Factors associated with multiple sexual partners among first-year students in a South African university

Introduction

Considering the pervasiveness and persistence of the HIV/AIDS epidemic in South Africa, risky sexual behaviours such as multiple sexual partnerships constitute a pertinent issue of national concern. For example, national estimates on multiple sexual partnerships reflected an escalation from 11.5% in 2002 to 18.3% in 2012 (Zuma et al., 2016). Among sexually active youth aged between 15 and 24 years, multiple sexual partnerships rate was at 22.4%, a figure that represents twice the national statistics. More perplexing was that the rate of multiple sexual partners simultaneously increased from 23.0% to 37.5% among males aged 15-24 years within a decade (Zuma et al., 2016). The risk of acquiring HIV through multiple sexual partners was estimated at 79% among people aged between 15 and 24 years in a national study (Zuma et al., 2010). Existing research demonstrated that multiple sexual partners constituted the strongest predictor of the perceived risk of HIV (Do & Meeker, 2009). Other studies further elucidated the relationship between having multiple sexual partners and the risk of contracting HIV (Hsu et al., 2015; Ojikutu et al., 2016; Shisana et al., 2016). This pattern of sexually transmitted infections (STIs) among young people is problematic because it has diverse negative effects on both the maintenance of a healthy society and public health expenditure.

Similarly, a spectrum of behavioural, biological, and cultural issues have been identified as the risk factors for multiple sexual partners among young people at country (Chialepeh & Sathiyasusuman, 2015; Hunter, 2005; Ruark et al., 2014) and regional levels (Fearon, Wiggins, Pettifor, & Hargreaves, 2015; Ojikutu et al., 2016; Uchudi, Magadi, & Mostazir, 2012). In

many Sub-Saharan African societies such as South Africa, traditional and cultural beliefs of asserting manhood through having multiple sexual partners abound (Kaufman, Shefer, Crawford, Simbayi, & Kalichman, 2008; Oyediran, Isiugo-Abanihe, Feyisetan, & Ishola, 2010). Although socio-cultural structures and constructs validate having multiple sexual partners as a proof of virile masculinity, it has serious implications for the spread of STIs in South Africa (Leclerc-Madlala, Simbayi, & Cloete, 2009). In fact, the surge in HIV infection between 2008 and 2012 in spite of the promotion of condom use was partly attributable to the prevalence of multiple sexual partners.

Some studies linked consistent condom use with having multiple sexual partners (de Visser et al., 2014; Zuma et al., 2010). Contrarily, some other studies associated inconsistent condom use (Hereen et al., 2014), and non-use of condoms (Eisenberg, Golberstein, & Whitlock, 2014; Kalichman & Simbayi, 2011; Kibira, Nansubuga, Tumwesigye, Atuyambe, & Makumbi, 2014) with the reporting of multiple sexual partners. These contradictory findings suggest that the prevention of STIs requires investigations to determine whether it is more difficult to influence the decision of having multiple sexual partners than it is to practice the use of condom among people who engage in multiple sexual partnerships (Durbin et al., 1993).

Relatively, existing research highlighted association between early sexual debut (Heywood, Patrick, Anthony, Smith, & Pitts, 2015; Shiferaw et al., 2014; Zuma et al., 2010) and young age (Exavery, Kanté, Tani, Hingora, & Phillips, 2015; Heeren et al., 2014; Ma et al., 2009; Zuma et al., 2010), with having multiple sexual partners. A national survey on HIV prevalence, incidence, and behaviour indicated that young people were more likely than adults to engage in multiple sexual relationships (Shisana et al., 2016; Zuma et al., 2016). In a similar vein, a study by Ma et al (2009), which examined early initiation of sexual activity among 1981 sexually active male students, established an interconnection between early sexual initiation, reporting multiple sexual partners and inconsistent condom use.

Alcohol consumption is another factor that considerably influences risky sexual behaviours such as multiple sexual partners. For instance, research demonstrated that the use of alcohol and other addictive substances negatively influence sexual behaviour inducing engaging in multiple sexual relationships (Carey, Senn, Walsh, Scott-Sheldon, & Carey, 2016; Mulu, Yimer, & Abera, 2014; Santelli, Brener, Lowry, Bhatt, & Zabin, 1998; Vasilenko & Lanza, 2014). Numerous studies also illuminated a significant association between being unmarried (Eisenberg et al., 2014; Hunter, 2005; Shisana et al., 2016), the place of residence or socio-cultural setting (Ojikutu et al., 2016), and multiple sexual partners. Additionally, there is a correlation between religion, religious practices, and the low probability of multiple sexual partners (Fehring, Cheever, German, & Philpot, 1998; Moore, Berkley-Patton, & Hawes, 2013). However, despite these existing researches on the factors linked with having multiple sexual partners, some studies in South Africa differed in their findings. For instance, (Heeren et al., 2014) found no association between religiosity, alcohol consumption and reporting multiple sexual partners among first-year students. These contradicting reports may suggest that factors associated with multiple sexual partners among first-year students have not been characterised in South African universities.

South Africa has a significantly younger population and there is vast information available concerning the sexual behaviour of her young people. Using National data sets, researchers have observed an alarming rise in the rates of multiple sexual partners and consequently, a decline in the rates of condom use (Shisana et al., 2014; Zuma et al., 2016) among young people. However, despite the rich amount of resources on the subject, there remains a paucity of empirical research on multiple sexual partners among first-year university students in South Africa. Although several scholars argued that sexual practices among students often assume concurrent and sequential patterns (Warren et al., 2015; Zhang, III, & Heeren, 2017), these studies do not adequately fill the existing gap in knowledge. Certainly, first-year students who

transition academically from high schools into tertiary institutions are bound to differ in terms of their socio-cultural, religious, and political backgrounds and sexual behaviours. However, there is scanty information regarding multiple sexual partnerships among first-year students. Addressing potential factors associated with having multiple sexual partners may be strategic to quell already escalated sexually transmitted infections. Therefore, to fill this gap in knowledge, this study examined the factors associated with multiple sexual partners among first-year students.

Methodology

The study was conducted among first-year students enrolled in a rural university in Eastern Cape Province in 2016. Five out of nine lecture halls where first-year students attend lectures were randomly selected. Prior arrangements were made with the lectures who assisted in the collection of data. The data collection instrument used for the study was Self-administered questionnaires, which were designed based on a review of previous studies. The students were duly informed about the purpose of the study. Afterwards, the questionnaires were distributed to students who expressed willingness to participate in the survey. Students who were repeating an academic year, but present in the same lecture halls with the newly enrolled first-year students were excluded from the study. Data were collected from 400 students from the sampled five lecture halls during lecture hours. The returned questionnaires were screened for consistency, which yielded 338 correctly filled and used for data analysis. The University's Research Ethics Committee, with reference number REC/9b/2016, approved the research protocol for the study.

Measures

The outcome variable was multiple sexual partners, measured as engaging in sexual intercourse with two or more sexual partners within the period of one month prior to the survey. The

responses were dichotomized, and those who had a single sexual partner were assigned zero, while those who had two or more sexual partners were assigned one. Information was also collected on the socio-demographic characteristics of the students, which included current age, age at sexual debut, sex, religious affiliation, alcohol use, and place of residence. Information on the respondents' condom use and their perceptions about multiple sexual partnerships was also collected. These variables were recomputed where necessary before the final data processing.

It has been hypothesized that attendance to church services and prayer are the mechanisms through which religious faith confers protective effects against external stressors such as engaging in risky health behaviours (Storch & Farber, 2002). For example, prayer provides young people with the inner strength to cope with the social pressures that lead to risky sexual activities. The attendance of religious services also enables communal validation and offers the comforting role synonymous with the gathering of believers. The respondents' level of religiosity was assessed through the questions: "How often do you attend church services?" and "Do you pray morning and night?" Each of the questions had responses ranging from Never (0) to regularly (4). These responses were summed up, and the scores lower than the mean were classified as low religiosity while values above the mean were categorised as high religiosity.

Data analysis

The analyses of data were conducted at univariate, bivariate, and multivariate levels. Frequency distribution of socio-demographic characteristics was employed at univariate level. Chi-square tests were conducted to compare existing relationships between multiple sexual partners and socio-demographic characteristics. At the multivariate level, all the socio-demographic variables were entered in logistic regression model predicting multiple sexual partners using

forward stepwise method. Then, the results were displayed in tabular as percentages, and odds ratio.

Result

Table 1 illustrates the socio-demographic characteristics of the respondents. Over two-thirds of the respondents were approximately 20 years old or older. Nearly 70% of the respondents were female while 68% resided in the rural area. About two-fifth were members of student organisation. In addition, less than a quarter did not belong to any religious organisation whereas nearly half at 48% were highly religious. Similarly, slightly over half of the respondents were non-alcohol consumers at the time of the survey. Furthermore, over 70% of the respondents were sexually experienced and less than a quarter of that population had early sexual debut at ages lower than 16 years old. Relatively, over half of the respondents, reported inconsistent condom use in the previous month. About 46% and 68% maintained that neither their culture nor religion promoted multiple sexual partnerships. Finally, one-third of the respondents have never experienced childbirth.

Table 1: Socio-demographic characteristics of the respondents

Variables	**N**	**Percentage**
Current age		
<=19	107	30.7
=>20	241	69.3
Sex of respondent		
Female	235	67.9
Male	111	31.9
Place of residence		
Rural	236	67.8
Urban	112	32.2
Membership of student organization		
No	192	55.2
Yes	156	44.8
Religious affiliation		
None	32	10.1
Methodism	92	28.9
Pentecostalism	117	36.8
Other Christians	77	24.2

Religiosity[a]		
Low Religiosity	181	52.0
High Religiosity	167	48.0
Current use of Alcohol		
No	159	54.8
Yes	131	45.2
Ever engaged in sexual Intercourse		
No	82	23.8
Yes	263	76.2
Age at sexual debut		
<16	61	22.0
16-19	185	66.8
20+	31	11.2
Consistently used a condom last month		
No	146	56.2
Yes	114	43.8
Does your culture allow multiple sexual partners?		
No	148	46.0
Yes	71	22.0
Don't know	103	32.0
Does your Religion allow multiple sexual partners?		
No		
Yes	217	67.6
Don't know	27	8.4
	77	24.0
Ever given birth		
No	205	64.1
Yes	115	35.9

[a]Religiosity is the mean score of a four-point, two-item scale, where the higher the mean represents high religiosity.

Bivariate analyses

Table 2 presents the bivariate associations between having multiple sexual partners and selected socio-demographic characteristics. A sizeable proportion of the population at 23.5% reported having coitus with multiple sexual partners within the one-month period preceding the survey. Significant associations were found between having multiple sexual partners and factors such as sex, religious affiliation, religiosity, use of alcohol, and age at sexual debut. Having multiple sexual partners was associated with cultural perception and respondent's motherhood status that is whether they had ever given birth. In comparison to females, males

were more likely to report having multiple sexual partners. The highest percentage in reporting multiple sexual partners was recorded among those who had no religious affiliation. Similarly, respondents who adhered to religiosity showed a lower likelihood in reporting multiple sexual partners. Respondents who were alcohol consumers were more likely than those who did not, to report multiple sexual partners. Those who had their first sexual debut at an age below 16 years old recorded the highest percentage in reporting multiple sexual partners. The highest percentage of respondents having multiple sexual partners was observed among those who indicated that their culture permits polygamy. Respondents who have ever given birth were more likely than those who have not, to report multiple partners. However, reporting multiple sexual partners did not show significant differences with regards to factors such as age, place of residence, condom use, and religious perception.

Table 2: Bivariate association of selected independent variables and reported multiple sexual partners

Variables	**No % (N)**	**Yes %(N)**	**X2; P value**
Current age			2.775; 0.096
<=19	82.5 (80)	17 (17.5)	
=>20	155 (73.8)	55 (26.2)	
Sex of respondent			43.724; 0.000
Female	88.1(177)	11.9(24)	
Male	54.3 (57)	45.7(48)	
Place of residence			0.139; 0.709
Rural	75.9(161)	24.1(51)	
Urban	77.9(74)	22.1(21)	
Membership of student organization			2.703; 0.100
No	80.0(140)	20.0(35)	
Yes	72.0(95)	28.0(37)	
Religious affiliation			11.671; 0.009
None	63.0(17)	37.0(10)	
Methodism	88.0(73)	12.0(10)	
Pentecostalism	76.8(76)	23.2(23)	
Other Christians	68.1(49)	31.9(23)	
Religiosity			14.754; 0.000
Low Religiosity	67.7(109)	32.3(52)	
High Religiosity	86.3(126)	13.7(20)	
Current use of Alcohol			21.218; 0.000
No	89.1(123)	10.9(15)	
Yes	65.3(77)	34.7(41)	

Age at sexual debut			28.865; 0.000
<16	46.6(27)	53.4(31)	
16-19	80.7(142)	19.3(34)	
20+	86.2(25)	13.8(4)	
Consistently used a condom last month			2.725; 0.099
No	68.1(96)	31.9(45)	
Yes	77.6(83)	22.4(24)	
Does your culture allow multiple sexual partners?			10.725; 0.005
No	85.6(113)	14.4(19)	
Yes	66.7(46)	33.3(23)	
Don't know	72.5(66)	27.5(25)	
Does your Religion allow multiple sexual partners?			5.076; 0.079
No	81.4(158)	18.6(36)	
Yes	68.0(17)	32.0(8)	
Don't know	70.4(50)	29.6(21)	
Ever given birth			6.334; 0.012
No	81.7(156)	18.3(35)	
Yes	68.9(73)	31.1(33)	

Multivariate analyses

Table 3 presents odds ratio of parsimonious logistic regression of having multiple sexual partners by the explanatory variables. Firstly, males were at least seven times more likely than females to engage in multiple sexual activities. Secondly, respondents who were members of any organisation on campus were more likely than those who did not identify with any structure to report multiple sexual partners. Similarly, strict adherence to religious faith lowered the probability of engaging with multiple sexual partners. Alcohol consumers were more likely than non- consumers to have had multiple sexual partners. Respondents who had their sexual debut before the age of 16 years old were more likely than those who did between 16 and 19 years old to have had multiple sexual partners. Those who were not sure if their culture permits having multiple sexual partners were more likely than those who stated no to report engaging in multiple sexual activities.

Table 3: Odds ratio from logistic regression analyses examining association between selected socio-demographic characteristics and having multiple sexual partners

Variables	OR	95% CI	P value
Sex of respondent			0.000
Female (ref)	1		
Male	7.4	2.9 – 18.7	
Membership of organization on campus			0.011
No (ref)	1		
Yes	3.4	1.3 – 8.7	
Religiosity			0.048
Low Religiosity (ref)	1		
High Religiosity	0.4	0.1 – 0.9	
Current use of Alcohol			0.017
No (ref)	1		
Yes	2.9	1.2 – 7.1	
Age at sexual debut			
<16	3.5	1.3- 9.6	0.014
16-19 (ref)	1		
20+	0.9	0.1 – 5.1	0.972
Does your culture allow multiple sexual partners?			
No (ref)	1		
Yes	1.3	0.4 – 4.2	0.668
Don't know	3.4	1.2 – 9.7	0.020

p< 0.05 indicates statistical significance

Discussion

This study examined multiple sexual partnerships among first-year students in a rural South African university. A substantive proportion of the students were sexually experienced, had early sexual debuts as teenagers and over one-third of them had given birth. This sample of first-year students may potentially be at a high risk of contracting STIs because of the ubiquitous nature of the HIV epidemic in South Africa. In line with previous studies, this study finds that males more likely than females to report multiple sexual partners (Carey et al., 2016; Santelli et al., 1998). This difference could be attributed to socio-cultural gender differences regarding males' rational perception rather than female emotional view on sexual relationships. For example, the affirmation of manhood through having multiple sexual partners is a socio-cultural norm, which is acceptable to men or favours men rather than women. Furthermore, considering the fact that the sample population comprises of young people, and the assumed

propensity of males for adventure, they would be more open to experimenting with multiple sexual partners than the females (Vasilenko & Lanza, 2014).

Our finding of an association between being a member of any university organisation, and having multiple sexual partners aptly depicts the complex interplay of social organization, personality, and behaviour factors within the reference group. This suggests that sexual behaviours, choices, and relationships inspired by social caprices may take concurrent and sequential patterns within students' organizations. Arguably, this manner of sexual networking bears with it the inextricable risk of contracting and spreading STIs.

Contrary to other studies conducted among first-year students (Heeren et al., 2014), this study asserts that high conformity to religiosity reduced the odds of reporting multiple sexual partners. The discrepancies between this study and earlier research hinges on the differences in religiosity measures. In this study, variables that indicates ethical obedience among religious groups were utilized rather than generalized presumptions of religiosity. Therefore, the results suggest that students who attend religious services and engage in prayers incorporated their religiousness into their daily lives. Religiosity imbues its adherents with a distinctive burst of strength and sense of resistance towards unaccepted sexual activities such as multiple sexual practices. The protective effects of religiosity from engaging in risky sexual behaviours among students has been replicated in other studies (Moore et al., 2013; Storch & Farber, 2002).

In agreement with the findings of previous studies (Moore et al., 2013; Oyediran et al., 2010; Santelli et al., 1998), our result showed that the use of alcohol increased the probability of having multiple sexual partners. This is because the link between alcohol use and multiple sexual partners is explainable using the evidence of dose-response relationship and biological plausibility. Evidently, through its characteristic effect on the central nervous system, alcohol creates a euphoric state that makes risky sexual activity more acceptable and permissible.

Consequently, sexual activity under the influence of alcohol may be unprotected. Research shows that the use alcohol among university students is not only pervasive, but is in enormous proportions and therefore constitutes a demographic concern in South Africa (Osuafor, Maputle, & Ayiga, 2016).

Condom use was not associated with multiple sexual partners. This finding contradicts previous reports on consistent condom use and multiple sexual partners (Hsu et al., 2015). This is rather perplexing because condoms are distributed freely and are easily accessible in South African universities. The results of this study concerning low condom use and reporting of multiple sexual partners among first-year students corresponds with the findings made by Heeren et al., (2014) in another rural university in South Africa. While it is unclear how sexual communication on condom use and the efficacy thereof is disseminated among first-year students, we strongly believe that there is a gap of knowledge in that regard within the sampled population. Hence, this study illuminates the pertinence of fiercely integrating the promotion of condom use into orientation programmes designed for first-year students in South African universities.

In a similar vein, the results of this research demonstrated that early age at first sexual debut has an inverse relationship with having multiple sexual partner, and concurs with several other studies conducted in South Africa (Heeren et al., 2014; Zuma et al., 2010), and China (Ma et al., 2009) respectively. This finding suggests a high risk of contracting STIs within the reference group because they do not adhere to responsible sexual behaviour such as the use of condoms. Although these students look perfectly healthy, considering their engagement in sexual activities at an early age, it is uncertain whether they know their HIV status. It is not clear whether the inability to make a decisive choice of sexual partners is the mechanism through which early sexual initiation promotes multiple sexual partnerships. However, this

study reiterates the importance of, and firmly recommends continuous safe sex education for university students, specifically, the first-year entrants.

The ignorance gathered from the findings pertaining some cultural perceptions on the issue of multiple sexual partners affirms that this risky sexual behaviour can no longer in parts be attributed to cultural norm. It further suggests a decline in humanity and a general degeneration in moral values and norms. This reference group pose a great risk to the student community as they have limited knowledge on positive cultural values regarding sexual practices. This finding suggests that risky sexual behaviour in the study population is not a reflection of cultural norms but rather of behavioural idiosyncrasies.

Caution should be applied in interpreting the findings of the present study. This caveat is informed by the fact this is a cross-sectional study and therefore involves a short duration to assert causality. Furthermore, it is based on self-report which may invariably differ from the actual behaviour (Vasilenko & Lanza, 2014). In addition, we used two-items to assess religiosity; nonetheless, we did not examine all possible explanatory variables for risky sexual behaviour associated with multiple sexual partnerships. For example, self-efficacy, sexual communication, committing of abortions and the use of drugs, and finally, history of sexual abuse are important factors that may be examined in relation to multiple sexual partnerships. Therefore, future research prospects presented by the study would include examining the nature of partnership (concurrent or sequential), antiretroviral treatment (ART), and condom use and multiple sexual partnership in a longitudinal design.

Conclusion

This study has several strengths because it was conducted among young people who transitioned from secondary school to the university environment. It demonstrated the pervasiveness of multiple sexual partnerships among first-year students. Therefore, it

underscores the necessity for the teaching of sexual communication skills and the formulation of strategies to impact on sexual norms among student organizations. Additionally, male students, alcohol users, and those who are ignorant of cultural tenets on multiple sexual partnership are evidently at higher risk of STIs due to their involvement with multiple sexual partners. Therefore, the findings of this study are strategic because they indisputably present a direction for an integrative STIs prevention strategy specifically targeting this sub population. Stakeholders in universities who aspire to reduce the risk of STIs among young students who are the future of the nation should revisit the messages disseminated during the orientation of first-year students on risky health-related behaviours. Such reappraisal and redesigning of orientation lectures and seminars should prioritise the encouragement of good personal values, responsible use of alcohol, desistance from drug use and a strong emphasis on the importance of condom use and healthy sexual choices and behaviours.

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