education, migration status, work status, living arrangement, alcohol consumption, exposure to pornography, peer drinking habits and close friends' premarital sexual behavior. When compared to other students, the following participants were more likely to engage in sexual risk behavior: students ages 25 or older; those who were married; those who did not receive reproductive health education; those who were migrants; those who lived without family members; those who consumed alcohol frequently; those who had high exposure to pornography; those who had close friends who drink alcohol frequently; and those who had close unmarried friends with sexual experience (Table 3).

Table 3: Sexual risk behavior (within past 12 months) by background characteristics

Variables		Sexual risk behavior		Total	
		Yes	No	Percent	Number
Sex of student ***	Female	6.2	93.8	100.0	640
	Male	28.6	71.4	100.0	636
Education level	Intermediate	16.0	84.0	100.0	444
	Undergraduate	19.9	80.1	100.0	589
	Graduate degree	14.0	86.0	100.0	243
Age group **	15-19	12.0	88.0	100.0	300
	20-24	18.2	81.8	100.0	864
	25 and older	25.9	74.1	100.0	112
Religion	Non-Hindu	26.9	73.1	100.0	52
	Hindu	17.0	83.0	100.0	1224
Marital Status ***	Married	29.8	70.2	100.0	168
	Unmarried	15.5	84.5	100.0	1108

Variables		Sexual risk behavior		Total	
		Yes	No	Percent	Number
Received RH education*	No	19.1	80.9	100.0	152
	Yes	17.2	82.8	100.0	1124
Comprehensive knowledge about HIV/AIDS	No	16.4	83.6	100.0	556
	Yes	18.2	81.8	100.0	720
Migration status***	Non-migrant	12.6	87.4	100.0	380
	Migrant	19.4	80.6	100.0	896
Work status***	Not working	14.8	85.2	100.0	975
	Working	25.9	74.1	100.0	301
Living arrangement***	With family members	12.4	87.6	100.0	831
	Without family members	26.7	73.3	100.0	445
Alcohol consumption***	Never/rarely drink	11.3	88.7	100.0	1050
	Consumed alcohol	45.5	54.5	100.0	224
Exposure to pornography ***	No exposure	6.4	93.6	100.0	485
	Moderate exposure	22.6	77.4	100.0	742
	High exposure	46.9	53.1	100.0	49
Parental status	Have single/no parents	24.0	76.0	100.0	50
	Have both father and mother	17.1	82.9	100.0	1226
Family structure	Joint family	20.0	80.0	100.0	300
	Nuclear family	16.6	83.4	100.0	976
Source of family income	Agriculture	17.7	82.3	100.0	723
	Non-agriculture	17.0	83.0	100.0	553
Peer alcohol consumption habits ***	Not drinker	11.2	88.8	100.0	909
	Drinker	32.7	67.3	100.0	367
Have unmarried friends who have sexual intercourse***	No	4.8	95.2	100.0	749
	Yes	35.3	64.7	100.0	527
Total		17.4	82.6	100.0	1276

Note: Significant at Chi-square test ***= p<.001, **=p<.01, *=p<.05

These relationships observed in bivariate analysis were reassessed using logistic regression to identify adjusted association with the probability of engaging in sexual risk behavior. The results are presented in Table 4. As shown in the table, sex of the student, marital status, RH education, alcohol consumption, exposure to pornography and unmarried friends' sexual behavior were statistically significant predictors after controlling other variables. Male students were about three times more likely [Adjusted odds ratio, (aOR = 2.9)] to be involved in sexual risk behavior than female students. Unmarried students (aOR = 0.12) were less likely to be

involved in sexual risk behavior than married students. Students who were educated in reproductive health were 46 percent less likely (aOR = 0.54) to be involved in sexual risk behavior than those who did not study reproductive health. Those students who consumed alcohol frequently were about three times more likely (aOR = 2.9) to involve in sexual risk behavior than those who never/rarely drank alcohol (Table 4).

Those students who had moderate or high exposure to pornography were about two and three times more likely, respectively, to be engaged in sexual risk behavior than those who were never exposed. Even more dramatically, those students who had unmarried friends with experience with sexual intercourse were nine times more likely (aOR = 9.4) to be involved in sexual risk behavior than those who did not have such friends (Table 4).

Table 4: Adjusted Odd Ratio (aOR) and 95% CI for sexual risk behavior among Nepalese students

Predictors	aOR	95% CI
Sex		
Female	1.00	
Male	2.87***	1.76-4.69
Age group		
15-19	1.00	
20-24	1.17	0.73-1.87
25 and older	1.95	0.97-3.89
Marital Status		
Married	1.00	
Unmarried	0.12***	0.07-0.22
Received RH education		
No	1.00	
Yes	0.54*	0.31-0.94
Migration status		
Non-migrant	1.00	
Migrant	1.11	0.72-1.71
Work status		
Not working	1.00	
Working	1.27	0.86-1.88
Living arrangement		
With family members	1.00	
Without family members	1.22	0.83-1.80
Alcohol consumption		
Never/rarely drink	1.00	
Frequently consumed alcohol	2.99***	1.99-4.48
Exposure to pornography		
No exposure	1.00	
Moderate exposure	1.56*	1.01-2.54
High exposure	2.76**	2.35-6.30
Peer alcohol consumption habits		

Not drinker	1.00	
Drinker	1.03	0.69-1.54
Have unmarried friends with experience of sexual intercourse		
No	1.00	
Yes	9.72***	5.97-15.82
Constant	*0.085****	
-2 Log likelihood	*800.85*	
Cox & Snell R Square	*0.255*	

Note: ***= p< .001, **=p< .01, *=p< .05

Discussion and Conclusions

The objectives of this investigation were to examine the prevalence of sexual risk behaviors among students in Nepal, and investigate the factors that may influence young people's behavior. The study sheds light on at-risk populations and identifies some variables that have significant effects on sexual risk behavior.

The findings, particularly that a substantial number of students are involved in sexual risk behavior, have important programmatic implications. This can certainly increase negative consequences, such as STDs including HIV/AIDS. It is important to provide information and raise awareness with school-based family life education courses that address reproductive health needs in a holistic manner.

In contrast to findings in Tanzania (Kapiga & Lugalla, 2002), this study revealed that unmarried students are less likely to engage in sexual risk behavior. A study conducted among Filipino men found that unmarried men were more likely to report multiple sex partnerships compared to married men (Saniel & de los Reyes, 2010). The contrary result in this study regarding marital status could be because most of the married youth got married at a young age and extramarital sex is taboo in the society. This explanation needs further investigation, however.

Although the college curriculum does not require courses on sexual risk behavior, those students who had received RH education in college were less likely to be involved in sexual risk behavior than those who had not. This may be because teachers who teach RH usually teach about sexual risk behavior, including the prevention of unwanted or unplanned pregnancies and STDs including HIV/AIDS.

Results from this study are similar to most other studies: alcohol use contributes to a lower use of condoms (Adhikari, 2010) and elevated rates of sexual risk (Hutton et al., 2013; Espada et al., 2013). Likewise, students exposed to pornography were more likely to engage in sexual risk behavior than those who were never exposed. Other studies also show that pornography use tends to be associated with elevated risk-taking behaviors (Willoughby, Carroll, Nelson & Padilla-Walker, 2014). This study found that peer behavior is highly associated with sexual risk behavior, as well, similar to other studies (Donenberg, Emerson, Bryant & King, 2006; Zambuko & Mturi, 2005).

There are some limitations to this investigation. First, because of the cross-sectional design and

the nature of the items used in the logistic regression analysis, the study can only provide evidence of statistical association between those items and sexual risk behavior and cannot show cause-effect relationships. Second, all measures were self-reported. Thus, responses may have been biased by recall errors or intentional misreporting of behavior. However, the privacy conditions around the study and the use of self-administered questionnaires are likely to have minimized purposeful misreporting.

The results highlight the need for concerted efforts to educate Nepalese students about all the aspects relating to HIV/AIDS with focus on safer sex practices including reduction of sexual partners and consistent condom use. Hence, there is need to plan and implement specific intervention programs for college students. Traditionally, the focus of awareness and prevention programs has been on high- risk groups, such as sex workers and migrant workers (NCASC, 2014). The evidence from our study highlights the need to expand the scope of such programs to include comprehensive HIV education for college students.

References

Adhikari, R. (2010). Are Nepali students at risk of HIV? A cross-sectional study of condom use at first sexual intercourse among college students in Kathmandu. *Journal of the International AIDS Society*, 13:7. http://dx.doi.org/10.1186/1758-2652-13-7

Adhikari, R. & Tamang, J. (2009). Premarital sexual behavior among male college students of Kathmandu, Nepal. *BMC Public Health*, 9, 241. http://dx.doi.org/10.1186/1471-2458-9-241

Adhikari, R. (2008). *Attitude and behavior towards premarital sex among college students of Kathmandu, Nepal.* Kathmandu, Nepal: University Grant Commission.

Barnett E., Koning, Kd. & Francis, V. (1995). *Health and HIV/AIDS education in primary and secondary schools in Africa and Asia*. London: Department for International Development.

Bennell, P., Hyde, K. & Swainson, N. (2002). *The impact of the HIV/AIDS epidemic on the education sectors in Sub-Saharan Africa: A synthesis of the findings and recommendations of three country studies.* England: Centre for International Education, University of Sussex Institute of Education.

Burbank, J. (1994). *Culture shock: Nepal. A guide to customs and etiquette.* London: Kuperard Ltd.

Campbell, B. & Lubben, F. (2003). The provision of a health promoting environment for HIV/AIDS education: The case of Namibian senior secondary schools. *International Journal of Educational Development*, 23, 529-542. http://dx.doi.org/10.1016/s0738-0593(03)00058-0

Central Bureau of Statistics. (2012). *National population and housing census, 2011* (National Report). Government of Nepal. National Planning Commission Secretariat. Katmandu, Nepal: Central Bureau of Statistics.

Dahal, G. (2008). *Sexual and contraceptive behavior among men in Nepal: The need for male friendly reproductive health policies and services.* Lewiston, NY: Mellen Press.

Donenberg, G. R., Emerson, E., Bryant, F. B. & King, S. (2006). Does substance use moderate the effects of parents and peers on risky sexual behavior? *AIDS Care*, 18(3), 194-200. http://dx.doi.org/10.1080/09540120500456391

Espada, J. P., Morales, A., Orgiles, M., Piqueras, J. A. & Carballo, J. L. (2013). Sexual behavior under the influence of alcohol among Spanish adolescents. *Adicciones*, 25(1), 55-62.

Francoeur, R. & Noonan, R. (2004). *The continuum complete international encyclopaedia of sexuality*. New York: Continuum. Retrieved from http://www.kinseyinstitute.org/ccies/

Gubhaju, B. B. (2001). *Adolescent reproductive health in the Asian and Pacific Region*. (Asian Population Studies Series No, 156.) Bangkok: Economic and Social Commission for Asia and the Pacific.

Hutton, H. E., McCaul, M. E., Chander, G., Jenckes, M. W., Nollen, C., Sharp, V. L. & Erbelding, E. J. (2013). Alcohol use, anal sex, and other risky sexual behaviors among HIV-infected women and men. *AIDS and Behavior*, 17(5), 1694-1704. http://dx.doi.org/10.1007/s10461-012-0191-4

Jha, S. M., Chaurasia, R. & Jha, B. (2010). Knowledge about condoms among adolescents in Kathmandu Valley. *Journal of Nepal Pediatric Society*, 30, 18-22. http://dx.doi.org/10.3126/jnps.v30i1.2455

Kapiga, S. H. & Lugalla, J. L. (2002). Sexual behavior patterns and condom use in Tanzania: Results from the 1996 demographic and health survey. *AIDS Care*, 14(4), 455-469. http://dx.doi.org/10.1080/09540120208629665

Kalmuss, D., Davidson, A., Cohall, A., Laraque, D. & Cassell, C. (2003). Preventing sexual risk behaviors and pregnancy among teenagers: Linking research and programs. *Perspectives on Sexual and Reproductive Health*, 35(2), 87-93. http://dx.doi.org/10.1363/3508703

Kirby, D. B., Laris, B. A. & Rolleri, L. A. (2007). Sex and HIV education programs: Their impact on sexual behaviors of young people throughout the world. Journal of Adolescent Health, 40(3), 206-217. http://dx.doi.org/10.1016/j.jadohealth.2006.11.143

National Centre for AIDS and STD Control (NCASC). (2012). *National estimates of HIV infections in Nepal, 2012.* Kathmandu, Nepal: National Centre for AIDS and STD Control, Ministry of Health and Population.

National Centre for AIDS and STD Control (NCASC). (2014). *Nepal country progress report.* Kathmandu, Nepal: National Centre for AIDS and STD Control, Ministry of Health and Population.

Pokharel, S., Kulczyki, A. & Shakya, S. (2006). School based sex education in Western Nepal: Uncomfortable for both teachers and students. *Reproductive Health Matters*, 14, 156-161. http://dx.doi.org/10.1016/s0968-8080(06)28255-7

Puri, M. (2002). *Sexual risk behavior and risk perception of unwanted pregnancy and sexually transmitted infection among young factory workers in Nepal.* Kathmandu, Nepal: Center for Research on Environment, Health and Population Activities (CREHPA).

Puri, M. & Cleland, J. (2006). Sexual behavior and perceived risk of HIV/AIDS among young migrant factory workers in Nepal. *Journal of Adolescent Health*, 38, 237-246. http://dx.doi.org/10.1016/j.jadohealth.2004.10.001

Regmi, P. (2008). Sexual and reproductive health status among young people in Nepal. *Kathmandu University Medical Journal*. 6(2), 248-256.

Rwenge, M. (2000). Sexual risk behaviors among young people in Bamenda, Cameroon. *International Family Planning Perspectives*, 26(3), 118-123. http://dx.doi.org/10.2307/2648300

Saniel, O. P. & de los Reyes, S. J. (2010). Prevalence of risky behaviors and determinants of multiple sex partnerships among male Filipino seafarers. *International Maritime Health*, 62(4), 215-223.

Tamang, A., Nepal, B., Puri, M. & Shrestha, D. (2001). Sexual behavior and risk perception among young men in border towns of Nepal. *Asia Pacific Population Journal*, 16(2), 195-210.

Willoughby, B. J., Carroll, J. S., Nelson, L. J. & Padilla-Walker, L. M. (2014). Associations between relational sexual behavior, pornography use, and pornography acceptance among US college students. *Culture, Health & Sexuality*, 16(9), 1052-1069. http://dx.doi.org/10.1080/13691058.2014.927075

WHO. (1993). *The health of young people: A challenge and a promise.* Geneva: World Health Organization.

Xenos, P. & Kabamalan, M. (2002). *A comparative history of age-structure and social transformations among Asian youth*. Population Series no. 110. Honolulu, HI: East-West Center.

Zaba, B., Pisani, E., Slaymaker, E. & Boerma, J. T. (2004). Age at first sex: Understanding recent trends in African demographic surveys. *Sexually Transmitted Infections*, 80(2), ii28-ii35. http://dx.doi.org/10.1136/sti.2004.012674

Zambuko, O. & Mturi, A. J. (2005). Sexual risk behavior among the youth in the era of HIV/AIDS in South Africa. *Journal of Biosocial Science*, 37(5), 569-584. http://dx.doi.org/10.1017/s0021932004007084