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## SOCIOLOGY | RESEARCH ARTICLE

# Knowledge of HIV/AIDS, attitudes towards sexual risk behaviour and perceived behavioural control among college students in Botswana

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**Abstract:** This study examines the knowledge of HIV/AIDS, attitudes towards risky sexual behaviour and perceived behavioural control among students in Botswana. Data were collected from 445 students randomly selected from the University of Botswana and Boitekanelo College. Hundred and seventy three males and 272 females participated in the study. The study established that although more than 90% of students correctly identified routes of HIV transmission, misconceptions regarding HIV/AIDS still exist. This includes the belief that people can be infected with HIV because of witchcraft and that only people who have sex with gay or homosexual partners can be infected with HIV. Majority of students were aware of various sexual risks. However, the percentage of students who indicated that “it is difficult to ask my partner to use a condom” was still relatively high (13.5%) based on the assumption that students are supposed to know the consequences of sexual risky behaviour. It was also found that male students were 3.48 times more likely to negotiate sex than their female counterparts (OR = 3.48, 95% CI: 1.09 – 11.13) and students who were 18 years and below were more likely to negotiate sex than students above 18 years of age (OR = 2.78, 95% CI: 1.42 – 18.32). Christians are four times less likely to negotiate sex compared to non-Christians (OR = 0.219, 95% CI: 0.095 – 0.506).



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### PUBLIC INTEREST STATEMENT

The theory of planned behaviour advances the proposition that people's behaviour is strongly influenced by their confidence in their ability to perform it. This study is interested in the ability of college students to discuss sexual matters and refuse or negotiate a sexual relationship and how this ability is influenced by the knowledge and attitudes towards sexual risk behaviour. Based on the data collected among students from two institutions of higher learning in Botswana, it was found that the majority of college students participating in the study had the ability to negotiate sexual relationships. Of concern, however, was the finding that a good number of students were still exposing themselves to risky sexual behaviour including the inability to negotiate pressure to have sex or for engage in sex without using condoms.

More than 80% of students were comfortable discussing HIV or sex and sexuality with their friends, boyfriends/girlfriends or partners but uncomfortable discussing the same issues with their parents.

**Subjects: Education–Social Sciences; Educational Research; Health & Development; Higher Education; Social Sciences; Sociology & Social Policy**

**Keywords: sexual behaviour; sexual risk; HIV/AIDS; college students; Botswana**

### 1. Introduction and background

Botswana is a landlocked country in Southern Africa. The country has been politically and economically stable since its independence in 1966. Like other countries in the region, HIV/AIDS is still the most critical developmental challenge. National efforts have been focusing on both short-term and long-term responses to this epidemic. Since its outbreak, studies have been conducted to determine the trends and impacts of HIV/AIDS. Among them, the national survey, Botswana AIDS Impact Survey (BAIS), is conducted every four years and provides information on the behavioural patterns of the population, HIV prevalence and incidence rates as well as strategic prevention initiatives. The first Botswana AIDS Impact Survey (BAIS I) was conducted in 2001, and BAIS II and BAIS III were conducted in 2004 and 2008, respectively. The latest survey, BAIS IV conducted in 2012, estimated a national prevalence rate of 18.5% compared to 17.6% in the 2008 BAIS III among the sector of the population aged 18 months and above.

Studies on HIV/AIDS in Botswana generally echo the main aspects included in the BAIS; namely, causes of HIV prevalence, impacts of HIV/AIDS and prevention strategies. In 2009, the National AIDS Coordinating Agency (NACA) commissioned the Second National Strategic Framework for HIV and AIDS: 2010–2016 (NSF II). Based on different studies, the NSF II suggested that “the HIV and AIDS epidemic in Botswana is generally driven through sexual transmission” (NACA, 2009, p. 11). A number of challenges have been identified in the NSF II as factors contributing to the spread of HIV, such as multiple and concurrent sexual partnerships, adolescent and intergenerational sex, alcohol and high-risk sex. How do we understand these factors in the context of Botswana? In their seminal study, Halperin and Epstein (2004) explained that Africa’s high HIV prevalence is mainly caused by concurrent sexual partnerships which have given rise to sexual networks in which a single individual may be linked to a large number of unknown sexual partners. Intergenerational sex is another contributing factor that fuels the spread of this epidemic. Nkosana (2006) examined the question of intergenerational sexual relationships in urban Botswana. Using a quantitative survey with 600 schoolgirls aged 18–22 years old, the study revealed that more than three-quarters of participants had boyfriends in their age group, while one-quarter were approached by older men or had older boyfriends. What is interesting is that this study found the existence of the practice of multiple sexual partners both in intragenerational and intergenerational sexual relationships. While girls who were in intergenerational sexual relationships had positive perceptions and attitudes towards such relationships, the majority of the girls had negative perceptions and attitudes because they associated such relationships with the danger of engaging in unprotected sex that could expose them to the risk of contracting HIV (Nkosana, 2006). Using the same data, Nkosana and Rosenthal (2007), examined the dynamics of intergenerational sexual relationships and revealed that although not all girls were passive and controlled by their older sexual partners, some clearly had little or no decision-making power. This can be seen in the fact that “their relationships with older boyfriends were characterized by coercion and manipulation” to the extent that negotiation for condom use was practically difficult (Nkosana & Rosenthal, 2007, p. 181).

Engaging in concurrent sexual partnerships and intergenerational sexual relationships is generally classified as high-risk behaviour in relation to HIV/AIDS. Studies have indicated that the majority of young people in Botswana become sexually active between the ages of 15–17 years (Fako, Kangara, & Forcheh, 2010; Heald, 2002). Fako et al. (2010, p. 117) indicated that by 23 years of age,

96.5% of the males and 94% of the females will have had penetrative sexual intercourse in an environment in which having several partners is common and where the use of condoms is infrequent.

Thus, efforts to develop public awareness and HIV-risk reduction programmes should take into account perceptions and knowledge of HIV/AIDS and attitudes towards sexually risky behaviour.

Studies on public knowledge of HIV/AIDS and attitudes towards sexual risk normally aim at providing information geared to how much people know about HIV/AIDS, factors associated with this knowledge and attitudes towards sexual risk. Despite the fact that both knowledge of HIV/AIDS and attitudes towards sexual risk are among the most important tools in the fight against HIV/AIDS, research around the world has often identified gaps in young people's knowledge of HIV transmission and high-risk behaviours and vulnerability to HIV infection (Boileau, Rashed, Sylla, & Zunzunegui, 2008; Fako et al., 2010; Heald, 2002; Mkumbo, 2013; Mojalantle, Keetile, Bainame, & Nkawana, 2014; Sharma & Sehgal, 1998). The study of Mojalantle et al. (2014) concluded that misconceptions about HIV infection and transmission continue to exist among young people in Botswana. Providing continuous HIV education and relaying relevant HIV-prevention messages is thus still crucial in the fight against HIV/AIDS in order to remove misconceptions about HIV transmission and in particular to help young people to protect themselves from infection.

Apart from knowledge of HIV/AIDS, attitudes, subjective norms and behavioural control play a crucial role in people's sexual behaviour. In the context of Africa, studies have tested the influence of attitude, subjective norms and perceived behavioural control as described in the theory of planned behaviour (TPB) on people's sexual risk behaviour in relation to HIV/AIDS (Ajzen, 1991, 2005; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 2010). According to the TPB, the intention of an individual to adopt a certain behaviour is always influenced by three factors: the individual's attitude, the influence of social factors and perceived behavioural control. These factors shape an individual's behavioural intentions and behaviours. Central to this theory is the notion of intention. In a planned behaviour, the stronger the intention of an individual to engage in a certain behaviour is, the more likely should be its performance (Ajzen, 1991, p. 181).

What is the function of perceived behavioural control in relation to behavioural intentions and actual behaviour? Ajzen defines behaviour as an individual's observable response in a given situation with respect to a given target. He argues that behaviour is a function of compatible intentions and perceptions of behavioural control in that perceived behavioural control is expected to moderate the effect of intention on behaviour; for example, a favourable intention produces the behaviour only when perceived behavioural control is strong. Ajzen's notion of the perceived behavioural control is compatible with the notion of "perceived self-efficacy" which was proposed by Albert Bandura (1977, 1982). In Bandura's view, perceived self-efficacy "is concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122). Thus, people's behaviour is strongly influenced by their confidence in their ability to perform it. In relation to behaviour change, Bandura (1982, p. 122) argues that "persistence in activities that are subjectively threatening but in fact relatively safe produces ... further enhancement of self-efficacy and corresponding reductions in defensive behaviour?" In other words, self-efficacy is the most important precondition for behavioural change. When self-efficacy is translated to perceived behavioural control in the TPB, one can argue that the stronger the perceived behavioural control, the higher the goals people set for themselves and the firmer the commitment to achieve those goals.

Within the field of social psychology, the TPB is considered one of the most effective persuasion theories. The concept underlying the theory is to improve on the predictive power of the theory of reasoned action by including perceived behavioural control. Studies have revealed that this theory has been useful and effective when applied to issues relating to attitudes, beliefs, behavioural intentions and behaviours in various fields (Corner & Armitage, 1997; Chase, Reicks, & Jones, 2003; McConnon, 2012).

Applying this theory in the context of Africa, Boileau et al. (2008) advanced its use by evaluating the utility of attitudes, beliefs and behavioural intentions in understanding the HIV/AIDS risk among young urban West Africans. In addition to the three components suggested by Ajzen in his theory (Ajzen, 1991, 2005), Boileau et al. (2008) added another component, namely interpersonal communication skills, through which they investigate how young people's interpersonal communication with peers and parents contributes to their understanding of HIV/AIDS-risk behaviour. Perceived sociocultural and religious norms and active communication with parents and peers are also important tools in responding to HIV/AIDS. Boileau et al. (2008) argue that sociocultural and religious norms form normative and attitudinal components of an individual's behavioural intentions. Although these norms are subjective, they play a crucial role in shaping people's dispositions when they respond to various situational pressures or contextual forces. If behavioural change is accepted as an effective way of responding to HIV/AIDS, such subjective norms cannot be undermined. According to Boileau et al., "to be maximally effective, interventions aimed at changing behaviour must not only address controllable and deliberate aspects of behaviour but should seek to identify social, cultural, and contextual impediments to behavioural change" ((2008), p. 204).

Communication, particularly communication with parents and peers about sex-related matters, is normally cited as an important social dimension that determines the success of HIV risk-reduction initiatives. The study conducted by Boileau et al. (2008) cited earlier, indicated that communication with parents and peers about sex-related matters is one of the predictors of sexual behaviour. Communication with peers in particular "predicted condom use and HIV/AIDS preventive behaviours" and "may lead to more positive preventive attitudes, and control over sexual behaviour" (ibid., 2008, p. 215).

As indicated earlier, according to the Second Botswana National Strategic Framework for HIV and AIDS 2010–2016 (NSF II), key drivers of the epidemic in Botswana include multiple and concurrent sexual partnerships, adolescent and intergenerational sex, alcohol and high-risk sex, stigma and discrimination, gender violence and sexual abuse (NACA, 2009). The NSF II acknowledges that behaviour change is the only long-term solution to the epidemic. This involves sexual behavioural change and behaviour change relating to stigma and discrimination. While behaviour change remains a long-term solution, studies have suggested that behavioural interventions can reduce HIV-risk behaviours (Boileau et al., 2008; Fisher & Foreit, 2002; Harrison, Newell, Imrie, & Hoddinot, 2010; Jensen, 2012; Kibombo, Neema, & Ahmed, 2007; Peltzer, 2000; Ross, Dick, & Ferguson, 2006). Among the direct behavioural risk-reduction interventions, abstinence and safer sex such as condom usage are the most common. Although such interventions have been well-studied, attempts to study the influence of HIV risk-reduction interventions on people's ability to discuss sexual matters and refuse or negotiate a sexual relationship, particularly in the context of Botswana, have been relatively neglected. Focusing on college students at tertiary educational level, this study explored and examined their knowledge of HIV/AIDS, their attitudes towards sexual risk behaviour and their perceived behavioural control. By "college students", we refer to students enrolled at tertiary institutions. It is hoped that this endeavour will not only inform policy-making, but also help governments, organisations, parents and individuals to respond to the HIV epidemic in ways that will control its spread.

## 2. Study aim and objectives

As already highlighted, the overall aim of this study was to explore and examine the knowledge and attitudes of college students at tertiary educational level in Botswana in relation to various sexual risky behaviours. This study dealt particularly with the following specific objectives:

- to examine the knowledge of HIV and AIDS transmission and prevention among college students.
- to explore the attitudes of college students towards sexual risky behaviour and sexual behavioural change.

- to identify the perceived sociocultural and religious norms of college students in relation to sexuality and behaviour change.
- to determine the quality communication on sexual matters between college students and their peers and parents.

### 3. Methodology

This study, supported with funding from the Human Resource Development Council (HRDC) in Botswana, was designed to explore and examine knowledge of HIV/AIDS, attitudes towards sexual risk behaviour and the perceived behavioural control among college students at tertiary educational institutions in relation to various HIV risk-reduction interventions.

The study followed a cross-sectional survey research design. The instrument was developed covering variables such as knowledge of HIV/AIDS transmission and prevention, attitudes towards sexual risk behaviour, perceived sociocultural and religious norms and quality communication with peers and parents. Variables such as sexual risk behaviour, demography, socio-economic and educational status and perceived behavioural control were also included. It was designed to allow an independent researcher to replicate the study. The questionnaire consisted of five sections: demographic profile, knowledge of HIV/AIDS, attitudes towards sexual risk and sexual behaviour change, perceived sociocultural and religious norms and communication with peers and parents. These aspects were covered by 78 questions in the questionnaire. Respondents were also given an opportunity to provide general comments related to the study topic and questions stated in the questionnaire.

This study was conducted between September and December 2014. It involved two selected institutions of higher learning in Botswana, namely the University of Botswana (a public institution) and Boitekanelo College (a private institution). The target population of the study was 17,540 students. At the time the study was designed, the University of Botswana had 15,440 students and Boitekanelo College had 2,100 students. Through random sampling 470 students were proportionally distributed to the two tertiary institutions according to the population size of each institution. Of 470 questionnaires distributed to respondents, 445 questionnaires were returned. The refusal rate was therefore only 5.3%.

Prior to commencing the study, ethical approval was sought through the University of Botswana Institutional Review Board UB (IRB). Following this approval a research permit application was submitted to the Ministry of Health in Botswana. Permission was granted by the Ministry of Health to conduct the study through the Research Permit number PPME 13/18/1 IX (13) on 5 August 2014. During the data collection, informed consent was sought from each participant.

There were a number of limitations related to this study. Given that it aimed at finding out students' knowledge of HIV/AIDS, their attitudes towards sexual risk behaviour and degrees of the perceived behavioural control, some of the questions in the research instrument were sensitive, requiring the study to rely on the honesty of respondents when answering these sensitive questions. The interpretation of results, therefore, was based on the assumption that respondents were indeed honest and reliable.

### 4. Study results

This section presents the study findings showing simple descriptive statistics focusing on the main features of the collected data. The presentation style adopts an approach of estimating the percentage distribution. In addition, Pearson chi-square tests were performed to determine whether there is a significance association between a number of variables and the ability to negotiate sexual relationships. Logistic regression was also used to model socio-demographic variables with respect to negotiation of sex.

#### 4.1. Demographic characteristics and distribution of population

Table 1 summarises the demographic characteristics of the respondents. The study sample included 173 (38.9%) male students and 272 (61.1%) female students. In terms of age, a total of 2.5% were less than 18 years of age, while 18.1% were 18 years old, 9.0% were 19 years old, 12.4% were 20 years, 15.5% were 21 years, 17.5% were 22 years of age and 15.1% were over 22 years old. From the total sample, 295 respondents (66.3%) indicated that they were currently studying at the University of Botswana, while 150 respondents (33.7%) were at Boitekanelo College. Respondents were enrolled in various programmes: 67.3% in degree programmes, 28.2% in diploma programmes, 1.6% in certificate programmes, while 2.3% indicated others. Respondents were also asked about their programme areas of which 32% indicated Health Sciences, 22% Social Sciences, 14% Education, 4% Engineering and 28% other areas.

**Table 1. Demographic characteristics of respondents**

Sample characteristics	N	%
<i>Gender</i>		
Male	173	38.9%
Female	272	61.1%
<i>Age</i>		
Less than 18 years	11	2.5%
18 years	125	28.1%
19 years	40	9%
20 years	55	12.4%
21 years	69	15.5%
22 years	78	17.5%
Over 22 years	67	15.1%
<i>Institution</i>		
University of Botswana	295	66.3%
Boitekanelo College	150	33.7%
<i>Study programme</i>		
Degree	299	67.3%
Diploma	125	28.2%
Certificate	7	1.6%
Others	13	2.3%
<i>Programme area</i>		
Health Sciences	139	32%
Social Sciences	96	22%
Education	61	14%
Engineering	18	4%
Others	124	28%
<i>Self-description</i>		
Interested in opposite sex	394	90.4%
Interested in both sexes	17	3.9%
Interested in same sex	7	1.6%
Unsure	18	4.1%
<i>Religious affiliation</i>		
Christianity	370	83.5%
Non-Christianity	73	16.5%



Responding to questions related to self-description, 90.4% indicated that they were interested in the opposite sex, 3.9% in both sexes, while 1.6% was interested in the same sex and 4.1% recorded that they were unsure. Where students were asked about their religious affiliations, 83.5% considered themselves Christians. This included 3.6% who reported that they were affiliated to Evangelical Churches; 20.4% to Pentecostal Churches; 4% to the Anglican Church; 7.8% to the Roman Catholic Church; 6.1% to UCCSA; 0.7% to the Dutch Reformed Church; 4.5% to ZCC; and 35.9% to other Christian Churches. 16.5% of respondents were non-Christians. This included 1.1% of respondents who were affiliated to Islam, 0.9% to other non-Christian religions, 2.2% to African Traditional Religion and 12.1% with no religious affiliation at all.

#### 4.2. Knowledge of HIV and AIDS

In order to measure knowledge of HIV and AIDS, respondents were given 10 statements and were asked to indicate if the statements were “true” or “false”, or if they “did not know”, as shown in Table 2 below. The first five statements include the following: “Only people who look sick can spread the HIV”; “People can get HIV because of witchcraft”; “A person can get infected with HIV by sharing a meal with a person who lives with HIV/AIDS”; “It is possible for a healthy looking person to have HIV”; and “Only people who have sex with gay or homosexual people get HIV/AIDS”. The table shows that the majority of respondents believed that it was “false” to think that “only people who look sick can spread the HIV” and that “people can get HIV because of witchcraft”. Interestingly, 7 (1.6%) and 17 (3.8%) respondents believed that “only people who look sick can spread the HIV” and that “people can get HIV because of witchcraft”, respectively.

In relation to the misconception that “people can get HIV because of witchcraft”, a significant number of respondents (53 or 11.9%) answered that they “don’t know” if this was true or not. Among those who believed that “only people who look sick can spread the HIV” and “people can get HIV because of witchcraft” or who did not know if these statements were valid, the majority indicated Health Sciences as their programme area. When religious affiliation was taken into account, the majority of respondents who were religiously affiliated with Pentecostal Churches and Roman Catholicism either believed that “people can get HIV because of witchcraft” or indicated that they “did not know” whether the statement “people can get HIV because of witchcraft” was valid or not.

Over 90% of respondents knew that “it is possible for a healthy looking person to have HIV”. While this is notable, it should also be stated that 28 respondents (6.3%) believed otherwise. The majority of respondents rejected the notions that “a person can get infected with HIV by sharing a meal with

**Table 2. Summary of knowledge of HIV/AIDS**

Statement	True	False	Don't know
Only people who look sick can spread the HIV	7 (1.6%)	425 (95.3%)	11 (2.5%)
People can get HIV because of witchcraft	17 (3.8%)	375 (84.1%)	53 (11.9%)
A person can get infected with HIV by sharing a meal with a person who lives with HIV/AIDS	17 (3.8%)	411 (92.2%)	18 (4%)
It is possible for a healthy looking person to have HIV	413 (92.6%)	28 (6.3%)	4 (0.9%)
Only people who have sex with gay or homosexual people get HIV/AIDS	29 (6.5%)	393 (88.1%)	23 (5.2%)
There is medication available to treat HIV that can lengthen the life of a person infected with the virus	372 (83.4%)	46 (10.3%)	21 (4.7%)
Sharing needles through the veins increases a person's risk of becoming infected with HIV	418 (93.7%)	16 (3.6%)	11 (2.5%)
People can reduce their chances of getting HIV/AIDS by having only one uninfected sex partner who has no other partners	388 (87%)	37 (8.3%)	13 (2.9%)
People on ARV's should always use condoms	406 (91%)	18 (4%)	19 (4.3%)
HIV/AIDS can be transmitted from a mother to a child at birth	425 (95.3%)	8 (1.8%)	11 (2.5%)

a person who lives with HIV/AIDS” (92.2%) and that “only people who have sex with gay or homosexual people can get HIV/AIDS” (88.1%). With regard to both notions, a significant number of respondents believed it was true that “a person can get infected with HIV by sharing a meal with a person who lives with HIV/AIDS” (35 or 7.8%) and that “only people who have sex with gay or homosexual people get HIV/AIDS” (52 or 11.7%). Compared to their male counterparts, more female respondents believed that “only people who have sex with gay or homosexual people get HIV/AIDS”.

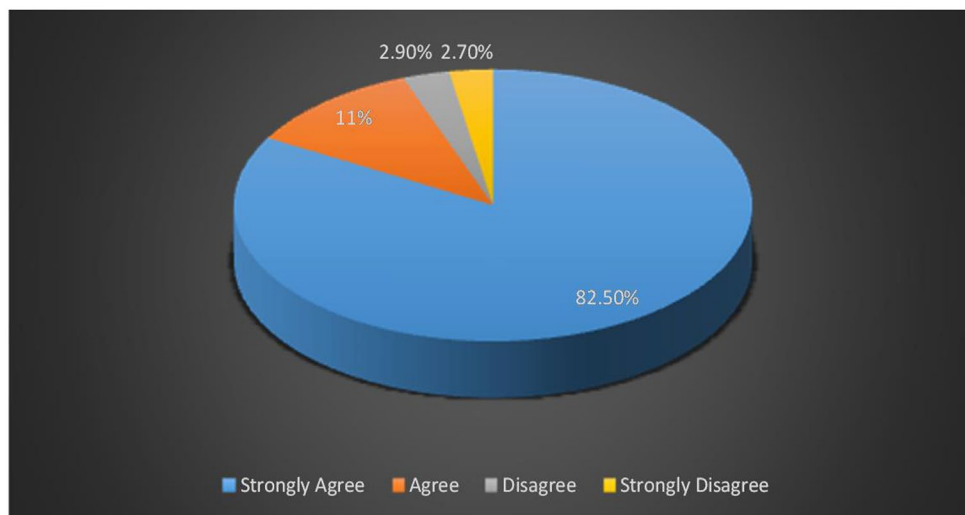
In the remaining five statements, the majority of students (over 87%) believed that “there is medication available to treat HIV that can lengthen the life of a person infected with HIV”; “sharing needles through the veins increases a person’s risk of becoming infected with HIV”; “people can reduce their chances of getting HIV/AIDS by having only one uninfected sex partner who has no other partners”; “people on ARV’s should always use condoms”; and “HIV/AIDS can be transmitted from a mother to a child at birth”. A significant number of students (67 or 15%) neither believed nor knew that “there is medication available to treat HIV that can lengthen the life of a person infected with HIV”. On the issue that “people can reduce their chances of getting HIV/AIDS by having only one uninfected sex partner who has no other partners”, more female students (59.3%) believed that the statement was true, compared to male students (40.7%).

#### 4.3. Attitudes towards sexual risk and sexual behaviour change

In relation to “attitudes towards sexual risk and sexual behaviour change”, the study listed 17 statements. These statements offered “strongly agree”, “agree”, “disagree” and “strongly disagree” as answer options. The first statement related to “saying no” when someone is pressured to have sex when he or she does not want to.

As shown in Figure 1 below, the majority of students (93.5%) agreed with the idea that they could say no if someone pressured them to have sex when they did not want to. About 5.6% of the respondents, however, indicated that they could not say no if someone pressured them to have sex against their will. With regard to attitudes towards condom usage, the majority of students (94%) either strongly agreed or agreed that they could refuse if someone wanted to have sex without a condom. Just over 4% of the respondents indicated that they couldn’t refuse in such a situation. On average, students agreed that they could get their sexual partners to use condoms even they did not want to. Similarly, over 90% of respondents believed that “they would be able to say to their boyfriends or girlfriends that they should use a condom”. The majority of students (85.2%) were in disagreement with the statement that “it is not necessary to use condoms if they trust their partners”. It should be noted, however, that a significant number of students (60 or 13.5%) agreed with the statement. On average, students strongly agreed, or agreed that it was a good idea for both women

Figure 1. “I could say ‘no’ if someone pressured me to have sex when I did not want to”.





and men always to carry condoms with them. Over 85% of respondents indicated that they strongly disagreed or disagreed with the following statements: “it is useless to use condoms with my regular partner”; “asking my partner to use condoms is not trusting him/her”; and “it is difficult to ask my partner to use condoms”. The percentage of respondents who indicated that “it is difficult to ask their partners to use condoms” was, however, relatively high (13.5%), with the percentage of female respondents higher than male respondents. Most of the students did not agree that “it is up to the man to decide whether or not a condom should be used”.

Pearson chi-square tests were performed to determine a significant association between a number of variables with attitudes towards sexual risks. We first tested the association between gender and the ability to negotiate sexual relationships. The study found that there is a significant association between gender and the ideas that “it is up to man to decide whether or not a condom should be used” and “one could say not when pressured to have sex when s/he does not want” ( $p = 0.01$  and  $p = 0.026$ , respectively). This study involved a public and a private institution. When this is taken into account, a chi-square test indicated that there is no significant association between educational institution and attitudes towards sexual risks and sexual behavioural change ( $p > 0.05$ ). It is widely acknowledged that religious belief influences people’s attitudes and behaviours. In relation to this study, it was found that there is a significant association between religious affiliation and the following attitudes towards sexual risks and sexual behaviours: “It is a good thing for men to always carry condom with them” ( $p = 0.016$ ); “Asking my partner to use condoms is not trusting him” ( $p = 0.045$ ); “It is useless to use condoms with my regular partner” ( $p = 0.029$ ); “It is not necessary to use condoms if I trust my partner” ( $p = 0.024$ ); and “I could say no if someone pressured me to have sex when I did not want to” ( $p = 0.001$ ). This finding indicates that while religious belief may influence attitudes towards sexual risks and sexual behavioural change, position to issue such as condom use depends on the teaching of individual churches or religion (Shaw & El-Bassel, 2014).

**Table 3. Demographic variables and negotiation of sex, logistic regression model**

	Negotiation of sex (agree vs. disagree) OR (95% CI)
<i>Gender</i>	
Male	3.48 (1.09 – 11.13)
Female	1.00 reference
<i>Age</i>	
≤18 years	2.78 (1.42 – 18.32)
19 – 22yrs	0.46 (0.14 – 1.46)
<22 yrs	1.00 reference
<i>Institution</i>	
University of Botswana	1.33 (0.33 – 3.25)
Boitekanelo college	1.00 reference
<i>Religious affiliation</i>	
Christians	0.219 (0.095 – 0.506)
Non-Christians	1.00 Reference
<i>Deeply religious</i>	
Agree	1.30 (0.39 – 4.37)
Disagree	1.00 reference
<i>Years of study</i>	
Year one	0.33 (0.07 – 1.59)
Year two	0.54 (0.11 – 2.63)
Year three	0.15 (0.02 – 1.57)
Year four	2.12 (0.26 – 4.70)
Above four years	1.00 reference

Note: OR = Odds ratio, CI = Confidence interval.

Using logistic regression, we modelled socio-demographic variables with respect to negotiation of sexual relationships. Table 3 below, summarises the study findings.

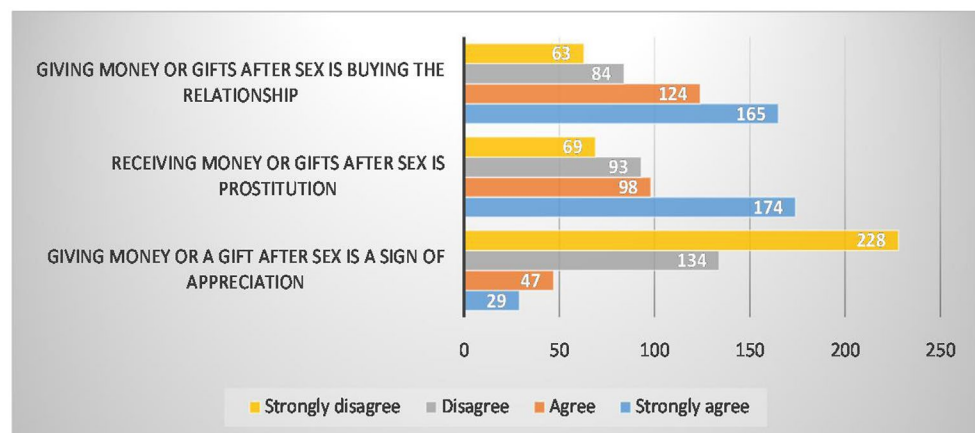
The above table reports adjusted odds ratios and their 95% confidence intervals for socio-demographic variables included in negotiation of sex models. Male students were 3.48 times more likely to negotiate sex than female students (OR = 3.48). Students who were 18 years and below were more likely to negotiate sex than those above 18 years of age (OR = 2.78). There was no significance difference between negotiating sex and the institution (OR = 1.33, 95% CI: 0.33 – 3.25) and being deeply religious (OR = 1.30, 95% CI: 0.39 – 4.37). In terms of religious affiliation, Christians were four times less likely to negotiate sex (OR = 4.6) compared to non-Christians. Year of study and negotiation of sex were found to be independent of each other.

With regard to statements related to other attitudes towards sexual risk and sexual behaviour change, over 87% of students rejected the idea that “it is respectable for a man or a woman to give money or gifts to his or her partner after sex”. Among students, 10.6% strongly agreed or agreed that “it is respectable for a man to give money or gifts to his partner after sex”, while 6.2% either strongly agreed or agreed that it was respectable for a woman to do so.

Figure 2 below summarises the attitudes of students towards the idea of giving or receiving money or gifts after sex. The majority of students did not agree that “giving money or a gift after sex is a sign of appreciation”. The percentage of female students who agreed with this statement was relatively higher (18.3%) than that of male students (16%). Although most of the students agreed that “giving money or gifts after sex is buying the relationship”, it should be noted that the percentage of those who did not agree with this statement was relatively high (32.9%). Most of the respondents were in agreement with the statement that “receiving money or gifts after sex is a form of prostitution”. The percentage of those who did not agree with this statement was also relatively high (about 38%). Among those who did not agree with this statement, the percentage of female respondents was slightly higher than that of male respondents.

Answers to the question whether respondents had ever had sexual intercourse indicated that about 72.9% had and 26.4% had never had sexual intercourse. The remaining 0.7% did not provide answers. Respondents were also asked about how many people they had had sexual intercourse with during their lifetime. Data indicated that the majority of respondents (108 or 25.5%) had had sexual intercourse with five or more people. The majority of female respondents, however, confirmed that they had only had sexual intercourse with one person in their lifetime. When asked about how many people they had had sexual intercourse with in the past three months, the majority of respondents confirmed that they had had sexual intercourse with one person.

**Figure 2. Attitudes towards giving and receiving money of gifts after sex.**



Data showed that about 41.1% had had sexual intercourse during the last 30 days, while 57.7% had not, and 0.2% provided no response. Among those who had had sexual intercourse in the last 30 days, the majority of them (54.7%) used a condom, 43.8% did not and 1.5% did not respond. Respondents were also asked whether the last time they had sex they had drunk alcohol or used drugs beforehand. The majority of respondents (87%) indicated that they had not. When respondents were asked if they had ever had sexual intercourse under the influence of alcohol or drugs in general, the majority (72.2%) stated that they had not, while 24% confirmed that they had.

#### **4.4. Perceived sociocultural and religious norms**

Data on perceptions of experiencing sex before marriage showed that the majority of respondents (54%) contended that it is an “unacceptable” practice. On the same issue, the majority of respondents (83%) disagreed with the statement that “for men, it is important to experience sex with different partners before marriage”. Similarly, the majority of respondents (83.4%) disagreed with the statement that “for women, it is important to experience sex with different partners before marriage”.

The study also asked respondents about their religious beliefs. The majority of respondents (83.6%) confirmed that religious beliefs were very important in their lives. About 57.4% described themselves as deeply religious. When decisions in sexual life are taken into account, the majority of respondents (71.5%) acknowledged that their religious beliefs influenced their decisions in their sexual lives. Similarly, 78.2% indicated that their religious beliefs did not allow sex before marriage. What is interesting is the clear mismatch between perceived socio-religious norms and sexual risky behaviour. As already mentioned, this study found that majority of students indicated that religious beliefs were very important and decisions in their sexual lives were influenced by their religious beliefs. This, however, does not correspond to the finding that over 72 % of students may have engaged in potentially sexual risky behaviour. To what extent can one explain this mismatch? In light of secularisation thesis, studies pointed out that as secularisation advances, the gap between religious doctrine and people’s behaviour, including sexual behaviour, increases (Hekma & Giami, 2014; Jones, 2013; Nynas & Yip, 2013). The problem with this premise is that it focuses more on religious doctrine while neglecting the notion of devoutness, spirituality and religiosity. One of the studies that examined the secularisation thesis in relation to sexual behaviour is the study of Farmer, Trapnell, and Meston (2009). In this study, the researchers argued that the use of religious affiliation, religious attendance or religious participation to evaluate the relationship between religion and sexual behaviour due to the ideological variation within religious affiliations. Moreover, religious affiliation and religious attendance do not reflect specific religious attitudes and motivations that are associated with religiosity, nor do they account for the external influences that determine affiliation and attendance (Farmer et al., 2009, p. 853). Through a cross-sectional study that evaluated patterns of sexual behaviour in a young adult sample, Farmer, Trapnell and Meston suggested that the use of religious dimensional subtypes including intrinsic religiosity, spirituality, fundamentalism and paranormal belief in which religious meaning is infused into daily life may provide a more useful insights in evaluating the relationship between religion and sexuality, compared to religious affiliation or attendance. This claim goes along with other study findings which indicated that infusion of religious meaning into daily life reflects religious commitment and intrinsic religiosity or religiousness is associated with less willingness to engage in casual sex and decreases the likelihood of engaging in a sexual relationship (Donahue, 1985; Rowatt & Schmitt, 2003). Based on the above contention, we would suggest that the mismatch between perceived socio-religious norms and sexual risky behaviour may have been the result of using religious affiliation as an indicator in the study. In the light of the TPB, it could be argued that while there is always discrepancy between intention and behaviour, consistency between intention and behaviour depends on many factors (Turchick, 2010). In this case, religious affiliation is one of the contributing factors towards the consistency between intention and sexual behaviour.

#### 4.5. Communication with peers and parents

Communication is also a pertinent aspect in the study. Communication includes discussions related to HIV/AIDS or sex and sexuality. Table 4 summarises student responses. It will be seen that 57% of respondents indicated that they talked about HIV/AIDS with their parents or guardians, 85.9% with their friends, 78% with their boyfriends, girlfriends or partners. When asked about discussing sex and sexuality, the majority of respondents claimed that they “feel really uncomfortable discussing about sex and sexuality with their parents/guardians”. In relation to gender, more female respondents felt embarrassed every time they talked to their parents or guardians about sex and sexuality (55.1%) compared to their male counterparts (50.6%). Interestingly, this was not the case with friends, boyfriends, girlfriends or partners as the majority of respondents indicated that they felt comfortable discussing sex and sexuality with friends (82.5%) and boyfriends, girlfriends or partners (77.8%). Overall, the majority of respondents (64.1%) did feel the need to discuss sex and sexuality with their parents, friends and sexual partners.

Students were also asked about what their parents, friends, boy/girlfriends or partners would think about them in relation to having sex or abstaining in the next three months. 51.2% of respondents believed that their boy/girlfriends or partners would think that it was acceptable for them to have sex in the next three months. In terms of gender, more males (56.9%) were of the view that their girlfriends or partners would think that it was acceptable for them to have sex in the next three months, compared to their female counterparts (47.7%). This was not the case with parents and friends. Among respondents, 75.7% believed that their mothers or female guardians would not think that it was acceptable to have sex in the next three months, and 79.4% believed the same about their fathers or male guardians. Fifty-three per cent of respondents indicated that their friends would not think it was acceptable to have sex in the next three months. The majority of both male and female students believed that their fathers or male guardians and mothers or female guardians would not regard it as acceptable for them to have sex in the next three months. This was different from their views of their friends. The majority of male students (57.2%) were of the view that their friends would think it was in order to have sex in the next three months, while the majority of female students (59.2%) believed otherwise.

The issue of abstinence from sex was also raised in the study. The majority of respondents were of the view that their mothers or female guardians (78.5%), fathers or male guardians (78.7%), boyfriends/girlfriends or partners (57.8%) and friends (66.3%) would think that it was acceptable for them to abstain from sex in the next three months. Similarly, the majority of students, regardless of religious affiliations, disagreed with the view that if one abstains from sex, s/he would either miss the excitement of sex (75.7%) or die young (90%).

**Table 4. Communication with parents and peers**

Statement	True	False	Don't know
My parents and I talked about HIV/AIDS	254 (57%)	170 (38.1%)	8 (1.80%)
I talked about HIV/AIDS with my friends	383 (85.9%)	44 (9.9%)	8 (1.8%)
My partner and I talked about HIV/AIDS	348 (78%)	60 (13.5%)	19 (4.3%)
It is uncomfortable discussing sexuality with my parents	212 (47.5%)	196 (43.9%)	26 (5.8%)
I feel really uncomfortable discussing sexuality with my friends	50 (11.2%)	368 (82.5%)	15 (3.4%)
I feel really uncomfortable discussing sexuality with my boyfriend/ girlfriend	59 (13.2%)	347 (77.8%)	20 (4.5%)
I feel embarrassed every time I talk to my father or mother about sex	231 (51.8%)	150 (33.6%)	52 (11.7%)
I do feel the need to discuss sex and sexuality with my parents, friends, boyfriend or girlfriend	286 (64.1%)	93 (20.9%)	40 (9%)

## 5. Discussion

This study explores and examines knowledge of HIV/AIDS, attitudes towards sexual risk behaviour and behavioural control among college students in Botswana. It showed that generally students had fairly good background knowledge of the facts relating to HIV/AIDS infection. However, a significant number of students still had misconceptions regarding HIV infection and transmission. In other words, misconceptions about HIV transmission still exist among young people, even at university or college level. These results explode the commonly held belief that the higher the level of education, the greater the knowledge of HIV infection and transmission will be. These misconceptions might lead to various kinds of risky sexual behaviour and thus increase vulnerability to HIV infection.

Among the misconceptions around HIV infection, this study found that the issue of witchcraft is still present in the debate. Ashforth (2002, p. 126) has pointed out that in the context of Africa, although terms such as “witch”, “witchcraft” or “witchdoctor” are generally considered derogatory and misleading, they are impossible to avoid in the discourses around HIV/AIDS. The commonly held belief among Botswana that many illnesses are caused by witchcraft, informs people’s knowledge, customs and practices about disease prevention and treatment (Maunganidze, 2012). In spite of this, discussion on the interface between witchcraft and HIV/AIDS was not conclusive. Although the majority of students regardless of their religious affiliations did not know if the two had significant causative association, they were still perceived to influence one another directly. This is surprising for students being educated in a Western system of education. Even though nowadays people are given biomedical explanations for the virus and how it spreads, many still fear the evil or powerful supernatural forces behind sickness, including suspicions of witchcraft, as they have done for generations (Ashforth, 2002; Steinberg, 2008, pp. 131–133). Since this is consistent with both African indigenous anthology and faith healing practice cosmologies we need to explore local knowledge systems and ways of thinking further in order to provide effective strategies. Chilisa (2005, p. 659) has highlighted this need claiming that mainstream research in postcolonial societies, including HIV/AIDS research in Botswana, “still ignores, marginalizes and suppresses other knowledge systems and ways of knowing”. A major strategy for developing culturally specific interventions requires indigenous grass-roots mobilisation and advocacy through the engagement of indigenous health practitioners, government, academic, religious and other cultural leaders in public education efforts. Such empowerment and related behavioural change activities must be developed with keen sensitivity to local cultures.

It is evident that the majority of students supported preventive attitudes and control over sexual behaviour, particularly the importance of protecting themselves from the risk of being infected by HIV. They could say “no” when they were pressured to have sex and they could refuse to have sex without a condom. They also believed that they could convince their sexual partners to use condoms and that it was advisable to use condoms even if they were with their regular partners. This study, however, found that a good number of students were still exposing themselves to risky sexual behaviour including the inability to negotiate when it came to being pressured to have sex or not use condoms. This finding is in line with those of previous studies (Adam & Mutungi, 2007; Cox, Arscott, & Thomas, 2004; Fako et al., 2010; Mkumbo, 2013; Mojalantle et al., 2014). In the context of Tanzania, for example, Mkumbo (2013, p. 1168) found that “sexual behaviours among students in higher education are characteristically risky, and do not significantly differ from youth in the general population”. What is clearly lacking is a comprehensive study on the reasons associated with the inability to avoid sexually risky behaviour.

Religious and cultural beliefs are normally considered to be factors influencing people’s behavioural control (Desmond, Ulmer, & Bader, 2013; Graham & Haidt, 2010; McCullough & Willoughby, 2009). In this study the majority of students described themselves as deeply religious, as their decisions were indeed influenced by religious beliefs. This finding confirms the idea that religion plays a crucial role in shaping attitudes towards sexual risk and sexual behavioural change. In other words, religion can be an avenue for public education related to positive preventive attitudes and control over sexual behaviour. As already indicated, there is no question that perceived sociocultural and religious norms greatly influence the attitudes, sexual practices and behavioural patterns and



choices of students (McCullough & Willoughby, 2009). This finding reinforces earlier observations and recommendations by Boileau et al. that “interventions aimed at changing behaviour must not only address controllable and deliberate aspects of behaviour but should seek to identify social, cultural and contextual impediments to behaviour change” (2008, p. 204). The implication is far reaching as the cultural norms, beliefs and structural conditioning associated with HIV/AIDS among students influence their choice of whether or not to use condoms when engaging in sexual intercourse.

As regards interpersonal communication, the study established that although students indicated that they were close to their parents and family members, the majority of them felt uncomfortable or embarrassed to talk about HIV/AIDS or to discuss issues related to sex and sexuality with their parents. This finding confirms similar findings in a study conducted by Kalunde (1997) in the context of Zambia, which revealed that the fact that “sex was not openly discussed with parents and other older people in society is something that has been embedded in our culture” (Kalunde, 1997, p. 94). The importance of “parent-child” communication related to sexual matters and the behavioural outcomes associated with communication cannot be underestimated. These communication patterns and dynamics highlighted in our study reflect that students are still starved of a comprehensive local framework that allows free communication without fear of stigmatisation and prejudices. The study therefore reinforces recommendations by previous studies that policy frameworks should provide adequate space for unconstrained deliberation among diverse actors with different knowledge systems for confronting HIV/AIDS (Diiorio, Pluhar, & Belcher, 2009; Fisher, 1987; Kalunde, 1997; Miller, Kotchick, Dorsey, Forehand, & Ham, 1998).

## 6. Conclusion

The results of this study show that misconceptions about HIV transmission still exist among tertiary-level students although the majority of them demonstrated high, comprehensive levels of knowledge of HIV/AIDS. The results also indicate that the majority of college students participating in the study had the ability to negotiate sexual relationships. Of concern, however, was the finding that a good number of students were still exposing themselves to risky sexual behaviour including the inability to negotiate pressure to have sex or engage in sex without using condoms. In relation to religious and cultural beliefs, the majority of students in this study were deeply religious and this influenced their decisions including sexual-related decisions. This, however, does not seem to correspond to the fact that majority of students had ever had sexual intercourse. In light of TPB, we suggest that while discrepancy between intention and behaviour is inevitable, many factors contribute to the consistency between intention and behaviour, and religious affiliation is one of them. Interpersonal communication was one of the points of reference investigated in the study. Although students stated that they had close relationships with parents and family members, they felt uncomfortable or embarrassed discussing sex and sexuality with their parents. However, they felt comfortable discussing the same issues with their friends or sexual partners. Additionally, the majority of college students believed that their sexual partners were more likely to think that it was acceptable to have sex in the next three months compared to their parents. The study suggests that there is a need to promote research activities that focus on exploring and identifying factors constraining as well as facilitating knowledge, relevant to HIV prevention, from both cultural and scientific perspectives.

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