

Prevalence and social correlates of sexual intercourse among schoolgoing adolescents in Namibia

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Abstract

Adolescent sexuality is an important public health issue, as it affects risk to contract HIV and other sexually transmitted infections. The assessment of prevalence of sexual intercourse among adolescents is of public health significance, as it may guide policies and programmes aimed at reducing the transmission of sexually transmitted infections among this age group. This cross-sectional study using standardised methodology was conducted to assess the prevalence and correlates of sexual intercourse among Namibian schoolgoing adolescents in 2004. Overall the prevalence of sexual intercourse was 33.2% (44.0% males and 24.8% females). Variables positively associated with the outcome in multivariate analysis were male gender (OR=2.39; 95% CI (1.81, 3.17)), cigarette smoking (OR=1.67; 95% CI (1.07, 2.63)), alcohol drinking (OR=1.63; 95% CI (1.18, 2.26)), and drug use (OR=9.82; 95% CI (6.28, 15.36)). Parental supervision was negatively associated with sexual intercourse in the last 12 months (OR=0.73; 95% CI (0.56, 0.94)). Efforts to control unhealthy lifestyles (smoking, alcohol and illicit drug use) may impact on adolescents' sexual activity.

Keywords: Namibia, adolescent sexuality, sexual intercourse, HIV and AIDS.

Résumé

La sexualité des adolescents est une question de santé publique importante, étant donné qu'elle leur met à risque d'infection par le VIH et d'autres infections sexuellement transmises. L'appréciation de prédominance des rapports sexuels parmi les adolescents est d'une importance considérable à la santé publique, vu qu'elle peut conduire la politique et les programmes qui ont pour but de réduire la propagation des infections sexuellement transmises chez ces jeunes. Cette étude a pour but d'évaluer la prédominance et les corrélats des rapports sexuels parmi les écoliers adolescents namibiens. Une étude transversale utilisant la méthodologie standardisée a été menée auprès de ces adolescents en 2004 en Namibie. Dans l'ensemble, la prédominance des rapports sexuels était de 33.2% (44.0% males et 24.8% femelles). Les variables positivement associées aux résultats de l'analyse multi-variée étaient du sexe masculin (OR=2.39; 95% CI (1.81, 3.17)), fumer (OR=1.67; 95% CI (1.07, 2.63)), prendre l'alcool (OR=1.63; 95% CI (1.18, 2.26)) et consommation de drogues (OR=9.82; 95% CI (6.28, 15.36)). La supervision parentale a été négativement associée aux rapports sexuels durant les derniers 12 mois (OR = 0.73; 95% CI (0.56, 0.94)). On a constaté une prédominance élevée des rapports sexuels parmi les écoliers adolescents de la Namibie. Les efforts de surveiller les mauvaises habitudes (fumer, consommation d'alcool et de drogues illicites) pourraient également avoir un impact sur les activités sexuelles des adolescents.

Mots clés: Namibie, sexualité des adolescents, rapports sexuels, VIH/SIDA.

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Introduction

Adolescent involvement in sexual activity is an important public health issue, as it affects their risk of contracting HIV and other sexually transmitted infections. Sexual activity among adolescents may also result in unplanned and unwanted pregnancies and their sequelae, and may jeopardise the adolescent's likelihood to complete education successfully. Teenage pregnancy is a problem in Namibian schools; pregnant girls are dismissed or sometimes they drop out of school voluntarily (Mufune, Kaundjua, Indongo, Nickanor & Mchombu, 2004). Adolescents' involvement in sexual activity may also be a marker of much other unhealthy behaviours, such as illicit drug use (Kuzman, Simetin & Fanelic, 2007), alcohol use, smoking (Palen, Smith, Flisher, Caldwell & Mpofu, 2006), violence and truancy (Hallfors, Vevea, Iritani, Cho, Khatapoush & Saxe, 2002).

Namibia is among the southern African countries that have been heavily affected by the HIV pandemic (Notkola, Timaeus & Siiskonen, 2004). In 2002, HIV prevalence estimates obtained from antenatal clinic surveillance sites ranged from 9% to 43% across the 21 sites (Ghys, Saidel, Savtchenko, Erasilova, Mashologu, Indongo *et al.*, 2003). The UNAIDS estimates that 19.6% of people 15 years of age and older in Namibia were HIV infected in 2005 (UNAIDS, 2006).

The Namibian government adopted a National Policy on HIV/AIDS for the Education Sector in 2003. This policy aims to provide a framework for prevention, care and support for both learners and employees in the education sector, as well as mitigation of the impact of HIV/AIDS on learners and employees (Anonymous, 2004). As the data on which our study was based were collected in 2004, just a year after the national policy was adopted, our study could also function as a baseline on which future assessments of the national policy could be based. Equally important is the usefulness of this information in the development of public health interventions aimed at reducing the prevalence of adolescent sexual intercourse.

There is a scarcity of data on the prevalence and correlates of sexual intercourse among Namibian adolescents. We therefore conducted this study using data from the 2004 Namibia Global School-Based Health Survey to estimate the prevalence and correlates of having engaged in sexual intercourse in the previous 12 months among in-school adolescents. We believe that while it is generally accepted that adolescents engage in sexual intercourse at an early age in the country, limited data have been reported to document this. Furthermore, we also theorise that understanding the factors that are associated with adolescents' sexual activity may facilitate the proper design,

implementation and evaluation of public health and other social programmes aimed at improving adolescent health.

Methods

Our study involved secondary analysis of publicly available existing data from the 2004 Namibia Global School-Based Health Survey (GSHS). The aim of the GSHS, a survey methodology developed by the World Health Organization, is to collect data from students aged 13 - 15 years. The Namibia GSHS was a school-based survey of students in grades 6 - 10. These classes were selected because they contained the majority of 13 - 15-year-old schoolgoing adolescents in Namibia. A two-stage cluster sample design was used to collect data to represent all students in grades 6 - 10 in the country. At the first stage of sampling, schools were selected with probability proportional to their reported enrolment size. In the second stage, classes in the selected schools were randomly selected and all students in selected classes were eligible to participate, irrespective of their actual ages. The school response rate was 95%, the student response rate was 86%, and thus the overall response rate of 82% (95% x 86%) was attained. Students self-completed the questionnaires within a school period session, recording their responses to each question on a computer-scanable answer sheet. A total of 6 367 students participated in the Namibia GSHS. The sample size chosen was aimed to be representative of all 13 - 15-year-old schoolgoing adolescents in Namibia.

To determine current smoking and alcohol use, participants were asked the following questions: 'During the past 30 days, on how many days did you smoke cigarettes' and 'During the past 30 days, on how many days did you have at least one drink containing alcohol?' Those who reported smoking or drinking alcohol on one or more days in the past 30 days were recorded in 'current smoking' and 'current alcohol use' categories. On lifetime history of sexual intercourse, the following question was asked: 'Have you ever had sexual intercourse?' For the main outcome of the study, the following question was asked: 'During the past 12 months, have you had sexual intercourse?' In order to assess the lifetime number of sexual partners, study participants answered the following question: 'During your life, with how many people have you had sexual intercourse?' In order to minimise reporting bias, questionnaires were self-completed and no personal identifiers (e.g. names) were required. Study participants were also informed that they were free not to answer any question with which they felt uncomfortable.

Ethical considerations

The data collection protocol was reviewed by both the Ministry of Health and Ministry of Education. Students invited to participate in the study were informed that they were free

Table 1. Socio-demographic characteristics of study participants in Namibia, 2004

Variable	All N (%)	Males N (%)	Females N (%)
Age (years)			
Total	6 283 (100)	2 931 (45.2)	3 352 (54.8)
<14	1 474 (22.2)	616 (20.6)	858 (23.6)
14	1 749 (24.7)	779 (23.1)	970 (25.9)
15	1 417 (23.1)	684 (23.1)	787 (23.3)
16 - 17	1 589 (29.9)	852 (33.1)	737 (27.3)
Current smoking			
Yes	849 (15.4)	438 (17.8)	411 (13.4)
No	229 (94.0)	129 (95.1)	97 (92.4)
Current alcohol drinking			
Yes	2 548 (43.4)	1 277 (47.6)	1 271 (40.0)
No	3 735 (56.6)	1 654 (52.3)	2 081 (60.0)
Ever used drugs			
Yes	1 003 (21.7)	484 (22.0)	519 (21.5)
No	4 508 (78.3)	2 035 (78.0)	2 473 (78.5)
Parental supervision			
Never/sometimes	4 456 (72.1)	2 148 (74.5)	2 308 (70.1)
Most of the time/always	1 827 (27.9)	783 (25.6)	30.0 (1044)
Had sexual intercourse			
No	2 283 (66.8)	831 (56.0)	1 452 (75.2)
Yes	1 133 (33.2)	654 (44.0)	479 (24.8)
Sex partners			
One sex partner	550 (16.1)	281 (18.9)	269 (13.9)
Two sex partners	180 (5.3)	113 (7.6)	67 (3.5)
Three or more sex partners	403 (11.8)	260 (17.5)	143 (7.4)

Table 2. Bivariate logistical regression analyses of factors that are associated with sexual intercourse in the past 12 months among adolescents in Namibia, 2004

Variable	Total OR (95% CI)	Males OR (95% CI)	Females OR (95% CI)
Age (years)			
<14	1.00	1.00	1.00
14	0.73 (0.57, 1.04)	0.62 (0.55, 1.38)	0.87 (0.59, 1.22)
15	1.01 (0.76, 1.35)	0.81 (0.54, 1.22)	1.17 (0.77, 1.78)
16 - 17	2.10 (1.58, 2.80)	1.30 (0.87, 1.94)	2.88 (1.88, 4.40)
Gender			
Female	1.00	-	-
Male	2.30 (1.89, 2.81)	-	-
Current smoking			
No	1.00	1.00	1.00
Yes	3.14 (2.42, 4.07)	3.85 (2.57, 5.76)	2.31 (1.57, 3.42)
Current alcohol drinking			
No	1.00	1.00	1.00
Yes	2.54 (2.08, 3.11)	3.04 (2.28, 4.05)	2.06 (1.53, 2.78)
Ever used drugs			
No	1.00	1.00	1.00
Yes	7.83 (5.68, 10.80)	6.63 (4.07, 10.79)	9.80 (6.37, 15.10)
Parental supervision			
Never/sometimes	1.00	1.00	1.00
Most of the time/always	0.74 (0.60, 0.92)	0.65 (0.48, 0.88)	0.89 (0.55, 1.00)

not to participate, and that they were also free not to answer any questions on the questionnaire. Study participants self-completed the questionnaire without any personal identifiers.

Data analysis

Data were analysed using SUDAAN software version 9.0.3 (Research Triangle Institute, Research Triangle Park, North Carolina, United States of America). We estimated the proportions of the various attributes of interest. We also used logistical regression analysis to assess the level and direction of association between the main outcome, i.e. history of sexual intercourse within the last 12 months, and a list of explanatory variables at both bivariate and multivariate levels. Current cigarette smoking was defined as having smoked at all within the past 30 days. This definition is the one preferred by the Global Tobacco Surveillance System (Warren, Jones, Peruga, Chauvin, Baptiste, Costa de Silva *et al.*, 2008). Similarly, current alcohol users were those who reported having drunk alcohol within the past 30 days. A result yielding a *p* value of <0.05 was considered statistically significant.

The choice of explanatory variables was influenced by published reports of research from other settings, in which it has been reported that alcohol, gender and smoking (Aras, Semin, Gunay, Orcin & Ozan, 2007), illicit drug use, parental supervision (Harris, Oman, Vesely, Tolma, Aspy, Rodine *et al.*, 2007), alcohol and age (Roccella, Turdo, Chairello, Testa, Bisconti, Di Filippo *et al.*, 2006) may be associated with sexual intercourse among adolescents. It has been shown that adolescents who used alcohol and/or other drugs were more likely to be sexually involved than those who did not. Siziya, Muula, Kazembe and Rudatsikira (2008) have previously reported on the clustering of unhealthy behaviours among adolescents in Zambia. Furthermore, adolescents who reported being supervised by their parents during free time have reported lower occurrence of unhealthy or antisocial behaviours (Desrichard, Roché & Bègue, 2008).

Results

Table 1 presents the characteristics of the 6 283 respondents, 2 931 (45.2%) males and 3 352 (54.8) females. Altogether 15.4% reported being current cigarette smokers, while 43.4% reported being current alcohol users. Overall, 33.1% reported having had sexual intercourse in the past 12 months, 44.0% and 24.8% among males and females, respectively. A total of 16.1% of the study participants reported having had one lifetime sex partner, while 5.3% had two sex partners, and 11.8% had three or more sex partners.

Results of the bivariate analyses stratified by sex are shown in Table 2. The following factors were positively associated with having sexual intercourse among both males and females: current smoking, current alcohol drinking, and drug use. Being female of age 16 or 17 years was positively associated with having sexual intercourse, and parental supervision was negatively associated with having sexual intercourse among males only.

We conducted multivariate logistical regression analysis in order to adjust for confounding factors that may have affected the results in bivariate analyses. The results from the multivariate analysis are shown in Table 3. The variables that were positively associated with the outcome were male gender (OR=2.39; 95% CI (1.81, 3.17)), cigarette smoking (OR=1.67; 95% CI (1.07, 2.63)), alcohol drinking (OR=1.63; 95% CI (1.18, 2.26)), and drug use (OR=9.82; 95% CI (6.28, 15.36)). Parental supervision was negatively associated with sexual intercourse in the last 12 months (OR=0.73; 95% CI (0.56, 0.94)).

Discussion

In a study of schoolgoing adolescents in Namibia using the Global School Health Survey of 2004, we found an overall prevalence of having engaged in sexual intercourse in the past 12 months of 33.1%. Boys were more likely to have had

Table 3. Multivariate analysis of factors that are associated with sexual intercourse in the last 12 months among adolescents in Namibia, 2004

Variable	Total OR (95% CI)
Age (years)	
<14	1.00
14	0.67 (0.50, 1.08)
15	1.02 (0.69, 1.50)
16 - 17	2.00 (1.33, 3.01)
Sex	
Female	1
Male	2.39 (1.81, 3.17)
Current smoking	
No	1
Yes	1.67 (1.07, 2.63)
Current alcohol drinking	
No	1.00
Yes	1.63 (1.18, 2.26)
Ever used drugs	
No	1
Yes	9.82 (6.28, 15.36)
Parental supervision	
Never/sometimes	1
Most/always	0.73 (0.56, 0.94)

sex compared with girls (43.9% versus 25.4%). Mufune and colleagues (2004) found that 73.2% ($N=727$) of 15 - 19-year-old Namibian adolescents surveyed had had sexual intercourse in the 12 months preceding the survey. Rudatsikira, Ogwel, Siziya and Muula (2007) reported an overall 14.9% 12-months prevalence of sexual intercourse among schoolgoing adolescents in the coastal region of Kenya. The Namibia estimates therefore are several times higher than what has been reported in Kenya. Anderson, Beutel and Maughan-Brown (2007) reported that in a sample of South African youth, of whom in 2005 46.6% males and 45.1% females reported ever to have had sex, about 39% were sexually active, 88.5% felt that they were either at no or small risk of getting infected by HIV; 57.6% males and 59.9% females felt they were at no risk at all. This may have been a marker of the perceived invincibility of youth, as reported previously by Crosby (1996).

There may be many reasons why boys were more likely to have engaged in sexual intercourse than girls. Boys may perceive sex as a symbol of masculinity and power domination over girls (Brown, Sorrell & Raffaelli, 2005). Boys have been reported to show their power by having sex with many virgin girls (Mufune, 2003). Fitzgerald, Stanton, Terreri, Shipena, Kahihuata, Ricardo *et al.* (1999), in a randomised trial of a UNICEF-sponsored 'My Future is My Choice' intervention emphasising abstinence, found that schoolgoing adolescents trained under the programme could still have a relationship with a girl without having sex. Adolescent boys in the control arm of the trial believed that it was permissible to beat a girlfriend who refused to have sex with her boyfriend. Young girls in Oshakati reported that saying no to sex could elicit a beating from a boy (Mufune, 2003). It is also possible that boys in this age group were having sexual intercourse with much younger girls who were too young to be included in this survey (due to age limitation). This may have to be verified. Another plausible explanation is that boys may be sharing a limited pool of girls, who as a proportion would have a lower prevalence of having engaged in sexual intercourse. However, such a situation would be likely to result in more girls reporting multiple lifetime sexual partners than boys, a situation we did not observe in this study. In fact more boys reported having more than one lifetime sexual partner than girls.

Prevalence of alcohol use, illicit drug use and smoking was generally high in both genders, although male predominance was observed. Zimba (1995) found that 50% of secondary school learners believed that alcohol facilitates communication with peers of the opposite sex. Excessive consumption of alcohol is associated with high-risk sexual behaviour in Namibia (United Nations Development Programme, 1999) and Botswana (Weiser, Leiter, Heisler, McFarland, de Korte & DeMonner, 2006). It is not

possible to delineate whether adolescents used alcohol as part of sexual activity, or whether they drunk intentionally in order to be disinhibited, or whether sex is often available where alcohol is sold (Kalichman, Simbayi, Cain & Jooste, 2007). We believe though that all of these possibilities are worth consideration.

The predominance of males in potentially unhealthy lifestyles has been described in many other settings (Chen, Jha, Stirling, Sgaier, Daid, Kaul *et al.*, 2007); Rudatsikira, Muula & Siziya, 2007; Siziya, Rudatsikira, Muula & Ntata, 2007). While we identified gender disparity in the prevalence of sexual intercourse, other authors have reported no gender difference among out-of-school adolescents in China (Wang, Li, Stanton, Kamali, Naar-King, Shah & Thomas, 2007). Ekundayo, Dodson-Stallworth, Roofe, Aban, Bachman, Kempf *et al.* (2007) however reported that in rural Jamaica, boys were likely to experience sexual debut earlier than girls. This is an interesting finding, as it raises the question as to with whom these young boys of 11 years at sexual debut were having sex. Mufune *et al.* (2004) reported that, of the Namibian schoolgoing adolescents who had sexual intercourse, 42.9% of male and 36.4% of females had it with a commercial sex partner or client.

In the case of girls however, several studies reported young girls having sexual relations with much older males (Kuate-Defo, 2004; Luke, 2005). In Namibia, intergenerational sex between older men ('sugar-daddies') and young girls has been attributed to poverty, certain cultural practices and disintegration of traditional family structures (Government of the Republic of Namibia, 2002). Many young girls in Namibia expect boyfriends to provide money and material support in exchange for sex (Mufune, 2003).

We also found that students who perceived they had adequate parental supervision in their free time were less likely to have sexual intercourse than those without supervision. Parental supervision has been documented to be protective from other unhealthy behaviours among adolescents in diverse settings (Desrichard, Roché, & Bègue, 2007; Frojd, Kaltiala-Heino & Rimpela, 2007; Harris *et al.*, 2007). Kingon and O'Sullivan (2001) have reported how the family could offer a protective function against unhealthy behaviours among adolescents.

Our study also identified that factors that have been reported to be associated with sexual intercourse among adolescents in other settings, were also associated with sexual intercourse in this Namibian cohort. These factors were: age, alcohol use, illicit drugs (Palen *et al.*, 2006) and smoking. We believe this information is important for policy makers and public health programme implementers in Namibia. Efforts to prevent or delay adolescent sexual activity may bear fruit if other factors

associated with sexual intercourse are taken into account. Also, efforts to control smoking, alcohol and illicit drug use among adolescents may impact on adolescents' sexual activity.

Sexual activity in Namibia begins at a very young age, often as low as 10 years (Cohen, 1998). Data obtained from a cross-sectional survey conducted among individuals aged 12 - 18 years, of median age 15 years, living in school-based hostels in Namibia, showed that 56% of the boys had already experienced sexual intercourse. Among those who were sexually experienced, 29% had had more than one sex partner in the preceding 6 months, and only 50% used a condom during their most recent intercourse (Stanton, Fitzgerald, Li, Shipena, Ricardo, Galbraith *et al.*, 1999). Despite these sexual realities, the provision of condoms in schools is still a contentious issue, ostensibly because shifting resources to condoms could compromise expansion of programmes to empower young people to say no to sex (Kamwi, Kenyon & Newton, 2006).

Zimba (1995) found that significantly more boys than girls, and more students from northern than from central/southern regions, thought that mistrust was communicated by condom use. The students thought that sexual intercourse made one more popular, proved sexual maturity, showed commitment to and maintained love relationships.

Limitations of the study

Our study had several limitations. Firstly, the GSHS only enrolls adolescents who are in school. Schoolgoing adolescents may not be representative of all adolescents in a country, and the health behaviours may differ between schoolgoing and non-schoolgoing adolescent groups. Also, we did not assess the impact of tribe on sexual behaviours. According to Garenne and Zwang (2006), sexual practices among ethnic groups in Namibia may vary. These authors, using data from a 2000 survey, reported that the Herero and Damara/Nama had the highest levels of premarital fertility (60% and 57% respectively), Ovambo (45%) and Lozi (26%) had intermediate levels of premarital fertility, while Kavango and San appeared to follow more traditional behaviour, with early marriage and low levels of premarital fertility (13% and 24% respectively). While we recognise these differences, which suggest that tribal origin may also have a bearing on the sexual practices of the adolescents that we studied, the GSHS data do not have tribal variables that we could assess. However, we believe that experience with sexual intercourse may differ between the adolescents based on tribal affiliation due to cultural differences. Furthermore, we are unable to determine from the survey questions whether the study participants' definition of sexual intercourse included not only heterosexual intercourse but also same-sex intercourse.

Lowray (2006) reported on the existence same-sex partnerships in Namibia. The GSHS does not collect data on same-sex partnerships.

As the questionnaire was self-completed, it is possible that some study participants may have mis-reported intentionally or inadvertently on any of the questions asked. Intentional mis-reporting was probably minimised by the fact that study participants completed the questionnaires anonymously. Moreover, the methodology of the GSHS is similar to that of the Youth Risk Behavior Survey (YRBS) conducted in the United States (Brener, Collins, Kann, Warren & Williams, 1995), and this survey methodology has been found to have high validity and reliability among American youth. Whether similar claims of reliability can be made in a non-American setting requires further study. Furthermore, another limitation is that this study was based on data collected in a cross-sectional survey. We cannot therefore ascribe causality to any of the associated factors (Rothman & Greenland, 2005).

Conclusion

We have estimated the prevalence of sexual intercourse among schoolgoing adolescents in Namibia. Our findings may provide baseline information on which to base evaluation of national HIV policies in Namibia. We suggest that efforts to control adolescent smoking and alcohol consumption may have an impact on adolescent sexual intercourse prevalence. However, as our study was based on cross-sectional data, we cannot confirm any causal association between the factors so identified and adolescent history of sexual intercourse.

Despite the limitations reported above, this study may contribute to the following: (i) setting a baseline for prevalence estimates among schoolgoing adolescents against which future studies may be compared; (ii) the identification of factors that are associated with adolescent sexual intercourse provides the opportunity to incorporate this understanding into programmes aimed at promoting adolescent sexual and overall health; and (iii) to appreciate that adolescent sexual health goals will only be attained if a multi-sectoral approach, with due consideration of alcohol and other drug use and increased parental involvement in adolescents' welfare, is implemented.

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