

ORIGINAL RESEARCH ARTICLE

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

DOI: 10.29063/ajrh2021/v25i5.7

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Abstract

University students are at greatest risk of contracting sexually transmitted diseases and HIV, due to multiple sex partners. However, first-year students are arguably, the most susceptible to sexually transmitted infections and HIV. The study examined the factors associated with multiple sexual partners among 348 first-year students aged 17 to 24 years old in a rural university in 2016. Data were collected on the demographic characteristics and sexual behaviours of the respondents in the one-month preceding the survey. Data were analysed using descriptive statistics and binary logistic regression. The results revealed that 23.5% of the respondents had multiple sexual partners in the last 30 days. The binary logistic regression model showed that male [OR=7.4, 95% CI: 2.9-18.7]; being a member of students' organisational structures [OR=3.4, 95% CI: 1.3-8.7] and younger age at sexual debut [OR=3.5, 95% CI: 1.3-9.6] were positively associated with multiple sexual partners. Furthermore, significant associations were found between multiple sexual partners, alcohol consumption [OR=2.9, 95% CI: 1.2-7.1], and being uncertain about their cultural perceptions [OR=3.4, 95% CI: 1.2-9.7] on multiple sexual partners. However, high religiosity [OR=0.4, 95% CI: 0.1-0.9] was negatively associated with multiple sexual partners. Given that we found that a significant number of students were engaged in risky sexual behaviour, innovative behavioural change is expected by emphasising sexual fidelity, good values and responsible consumption alcohol to first year students as part of orientation package. Promotion of condom use should be intensified to protect first year students. Finally, since religiosity is an important practice in the daily life of the study population, integrating the religiosity components into sexual risk-prevention interventions could prove beneficial. (*Afr J Reprod Health* 2021; 25[5]: 69-78).

Keywords: Multiple sexual partners, STIs, HIV, university, students, condom use

Résumé

Les étudiants universitaires sont les plus à risque de contracter des maladies sexuellement transmissibles et le VIH, en raison de partenaires sexuels multiples. Cependant, les étudiants de première année sont sans doute les plus sensibles aux infections sexuellement transmissibles et au VIH. L'étude a examiné les facteurs associés aux partenaires sexuels multiples chez 348 étudiants de première année âgés de 17 à 24 ans dans une université rurale en 2016. Des données ont été recueillies sur les caractéristiques démographiques et les comportements sexuels des répondants au cours du mois précédant l'enquête. Les données ont été analysées à l'aide de statistiques descriptives et d'une régression logistique binaire. Les résultats ont révélé que 23,5% des personnes interrogées avaient eu plusieurs partenaires sexuels au cours des 30 derniers jours. Le modèle de régression logistique binaire a montré que les hommes [OR=7,4, IC à 95 % : 2,9-18,7] ; être membre des structures organisationnelles des étudiants [OR=3,4, IC à 95 % : 1,3-8,7] et un âge plus jeune au début des relations sexuelles [OR=3,5, IC à 95 % : 1,3-9,6] étaient positivement associés à plusieurs partenaires sexuels. De plus, des associations significatives ont été trouvées entre les partenaires sexuels multiples, la consommation d'alcool [OR=2,9, IC à 95 % : 1,2-7,1] et l'incertitude quant à leurs perceptions culturelles [OR=3,4, IC à 95 % : 1,2-9,7] sur les relations sexuelles multiples les partenaires. Cependant, une religiosité élevée [OR=0,4, IC à 95 % : 0,1-0,9] était négativement associée à des partenaires sexuels multiples. Étant donné que nous avons constaté qu'un nombre important d'étudiants avaient des comportements sexuels à risque, un changement de comportement innovant est attendu en mettant l'accent sur la fidélité sexuelle, les bonnes valeurs et la consommation responsable d'alcool chez les étudiants de première année dans le cadre du programme d'orientation. La promotion de l'utilisation du préservatif doit être intensifiée pour protéger les étudiants de première année. Enfin, étant donné que la religiosité est une pratique importante dans la vie quotidienne de la population étudiée, l'intégration des composantes de la religiosité dans les interventions de prévention des risques sexuels pourrait s'avérer bénéfique. (*Afr J Reprod Health* 2021; 25[5]: 69-78).

Mots-clés: Partenaires sexuels multiples, IST, VIH, Université, étudiants, utilisation du préservatif

Introduction

In 2020, about 37.6 million people across the globe were living with HIV of which 35.9 million were adults¹. In addition, newly infected with HIV was estimated to 1.5 million people in 2020. Collectively about 20.6 million people were living with HIV and new infections were approximately 0.6 million in 2020 for Eastern and Southern Africa¹. Progress toward UNAIDS's 90-90-90 to end AIDS epidemic revealed that none of the three targets was met by 2020². This is a concern despite advances in global health, HIV remains a disease that has no cure. 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 2012³. 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 decade³. The risk of acquiring HIV through multiple sexual partners was estimated at 79% among people ages between 15 and 24 years in a national study⁴. Existing research demonstrated that multiple sexual partners constituted the strongest predictor of the perceived risk of HIV⁵. Other studies further elucidated the relationship between having multiple sexual partners and the risk of contracting HIV⁶⁻⁸. 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 country⁹⁻¹¹ and regional levels^{7,12,13}. In many Sub-Saharan African societies such as South Africa, traditional and cultural beliefs of asserting manhood through having multiple sexual partners abound^{14,15}. Although socio-cultural

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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 Africa¹⁶. The surge in HIV infection between 2010 and 2019 among adults in spite of the promotion of condom use may partly be attributable to the prevalence of multiple sexual partners¹⁷.

Some studies linked consistent condom use with having multiple sexual partners^{4,18}. Contrarily, some other studies associated inconsistent condom use²³, and non-use of condoms¹⁹⁻²¹ with the reporting of multiple sexual partners. These contradictory findings suggest that the prevention of STIs requires examining whether decision of having multiple sexual partners is more difficult than to practice the use of condom among people who engage in multiple sexual partnerships²². Relatively, existing research highlighted association between early sexual debut^{4,23,24} and young age^{4,25-27}, 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^{3,8}. In a similar vein, a study by²⁴, 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 by inducing engaging in multiple sexual relationships²⁸⁻³¹. Numerous studies also illuminated a significant association between being unmarried^{8,10,19}, the place of residence or socio-cultural setting⁷, and multiple sexual partners. Additionally, there is a correlation between religion, religious practices, and the low probability of multiple sexual partners^{32,33}. However, despite these empirical verdicts on the factors linked with having multiple sexual partners, some studies in South Africa differed in their findings. For instance²⁶, 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^{3,34} among young people. However, despite the rich information 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^{35,36}, 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, political backgrounds and sexual behaviours. Addressing potential factors associated with having multiple sexual partners may be strategic to quell already escalated sexually transmitted infections including HIV in South African universities. Therefore, to fill this gap in knowledge, this study examined the factors associated with multiple sexual partners among first-year students.

Methods

The study was conducted in the first semester among first-year students who 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. Each of the selected lecture halls had 50 to 100 seating capacity. Prior arrangements were made with the lecturers who assisted in the collection of data. Self-administered questionnaires were designed based on a review of previous studies to improve validity and liability of the questionnaire. The students were duly informed about the purpose of the study. Afterwards, the questionnaires were distributed to students who expressed willingness to participate in

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the survey. A total of 400 questionnaires were distributed to the students present in the lecture halls. Data were collected once from each of the selected five lecture halls during lecture hours. The aim was to allow all the eligible students to participate without coercion. Students who were repeating an academic year, but present in the same lecture halls with the 2016 first-year students were excluded from the study. All the distributed questionnaires were returned and further scrutinized for consistency. A total of 52 returned questionnaires were discarded because of conflicting responses. The 348 correctly filled questionnaires were 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 behaviours³⁷. 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. Data management and statistical analyses were performed using IBM Statistical Package for the Social Sciences version 25. Then the results were displayed as odds ratio and confidence intervals.

Results

Table 1 illustrates the socio-demographic characteristics of the respondents. Over two-thirds of the respondents were 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.

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Table 1: Socio-demographic characteristics of the respondents

Variables	N	Percentage
Current age		
<=19	107	30.7
=>20	241	69.3
Sex of respondent ^b		
Female	235	67.9
Male	111	31.1
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 ^b		
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 ^b		
No	159	54.8
Yes	131	45.2
Ever engaged in sexual Intercourse ^b		
No	82	23.8
Yes	263	76.2
Age at sexual debut ^b		
<16	61	22.0
16-19	185	66.8
20+	31	11.2
Consistently used a condom last month ^b		
No	146	56.2
Yes	114	43.8
Does your culture allow multiple sexual partners?^b		
No	148	46.0
Yes	71	22.0
Don't know	103	32.0
Does your Religion allow multiple sexual partners?^b		
No	217	67.6
Yes	27	8.4
Don't know	77	24.0
Ever given birth ^b		
No	205	64.1
Yes	115	35.9
Total	348	100

^aReligiosity is the mean score of a four-point, two-item scale, where the higher the mean represents high religiosity.

^bFigures may not add up to 348 due to missing values



Figure 1: Prevalence of multiple sexual partnerships

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

Variables	No % (N)	Yes % (N)	X ² ; p-value
Current age			2.775; 0.096
<=19	82.5 (80)	17.5 (17)	
=>20	73.8 (155)	26.2 (55)	
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)	

Prevalence of multiple sexual partners

Figure 1 presents the prevalence of multiple sexual partnerships. Overall, a sizeable proportion 23.5% of the first year-students reported having coitus with multiple sexual partners within the one-month period preceding the survey.

Bivariate analyses

Table 2 presents the bivariate associations between having multiple sexual partners and selected socio-demographic characteristics. 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 as well as whether the respondent had given birth. In comparison to females, males had higher percentage to report having multiple sexual partners. The highest percentage in reporting multiple sexual partners was recorded among those who had no religious affiliation. A higher percentage of respondents' low religiosity (32.6%) reported multiple partners in comparison to 13.7% with higher religiosity, $p < 0.000$). Respondents who were alcohol consumers had a higher percentage (34.7%) to report multiple partners compared to those who did not consume alcohol (10.9%). Those respondents who had their first sexual debut at an age below 16 years recorded the highest percentage in reporting multiple sexual partners. The highest percentage of respondents having multiple sexual partners was among those who indicated that their culture permits polygamy. Respondents who have ever given birth reported having had multiple partners one month preceding the survey. However, the following factors: age, place of residence, consistent condom use and religious perception were not significantly associated with multiple sexual partners.

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

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

Variables	OR	95% CI
Sex of respondent		
Female (ref)	1.0	
Male	7.4**	2.9 – 18.7
Membership of organization on campus		
No (ref)	1.0	
Yes	3.4*	1.3 – 8.7
Religiosity		
Low Religiosity (ref)	1.0	
High Religiosity	0.4*	0.1 – 0.9
Current use of Alcohol		
No (ref)	1.0	
Yes	2.9*	1.2 – 7.1
Age at sexual debut		
<16	3.5*	1.3- 9.6
16-19 (ref)	1.0	
20+	0.9	0.1 – 5.1
Does your culture allow multiple sexual partners?		
No (ref)	1.0	
Yes	1.3	0.4 – 4.2
Don't know	3.4*	1.2 – 9.7

* $p < 0.05$ and ** $p < 0.01$ indicate levels of statistical significance, 1.0 is Reference category, OR for Odd Ratio, CI for Confidence interval

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.

Discussion

This study examined factors influencing 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^{28,30}. 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 females³¹.

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 students²⁶, 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

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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^{33,37}.

In agreement with the findings of previous studies^{15,30,33}, 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 of alcohol among university students is not only pervasive, but is in enormous proportions and therefore constitutes a demographic concern in South Africa³⁸.

Condom use was not associated with multiple sexual partners. This finding contradicts previous reports on consistent condom use and multiple sexual partners⁶. 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 by²⁶ in another rural university in South Africa. While it is unclear how sexual communication on condom use and the efficacy therefore 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 integrating the promotion of condom use into orientation programmes designed for first-year students in South African universities.

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^{4,26}, and China²⁷ respectively. This finding suggests a high risk of contracting STIs within the reference group because they might fail

to use condom during their first sexual debut. 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 study findings that 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 habits.

Limitations

Caution should be applied in interpreting the findings of the present study. This caveat is informed by the cross-sectional nature of the study which involves a short duration to assert causality. Furthermore, it is based on self-report which may invariably differ from the actual behaviour³¹. 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 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

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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 students 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.

Acknowledgements

We express our sincere gratitude to all the students who willingly participated in the survey. We extend our appreciation to the lecturers who assisted us in the process of data collection and finally to Susan Okpala for editing the manuscript.

Contribution of authors

GN conceptualized, designed, collected data, analysed and interpreted the result. GN approved the submission of the manuscript. EC were involved in analyses, interpretation of the findings and critical revision of the final draft of manuscript. EC approved the submission of the manuscript.

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