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Factors, Context and Correlates of First Heterosexual Sex, Sexual Coercion and Sexual Risk Behaviours among Adolescents in Botswana.

by

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Abstract

Although early sexual debut is highly prevalent in Botswana, its link to sexual risk practices has not been explored at a national level. The aim of this paper was to investigate the context and correlates of first heterosexual sex among adolescents in Botswana, and the association between age-at-first-sex; consent at first sex; experience of coercion and subsequent sexual practices. We used data derived from the 2013 Botswana AIDS Impact Survey (BAIS IV) – a fourth and latest in a number of nationally representative, population-based surveys meant to measure the socio-demographic and other effects of the HIV/AIDS epidemic in Botswana. A sample of 3796 adolescents in ages 10-24 years who had successfully completed BAIS IV individual questionnaire were selected and included for analysis. Data was analyzed using descriptive and multivariate statistical methods and results were considered statistically significant at $p < 0.05$. Mean age at first sex for the sampled adolescents was 17.9. Using binary logistic regression analysis results indicate that females, adolescents residing in cities and towns, and those who started sexual activity earlier were more likely to report to have experienced sexual coercion and having more than one sexual partners. There is need for HIV prevention programs targeting adolescents to address contextual factors and circumstances around young people's initiation into sexual intercourse, as well as the psychosocial, and cultural norms pertaining to initiation of sex.

KEYWORDS: faithfulness; age-at-first-sex; HIV/AIDS, Sexual practices, multiple sexual partnerships, partner reduction, HIV, AIDS, sub-Saharan Africa.

Introduction

Over the past thirty years there has been an observed decline in the age at first sexual intercourse globally¹⁻⁵. The decline in the age at first sexual intercourse; increased reporting of coercive first sex; concerns of adverse reproductive health outcomes such as unintended pregnancy and sexually transmitted infections (STIs), including human immunodeficiency virus (HIV) have become important issues, particularly in the context of a high HIV prevalence⁶. As a result the association between sexual coercion and negative health outcomes is well documented in the literature⁷⁻⁹. Studies have found that the odds of reporting STIs were significantly greater for women who ever experienced sexual coercion or violence compared to those who never experienced any type of sexual violence or coercion^{7, 10-12}. Significant association has also been found between sexual coercion at first sex and likelihood of having an STI; or experiencing unintended pregnancy^{2, 8, 13} or an unintended first birth^{7, 14}.

William et al.⁷ found that the odds of reporting an unintended first birth was more among women who experienced mild coercion but was even greater for women who experienced violent coercion compared to women who did not experience coercion. Further evidence has also shown strong relationship between risk of coercive sex and younger age of the woman at first intercourse and alcohol consumption before sex among young men¹⁵⁻¹⁷. Behavioral risk factors—most notably, younger age of women at first intercourse and alcohol consumption before sex by the male partner have been found to be strongly and positively related to the risk of coercive sex¹⁸. It has also been found that after controlling for demographic characteristics, young women who report coerced first intercourse were less likely to use modern contraceptives, to report unintended pregnancy and to report one or more genital tract symptoms¹⁹⁻²¹. The results of sexual and reproductive health practices and choices, positive or negative, that adolescents make are likely to be experienced during adulthood. Given the nature of Botswana's HIV/AIDS epidemic, it is important to investigate and seek to provide grounded understanding of young people's sexual experiences and how these experiences influence their sexual and reproductive health behavior. The current study assesses the association between sexual coercion and sexual reproductive health practices of young people in Botswana. Specifically, the study investigates whether early age at first sex; experiences of sexual coercion at first sex or later in life are associated with risky sexual and reproductive health practices among adolescents in Botswana.

Methods

Study area and data source

Botswana is the study area. Administratively Botswana is divided into 17 districts, 10 rural and 7 urban districts. The data source is the 2013 Botswana AIDS Impact Survey (BAIS IV), which is the fourth and latest of a series of nationally representative demographic surveys aimed at providing up to date information on the Botswana's HIV /AIDS pandemic. BAIS IV provides the latest information on the national HIV prevalence and incidence estimates among the population 18 months and above; provides indicative trends in sexual and preventive behavior among the population aged 10-64 years; and provides a comparison between HIV rate, behavior, knowledge, attitude, poverty and cultural factors that are associated with the pandemic with estimates derived from previous surveys.

BAIS-IV employed a national two stage sample survey design. The first stage was the selection of EAs as Primary Sampling Units (PSUs) selected with probability proportional to measures of size (PPS), where measures of size (MOS) were the number of households in the EA as defined by the 2011 Population and Housing Census. EAs were selected with probability proportional to size. In the second stage of sampling, the households were systematically selected from a fresh list of occupied households prepared at the beginning of the survey's fieldwork (i.e. listing of households for the selected EAs) and households were drawn systematically. Estimates for response rates showed that 83.9% of persons aged 10 to 64 answered individual questions. The data also showed that 73.4% of population 6 weeks and above participated in HIV testing. The targeted sampled population (aged 10-64 years) for BAIS IV was 9,807 and from this, 8,321 individuals were successfully interviewed yielding a response rate of 83, 9 per cent. A sample consisting of 3796 young people in ages 10-24 years who had successfully completed BAIS IV individual questionnaire were selected and included for analysis in this paper.

Dependent (outcome) variables

The dependent variables were sexual coercion and numbers of sexual partners. During the survey young people were asked if they have had sex without their consent in the last 12 months. Those who reported to have had sex without their consent were given a code of 1 and those who reported otherwise were given a code 0. For number of sexual partners the question asked was on the overall number of sexual partners young people have had sex with in the last 12 months prior to the survey. This question was coded such that if partners were $\leq 1 = 0$ and if partners were $\geq 2 = 1$ (multiple partners denoting sexual risk behaviour).

Independent variables

The main independent variable was age at first sex, and the question asked was ‘at what age did you **first** have sexual intercourse’. This variable was coded to show the age young people reported to have had first sexual intercourse. Age at first sex was categorised in to two broad age groups; 10-15 years=1 and 16-24=2. Knowledge about HIV was measured on a scale using five HIV/AIDS knowledge questions. The resultant variable was a dichotomous variable with categories ‘sufficient knowledge=1’ and “insufficient knowledge=0”. Other explanatory variables were socio demographic characteristics. Place of residence was aggregated as city/town, urban village and rural. Marital status was created as never married, ever married (currently and formerly married) and living together. Educational level achieved was measured as never having attended school and among those who attended school, whether they had primary, secondary, higher, non-formal or non-standard curriculum. For the purpose of this study, three categories of education were created as follows: those who never attended school, attended non-formal and non-standard curriculum and primary were combined together to create primary or less education. Secondary and higher educational levels remained unchanged. Religion included three categories, Christianity, no religion and other non-Christian religion (Islam, Buddhism, Hinduism, Badimo, SiKhism, African traditional religion).

Statistical analysis

We applied both bivariate and multivariable analyses to examine covariates of sexual coercion among youth. First we estimated bivariate associations between age at first, sexual cohesion and number of sexual partners and background variables. Secondly, we used logistic regression analysis to evaluate the association between independent variables with sexual coercion and number of sexual partners. The measure of association used was unadjusted (UOR) and adjusted odds (AOR) ratios and their corresponding 95% confidence intervals obtained using generalized linear models and log link. In the adjusted analysis, of sexual coercion and number of sexual partners, socio-demographic characteristics were controlled for. Results of the adjusted model were used in the discussion since they are more apt than unadjusted results. To control for cluster effects complex samples module in SPSS has been used since BAIS IV used cluster sampling technique. The data were analysed using SPSS version 25 program.

Ethical considerations¹

Consent was requested for BAIS IV data collection procedures, household, individual questionnaires; blood specimen for HIV testing. Verbal consent was sought for entering a household and the subsequent administration of the household and individual questionnaires. The interviewer introduced him/herself to the household head or other appropriate adult respondent and explains the nature of the research and its benefits to the community and the country. The interviewer only proceeded with the research undertaking once he or she is confident that the

¹ See BAIS Report, 2014.

participant has fully consented to be interviewed. As the survey included children and minors (under 18 years of age), parental or guardian consent was sought on their behalf. For those minors that qualify for the behavioral questionnaire, questions that do not affect them are skipped, as per the design of the questionnaire.

For each of the components of the consent, the interviewer signed the questionnaire to indicate that he/she read the consent statements to the participant. BAIS IV included the collection of a blood samples. In accordance with internationally agreed upon standards, such as the International Ethical Guidelines for Biomedical Research Involving Human Subjects, investigators are expected to ensure that study participants have given voluntary and informed consent to provide specimen for HIV testing. Taking a blood sample required that the participant gives a further verbal informed consent (adult and child consent respectively). The interviewers explained the nature of the biomarker collection, its potential risks to the participant and the potential benefits of such data collection for the country. Respondents were assured of the anonymity of the HIV test results. Participants were also assured utmost confidentiality in accordance with provisions made under the laws of Botswana.

Interviewers and laboratory technicians were trained to ensure privacy during the administration of the survey questionnaires and the consent to the testing component. A high level of confidentiality and anonymity was also strictly adhered to in handling the data from the survey. The testing of the blood specimens were processed at a different location from the questionnaire data. The test results and questionnaire data were matched only after the bar code was linked to personal identifiers on the questionnaire.

Results

Characteristics of respondents

A total of 3796 youth aged between 10-24 years were sampled for this analysis from the main BAIS IV data file (Table 1). Out of the total sample 51% constituted female youth while the remainder were males. A high percentage (66.8%) of youth in the sample was in ages 16-24 years. About two thirds (62%) of youth in the sample had secondary education, while for marital status less than 1% of youth reported that they were married, while the remaining 99% were either never married or in cohabiting relationships. A large proportion of youth professed Christianity as their religious affiliation (89%), while for residence over one third (38%) of the young people in the sample were residing in rural areas. About 11% of the youth reported having had sexual intercourse before the age of 15, while 15% reported having experienced sexual coercion, and 22 % reported having had two or more partners in the previous 12 months. The mean age at first sex for the sampled youth was 17.9.

Age at first sex, sexual coercion, and number of sexual partners

Table 2 indicates the bivariate associations between background variables and age at first sex, sexual coercion and number of sexual partners in the past 12 months. The results indicate that the proportion of youth who had first sex among youth aged 10-15 years was significantly high among males (12%) than females (9%). Conversely for those aged 16-24 years there was a high proportion of females (91%) than males (88%). There was no significant association between age at first sex and marital status. When considering religious affiliation a significantly high proportion of youth who professed Other non-Christian religion (32%) had first sex in ages 10-15 years, while a high proportion of those who were of Christian affiliation had first sex at ages 16-24 years. When looking at residence, there was a high proportion of youth in rural villages (13%) that had first sex at ages 10-15 years than in urban villages, cities and towns (9%). A significantly high proportion of youth who had age at first sex in ages 10-15 years had primary or less education level (33%).

Results indicate that a slightly high proportion of females (15%) experienced coercion than males (14%). Sexual coercion was also observed to be greater among youth who were never married (15%) than in other relationships groups, and also among youth who professed no religion (22%). Sexual coercion among youth was significantly high in rural villages (18%) and cities and towns (16%). When considering education level the proportion of sexually coerced youth was highest among those with primary or less education (16%). On the number of sexual partners in the past 12 months, a significantly high proportion of male (34%) youth than females (14%) reported having had multiple sex partners. The proportion of youth who reported multiple sex partners were also highest among those who reported that they were never married (26%), than among those who were ever married (6%) or cohabiting(13%). It was also highest among youth of Other non-Christian religious affiliation (37%) and youth in cities and towns (26%).

Covariates of coerced sex among youth

Table 3 presents the results of multivariable logistic regression analysis using two models. The results presented are on the association between age at first sex and sexual coercion in the past 12 months. Model 1 results show the crude odds ratios for the probability that youth experienced sexual coercion in the past 12 months prior to the survey, while model 2 introduces control variables and present adjusted odds ratios for the probability of having experienced sexual coercion. Results indicate that youth who have had their first sex below age 15 were almost 1.8 times (UOR 1.76, CI 1.13-2.76) more likely to be coerced than those who had their first sex later in life, and this relationship was statistically significant at 5% level. When controlling for background characteristics (model 2), respondents who had their first sex at the age of 15 or below, were 1.5 (AOR 1.53, CI 0.92-2.56) times more likely to be coerced than those who had their first sex after age 15 although the association was no longer statistically significant at 5% level. Females were 1.2 times more likely to be coerced compared to males, and respondents with secondary education were 1.2 times more likely to be coerced than those with primary or less education. Knowledge about HIV was not a significant covariate of sexual coercion among youth.

Covariates of multiple sexual partnerships among youth

Table 4 presents results on the association between age at first sex and number of partners in the past 12 months. The results indicate that respondents who had sex at the age of 15 or less were 1.7 times (UOR 1.68, CI 1.13-2.76) more likely to have had two or more partners in the 12 months prior to the survey compared to those who had first sex later in life. When we adjusted for socio-demographic variables, age at first sex was still significantly associated with having two or more partners in the past 12 months, with respondents who had sex at age of 15 or less 1.7 times (AOR 1.71, CI 1.03-2.86) more likely to have had two or more partners in the 12 months prior to the survey compared to those who had first sex later in life. Youth who resided in cities and towns had higher odds of having two or more partners than those residing in rural areas (AOR 1.61, CI 1.08-2.38).

Discussion

The purpose of this study was to examine the association between age at first sex, sexual coercion and sexual behavior among youth in Botswana. Age at first sex is a vital indicator of exposure to risk of sexually transmitted infections and pregnancy among young people^{3-4,13}. Evidence from the current study indicates that age at first has slightly declined from the 2001 figure of 18 years to 17.9 years in 2013. Similar findings have also been observed that many of Sub Saharan African (SSA) countries are experiencing declining age at first sex^{13,22}. The general decline in age at first sex among young people predisposes them to negative sexual and reproductive health practices such as contraction of HIV/AIDS, STIs, unintended pregnancies and the risk of coercive sexual sex¹⁹⁻²¹. For Botswana where HIV/AIDS prevalence among adolescents is relatively high (7.9%)²² there is need to come with programs that discourage early sexual debut among adolescents. This is because it has been found that when ageing BAIS IV data (i.e. tracking age group data as the group matures into the next higher age group over time) prevalence among adolescents goes up substantially from 20 years of age onwards²². Essentially, it appears that when adolescents become young adults they get infected more often; a trend that continues with further maturation. Consequently adolescents are the most important group to target with stronger prevention, to effectively pre-empt this trend.

We also found that age at first sex influences the likelihood of experiencing sexual coercion and number of sexual partners. For example, age at first sex was significantly associated with sexual coercion. This finding corroborates studies from other countries which have identified an association between early sexual debut and forced sex during adolescence^{4,7,23}. Sexual coercion is more common among female adolescents who are often more likely to have an early and forced sexual debut¹³. In West Africa it has been reported that early sex was more common among females compared to males possibly due to girls marrying earlier and / or having older sexual partners^{4,6}. In Central, East and Southern Africa, the pattern was mixed with a higher proportion of females reporting early sex in many countries^{22,24-25}. In contrast, the results of this study indicate that early sexual debut was more common among males. Adolescent sexual activity is often considered socially undesirable or unacceptable and therefore there may be possibility of reporting bias, especially among females. Young people, especially females often under-report sexual behavior, while males sometimes over-report it²⁶⁻³². In Botswana there are cultural views that endorse sexual activity among males as a sign of strength and virility³³⁻³⁶. As a result young men may over-report sexual activity to emphasize their masculinity.

Consistent with previous research, gender differences in sexual coercion were observed. We found that females were more likely to experience coercion than their male counterparts, and that they were less likely to have two or more partners than males. Sexual coercion among female adolescents and females in general has been previously associated with gender based violence and sexual harassment by males¹⁵. Given that in Botswana gender based violence is common, sexual coercion among females is an expected finding. According to the Botswana Gender-Based

Violence Indicators Study (2012), 67% of women in Botswana had experienced some form of gender violence in their lifetime including partner and non-partner violence³⁷. Meanwhile, the 2015 Botswana Youth Risk Behavioural and Biological Surveillance survey revealed one in five of sexually experienced students were forced to have sex in the preceding 12 months. There is therefore a need to condemn sexual violence against young women.

Our results also indicate a statistically significant association between age at first sex and sexual risk behavior (having two or more sexual partners). Youth who started sexual activity earlier were more likely to report having more than one sexual partner in the past twelve, even when controlling for socio-demographic variables. This finding is consistent with the developmental model posited by problem behavior theory³⁸, in the sense that a significant proportion of adolescents with early sexual behavior seem to exhibit negative sexual outcomes (multiple sex partners). Moreover other studies in SSA have also shown similar finding that adolescents who report early coital debut are more likely to also report negative sexual practices^{3-4, 9, 15, 22,39}.

Study Limitations

The major limitation of this study was that secondary data were used, thereby limiting the researcher to variables collected by the survey. Another limitation of the study is that the information collected was self-reported, which is subject to reporting errors and biases.

Conclusion

Declining age at first sex, sexual cohesion and multiple sexual partnerships are challenges facing adolescents in Botswana. Our study shows that females reported to have been coerced than males, while males start having sex at an early age than females, and that males are more likely to have two or more partners. These findings provide a number of programmatic recommendations. First, given that education is protective toward early and coerced sex and multiple sex partnerships, policies and programs encouraging education should be continued. Second, inequalities exist in sexual behaviors of male youth and female youth hence there need to have information and access to more focused education to female youth. This could be done through outreach programs (e.g., peer educators) that go to poor neighborhoods; using young people to target their peers is a strategy that often reduces barriers to information and knowledge.

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Appendix

Table 1: Sample Characteristics

Variables	Number	Percentage
Sex		
Male	1856	48.9
Female	1940	51.1
Age		
10 - 15	1262	33.2
16 - 24	2534	66.8
Education		
Primary or less	1078	28.4
Secondary	2365	62.3
Tertiary or higher	353	9.3
Marital status		
Ever married	27	0.7
Never Married/living together	3769	99.3
Religion		
Christian	3375	88.9
Other non-Christian	102	2.7
No religion	315	8.3
Residence		
Cities & Towns	1326	34.9
Urban villages	1032	27.2
Rural villages	1438	37.9
Age at first sex		
10 - 15	131	10.6
16 - 24	1109	89.4
Sexual coercion		
Coerced	183	14.8
Not coerced	1057	85.2
Number of sexual partners in past 12 months		
One	805	77.8
Two or more	230	22.2

Mean age at first sex= 17.9, N=3796.

TABLE 2; Bivariate associations between background variables and age at first sex, coercion, and number of partners in the last 12 months

Background variables	Age at first sex, n (%)		Sexual Coercion, n (%)		Number of sexual partners, n (%)	
	10 - 15	16 - 24	Not Coerced	Coerced sex	One	Two or more
Sex						
Male	62 (12.2)	446 (87.8)	437 (86.0)	71 (14.0)	283 (66.4)	143 (33.6)
Female	63 (8.9)	645 (91.1)	602 (85.0)	106 (15.0)	522 (85.7)	87 (14.3)
<i>p-value</i>	<i>P= 0.061</i>		<i>P= 0.627</i>		<i>P = 0.000</i>	
Marital status						
Ever married	1 (6.2)	15 (93.8)	14 (87.5)	2 (12.5)	16 (94.1)	1 (5.9)
Never married/living together	124 (22.2)	1076 (77.8)	1025 (84.7)	175 (15.3)	789 (73.8)	229 (26.2)
<i>p-value</i>	<i>P= 0.733</i>		<i>P = 0.413</i>		<i>P = 0.000</i>	
Religion						
Christian	94 (9.1)	941 (90.9)	894 (86.4)	141 (13.6)	692 (78.5)	190 (21.5)
Other Non-Christian	16 (32.0)	34 (68.0)	43 (86.0)	7 (14.0)	26 (63.4)	15 (36.6)
No religion	15 (11.5)	116 (88.5)	102 (77.9)	29 (22.1)	87 (77.7)	25 (22.3)
<i>p-value</i>	<i>P= 0.000</i>		<i>P= 0.034</i>		<i>P = 0.077</i>	
Place of residence						
Cities & Towns	40 (8.8)	415 (91.2)	384 (84.4)	71 (15.6)	292 (74.1)	102 (25.9)
Urban villages	28 (8.8)	289 (91.2)	290 (91.5)	27 (8.5)	208 (75.6)	67 (24.4)
Rural villages	57 (12.8)	387 (87.2)	365 (82.2)	79 (17.8)	305 (83.3)	61 (16.7)
<i>p-value</i>	<i>P = 0.840</i>		<i>P= 0.001</i>		<i>P = 0.006</i>	
Education						
Primary or less	38 (32.8)	78 (67.2)	97 (83.6)	19 (16.4)	79 (84.0)	15 (16.0))
Secondary	79 (8.9)	805 (91.1)	751 85.0)	133 (15.0)	584 (78.3)	162 (21.7)
Tertiary or higher	8 (3.7)	208 (96.3)	191 (88.4)	25 (11.6)	142 (72.8)	53 (27.2)
<i>p-value</i>	<i>P= 0.000</i>		<i>P = 0.363</i>		<i>P = 0.081</i>	

P<0.05

Table 3: Association between age at first sex and experience of sexual coercion

Respondents characteristics	Model 1 Unadjusted Odds Ratios OR (95% CI)	Model 2 Adjusted Odds Ratios OR (95% CI)
Age at first sex		
10 - 15	1.76** (1.13 – 2.76)	1.53 (0.92 – 2.56)
16 - 24	Ref	Ref
Sex		
Male		Ref
Female		1.16 (0.83 – 1.63)
Marital status		
Never married/living together		1.57 (0.35 – 7.12)
Ever married		Ref
Religion		
Christian		Ref
Other Non- Christian		0.99 (0.423 – 2.31)
No religion		1.78** (1.12 – 2.83)
Education		
Primary or less		Ref
Secondary		1.20 (0.68 – 2.12)
Tertiary or higher		0.99 (0.48 – 2.03)
Residence		
Cities & Towns		0.89 (0.61 – 1.30)
Urban villages		0.42** (0.26 – 0.69)
Rural		Ref
HIV knowledge		
Sufficient		Ref
Insufficient		1.30 (0.90 – 1.90)

**Statistically significant at 5%, Ref= reference category.

Table 4: Association between age at first sex and number of partners

Respondents characteristics	Model 1 Unadjusted Odds Ratios OR (95% CI)	Model 2 Adjusted Odds Ratios OR (95% CI)
Age at first sex		
10 - 15	1.68** (1.13 – 2.76)	1.71** (1.03 – 2.86)
16 - 24	Ref	Ref
Sex		
Male		Ref
Female		0.39** (0.29 – 0.54)
Marital status		
Never married/Living together		3.20 (0.41 – 24.96)
Ever married		Ref
Religion		
Christian		Ref
Other Non- Christian		1.96 (0.96 – 4.0)
No religion		1.01 (0.61 – 1.69)
Education		
Primary or less		Ref
Secondary		1.15 (0.61 – 2.17)
Tertiary or higher		1.31 (0.64 – 2.69)
Residence		
Cities & Towns		1.61** (1.08 – 2.38)
Urban villages		1.37 (0.90 – 2.09)
Rural		Ref
HIV knowledge		
Sufficient		Ref
Insufficient		1.08 (0.78 – 1.49)

**Statistically significant at 5%, Ref= reference category.