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# Sexual attitudes and behaviour of university students at a rural South African University: Results of a Pilot Survey

**G Anita Heeren**[1], **John B Jemmott III**[2], **Andrew Mandeya**[3], and **Joanne C Tyler**[4]

[1]Senior Research Associate, Center for Health Behavior and Communication Research Department of Psychiatry Perelman School of Medicine University of Pennsylvania 3535 Market Street, Suite 520 Philadelphia, PA 19104-3309

[2]The Kenneth B. Clark Professor of Communication; Annenberg School for Communication; Professor of Communication in Psychiatry, Director, Center for Health Behavior and Communication Research, Department of Psychiatry Perelman School of Medicine University of Pennsylvania 3535, Market Street, Suite 520, Philadelphia, PA 19104-3309

[3]Department of Statistics and Biostatistics, University of Fort Hare, Private Bag X1314, Alice 5700, South Africa

[4]Proefessor and Head of the Department of Statistics and Biostatistics, University of Fort Hare, Private Bag X1314, Alice 5700, South Africa

## Abstract

A cross sectional qualitative and quantitative pilot survey, using self administered questionnaire and focus group discussions, was conducted to assess the need for, and feasibility of, a health promotion programme for university students at a South African University. We examined the gender and cultural effects on sexual attitudes and behaviour, as well as condom use.

A total of 73 students, age's between 18 and 30 years, participated in the pilot survey. The results suggest that females compared to the males are more likely to abstain until they find a partner with whom they intend to settle. There was a strong belief that unprotected sex can lead to pregnancy and STIs. Overall participants were not sure if condom use had any negative effects, although female respondents felt that condoms affect the pleasure of sexual intercourse.

The results suggest that there is a clear need for health promotion programmes aimed at young adults, who attend university. The programme would need to aim at improving general health knowledge, targeting health promotion and sexual risk behaviour among university students. Such a programme would have to consider gender, socio-economic circumstances as well as national and cultural background of the target population.

### Keywords

South Africa; university students; health promotion; HIV/AIDS intervention; risk behaviour; condom use; abstinence; survey

## Introduction

More than one third of the people living with HIV globally and over half of the people newly infected in 2010 were under the age of 25 (UNAIDS 2010). University students

Corresponding author: G Anita Heeren; aheeren@asc.upenn.edu.

generally represent the most capable and promising members in each generation and form a nation's future leadership in all sectors (Lule & Gruer, 1991). Accordingly, reducing the number of university students who contract HIV is critically important if countries in Sub-Saharan Africa are going to have any chance of coping with the devastating ramifications of a generalized HIV epidemic on their human resource infrastructure and, therefore, their economies. HIV/AIDS is having an especially devastating impact on young people of university age (Basen-Engquist, K., 1994; Wadula P., 2004; Matthew AP., 2007). In South Africa, the prevalence of HIV in the 20–24 year old age group was 8% for men and 17% for women in 2002; while for the 25 – 29 year old age group the prevalence was 22% for men and 32% for women (Rehle TM, et al. 2010).

Most studies testing HIV sexual risk-reduction interventions specific to university students have been conducted in the developed world and less than 20% in Sub-Saharan African countries where HIV is a generalized epidemic (Pub-med 2012). In a widespread HIV epidemic, curbing sexual transmission of HIV requires behavioral interventions to reach all populations that engage in risk behavior. Sub-Saharan African countries, including South Africa, have a generalized HIV epidemic and the highest rates of HIV/AIDS in the world (UNAIDS 2010); Dorrington R., 2002; Bateman-Engquist K., 1994).

University students, like their peers of similar age, are at high risk of contracting HIV/AIDS (Baker S., 2003; Chernoff RA 2005; Peltzer K., 2010). Increased income or educational attainment does not eliminate the risk of HIV infection among South Africans. Research has shown that there was no relation between income and HIV prevalence among Black South Africans. In addition, among Black South Africans 15 years of age and older, there was actually a significant increase in HIV prevalence with increasing levels of education (Zungu-Dirwayi N, Shisana O, Louw J, Dana P. 2007; Matthews AP., 2007). A national survey of teachers in South African public schools in 2004 indicated that 12.7% were HIV positive. The highest rates of HIV were among teachers 25 to 34 years of age (21.4%) and teachers with four or fewer years of experience (21.1%) (Department of Health; Report; SA 2012; HEAIDS 2008; Govender Prega 2001).

In one previously conducted study, we found that 26.0% of the university students at a South African university had either been pregnant, or fathered a pregnancy, as compared with 8.3% of United States students (Heeren et al., 2007). Ante natal clinic (ANC) data in 2007 showed that the infection rate of the same age group is 27% in that specific area. (Dorrington 2002) In addition, 19.4% of female university students in South Africa reported having children as compared with only 2.5% of US students. Moreover, about 15.0% of students in South Africa reported a history of STIs as compared with 1.9% in the US students (Heeren et al 2007; 2009). Most STIs are commonly asymptomatic and, accordingly, are often not detected or treated promptly, fueling broader transmission especially in closed communities such as university campuses (Peltzer 2010). Besides being linked to infertility, ectopic pregnancy, stillbirths, and cervical cancer, STIs increase susceptibility to HIV in both men and women (Eng & Butler, 1997).

Sexual risk behaviour data further underscores the high risk of HIV/STI among university students in South Africa, particularly in the context of a generalized epidemic. We found that only about 50% of university students in South Africa reported using condoms consistently (Heeren GA et al 2009; 2012; Abdool K., et al 1992). In two studies, more than 20% of university students in South Africa reported having multiple sexual partners (Heeren et al. 2012; Maswanya E.S. et al 1999). Multiple partners, particularly concurrent partnerships, are thought to play an important role in the rapid spread of HIV in Sub-Saharan African countries, including South Africa (Morris & Kretzschmar, 1997; Halperin & Epstein, 2004; Chernoff RA, 2005).

We are presenting the results of a pilot survey, which was part of the preparation of the main trail for the university health promotion program. The results of the health promotion program has been reported in different articles (Heeren et al 2012; 2012)

### Aim

To test the survey in view of cultural context and language use.

To examine possible difference in attitude and behaviour by gender and nationality.

To determine the students' perceptions of a health promotion intervention programme to be offered at the university.

## Methods

### Study population

The University is situated in a small town. The young adult student population is mostly within the age range of 18 and 30 years. They originate from different parts of South Africa as well as other African countries. Student enrolment at the university for the 2008/2009 academic year (when the study was carried out) was 8 548, distributed over three different campuses; about 57% of the students are females and about 20% are Non-South Africans.

### Study design and target group

The survey involved the administration of a paper and pencil survey and attending a focus group session discussion about the survey. Following wide publicity of the survey (in lecture halls, class rooms, flyers in the library, cafeteria and other main meeting places for students), 73 students were recruited to participate. Each participant signed prior participation a consent form, survey agreement form and a registration form. The survey was anonymous. The ages were between 18 to 24 years of age.

Ethical clearance for the study was obtained from the University Institutional Review Board of Pennsylvania and the Ethics Committee of the University of Fort Hare, Alice.

### Description of the survey

**Measures—**The students completed an anonymous self-administered survey. The paper and pencil survey examined the socio-economic background, the sexual attitude, behaviour, relationships and knowledge about HIV of the respondent. The survey also examined health attitudes and included questions regarding alcohol, diet, exercise and health promotion related issues (Baker, S. 2003; Ajzen 1980). We also included questions on circumcision, religion, childhood experience, relationship conflicts and mood inventory. We applied the theory of planned behavior to design the survey (Ajzen 1980); 1985; 1991). In the sexual attitude and behaviour sections, the participants were asked whether they ever had sexual intercourse, which was defined as a man's penis in a woman's vagina.

In the behavioural attitude section we examined the intention to use condoms in the next 3 months. The likert scale was used throughout the survey. In the attitude towards condom use section we used the very negative to very positive approach and in the subjective norm section we used the options between disapprove strongly (1) to approve strongly (5). The same was applied in the perceived behavioural section as in the prevention beliefs and in the normative beliefs section, including the control beliefs questions. The measure of the intention to use condoms was based on the students' rating of the likelihood that they would use condoms if they had sex in the next three months on a likert scale from extremely

unlikely (1) to extremely likely (5). The survey included also knowledge questions including HIV, condom use and STI's.

### Data Analysis

The double entry technique was used in data capturing to check for data entry discrepancies. The statistical methods used in the data analysis included chi squared, t tests, logistic regression and multiple regression. Descriptive statistics, including mean, standard deviations, and percentages, were calculated to characterise the sample in terms of socio-demographic characteristics and theoretical variables. Multiple regressions were used for the analysis of the theory of planned behaviour. Hierarchical multiple regressions were used to test the significance of potential moderator variables, including gender, cultural background and sexual experience.

## Results

The university hosts about 20% non South African students, we wanted to examine if these students behave differently than the South African students. Therefore we decided that half of the participants should be females and half South Africans. The participants of the survey were from different parts of South Africa, Lesotho, Botswana, Zimbabwe, Cameroon, Nigeria, Congo, Kenya and Eritrea. About 22,2% were students in their first year, 33.3% in their second year and 26.4% were in their third year at the university. The mean age of the students were 22.2 years of age. The mean age at first sexual encounter did not differ by gender ($t=-1.03$, $p=0.3034$) and nationality ($t=-0.05$, $p=0.9611$). On average, males' partners were significantly younger than those of the females and males seem to have more sexual partners compared to females, regardless of national or cultural background.

The participants were recruited from all faculties at the university. They felt that if they had sex within the next three months their friends and family would approve this. Such approval was significantly higher for South Africans with an approval score of 4.8 compared to 4.3 for non-South Africans. There is uncertainty over the benefits of abstinence among males (mean = 2.99) while females (mean = 3.8) seem to agree that it is beneficial to abstain. The same can be said about perceptions on the negative effects of sexual intercourse while at university on an individual's future prospects. There was a strong agreement that unprotected sex can lead to pregnancy and STIs with an average score of 4.7 and this was found to be higher among South Africans ($t=3.15$, $p=0.0024$).

The participants were not sure if condom use had any negative effects, although surprisingly females agree more than males, that condoms affect the pleasure of sexual intercourse ($t=-3.48$, $p=0.0009$). Condoms were reported to be easily available and accessible to students and they generally agreed that these were useful for purposes of the preventing of both pregnancy and STIs. The results showed that students find it easy to discuss condom use with their partners and that females have more self control than their male counterparts when it comes to pausing in the sex act for the purposes of using a condom.

About 26% of the participants had never had sexual intercourse and were therefore excluded from further analysis of sexual behaviour variables. There is evidence of an association between ever having had sexual intercourse and gender as reflected by 63% of them being males (Chisq=7.58, $p=0.0059$, Fisher's $p=0.0077$, OR=5.6, 95%CI [1.64; 18.87]). The mean age of those who had never had sexual intercourse was found to be not significantly different from that of those who had.

Five (6%) participants, 2 South Africans and 3 non South Africans, reported ever having been forced to have sexual intercourse. Four (5%) of these participants were females.

Most (56.6%) 53 of the participants did not use a condom at the first sexual intercourse and this includes 61.8% of males and 65.5% of South Africans who had ever had sexual intercourse. While this may suggest gender and nationality effects on condom use at first sexual intercourse, the tests did not detect such associations as statistically significant. An encouraging 71.7% (53) of participants that had had sexual intercourse used a condom at the last sexual intercourse. This includes 64.7% of the male participants. No statistically significant associations were detected between condom use at last intercourse, by gender or national / cultural background.

Only 10 (14%) participants had used alcohol/drugs at the last sexual intercourse and so detecting significant associations with gender and nationality was not examined.

About 27.6% of the South Africans who had ever had sexual intercourse have had an STD compared to 4.2% of non South Africans. The association between having had STD and national / cultural background was found to be statistically significant (chisq=5.11, p=0.0238, Fisher's p=0.0306, OR=9.6 95%; CI [1.10; 85.9]).

About 78% of the participants had experienced sexual intercourse during the last 3 months. These included 64.5% of males and 63.4% of South Africans. Tests detected a statistically significant association between having had sex in the past three months and national background (chisq=5.54, p=0.0187, Fisher's p=0.0245). About 78% of those participants that had experienced sexual intercourse, had had sexual intercourse over the preceding 3 months and close to 64% of them were South Africans and almost the same percentage were males. These are the only ones that were considered for further analysis of their behaviour over the preceding 3 months.

The results show that frequency of sexual intercourse and condom use, alcohol use before sexual intercourse, number of days of sexual intercourse and multiple sexual partners over the preceding three months did not depend on national background. However, there is evidence that some of these variables depend on gender, namely, frequency of sexual intercourse ($Z=-2.76$, $p=0.0058$), number of days of sexual intercourse ($Z=-2.45$, $p=0.0140$) and multiple sexual partners ($Z=-2.735$, $p=0.0062$). These variables depend on gender in such a way that males had more sexual intercourse on more days than females and that they have had more sexual partners than females over the three-month period. Table 1 and 2 present the result in details.

The focus group session was immediately held after the completion of the survey. The participants showed positive support for a health promotion program at the university. There were only minor issues regarding the language and some changes were necessary regarding cultural sensitive topics.

## Discussion

The results of the focus group discussion lead in the final survey to the exclusion of the cultural sensitive questions and to minor adjustment in regard of language.

The results of this survey show that males have at average sexual intercourse in an earlier age than the females for the first time. However, there is statistical evidence that the mean age at first sexual intercourse of 18.2 years for non South Africans is significantly higher than that of South Africans of 16.2 years ($Z=2.44$, $p=0.0147$). While there is that difference in age at first sexual intercourse with respect to national background, there is no such difference when it comes to age of the last sexual partner. Age of partner at last sexual intercourse has a strong association with gender. There is evidence that females had older

sexual partners at the last sexual intercourse (23.9 years) compared to 19.2 years for males (Z=3.52, p=0.0004).

Due to the fact that these variables are a mixture of continuous and discrete data and the sample sizes are small; the Spearman's correlation was used instead of the Pearson's correlation coefficient. However, both correlations were computed for the data and the results had exactly the same pattern of correlations. Age at first sexual intercourse was found to be significantly positively correlated to age of the last sexual partner (r=0.37, p=0.0204). Older participants tend to have more lifetime sexual partners (r=0.49, p=0.001) and are associated with alcohol/drug use before their latest sexual intercourse (r=0.48, p=0.009). Higher lifetime sexual partners, were found to be correlated with higher frequency of sexual intercourse (r=0.55, p=0.0003), more sexual partners (r=0.47, p=0.0024) and having had sexual intercourse on a higher number of days (r=0.51, p=0.0011).

The highest correlation of 0.78 (p=0.0001) was detected for frequency of sexual intercourse and the number of days of sexual intercourse. This means those with a high frequency of sexual partners have had sexual intercourse on a high number of days.

University students are the group of people who are the elite of the nation. The results show that interventions are needed. We need to develop interventions that reach the young people, as this is the most important time in their lives. This is consistent with other studies elsewhere in the world (Baker, S. 2003; Peltzer K., 2010) Most of the participants in this survey seem not to use condoms consistent. Adbool K found in their study similar results (1994). Agha S and Rossem R (2004) raised their concern on the peer influence behavior, which might lead to condom use or the inconsistence of condom use. Most peers are not only influenced about condom use, but also through multiple partners, which is thought to be one of the main factors in the increase of HIV infections (Morris & Kretschmer 1997).

The results of our study suggest that a health promotion intervention programme aimed at improving the quality of sexual and health knowledge and practice of university students may be necessary. During the focus group sessions, held immediately after the survey students raised their concern about cultural appropriateness, which lead later to a change of some questions. The students showed keen interest in a health promotion programme and were looking forward to be given an opportunity to attend a health promotion program and pledged their willingness to participate in such a programme. They also acknowledged that they had poor knowledge about healthy diets, need for exercise, responsible alcohol consumption and guidance about their sexual risk behavior.

Such a program needs to be designed with the assistance of interventional specialists and students from the relevant campus who can insight of what is going on at the campus life, so that would contribute to the development of such an intervention. The program has to be cultural sensitive and appropriate for the environment.

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**Table 1**

Nationality analysis

| Descriptive statistics for socio-demographic variables and sexual behaviours by nationality | | | | | | |
|---|---|---|---|---|---|---|
| **Variable** | **All students (N)** | **SA** | **Non SA** | **Test statistic** | **P** | **Fisher's** |
| Women (%) | 47.2 (72) | 52.8 | 41.7 | 0.8916[a] | 0.3450 | 0.4791 |
| Age (mean years) | 22.01 (72) | 21.8 | 22.2 | −0.8901[b] | 0.3734 | |
| On campus residence (%) | 87.5 (72) | 86.1 | 88.9 | 0.1270[a] | 0.7216 | 1.0000 |
| Single (never married)(%) | 94.4 (72) | 100.0 | 88.9 | 4.2353[a] | 0.1203 | |
| Living with steady partner (%) | 14.7 (68) | 8.6 | 21.2 | 2.1637[a] | 0.1413 | 0.1809 |
| Year at University: | | | | | | |
| First year (%) | 22.2 (72) | 33.3 | 11.1 | 7.8968[a] | 0.0482 | |
| Second year (%) | 33.3 | 25.0 | 41.7 | | | |
| Third year (%) | 26.4 | 30.6 | 22.2 | | | |
| Sexual behaviour and attitude: | | | | | | |
| Ever had sexual intercourse (%) | 73.6 (72) | 80.6 | 66.7 | 1.7875[a] | 0.1812 | 0.2848 |
| Age at first sexual intercourse (mean years) | 17.1 (52) | 16.2 | 18.2 | 2.4387[b] | 0.0147 | |
| Number of lifetime partners | 6.8 (51) | 7.7 | 5.8 | −0.3814[b] | 0.7029 | |
| Ever forced to have sexual intercourse (%) | 9.26 (54) | 6.9 | 12.5 | 0.4826[a] | 0.4872 | 0.6486 |
| Ever had an STI (%) | 17 (53) | 27.6 | 4.2 | 5.1091[a] | 0.0238 | 0.0306 |
| Used condom at first intercourse (%) | 43.4 (53) | 34.5 | 54.2 | 2.0714[a] | 0.1501 | 0.1745 |
| Used condom at last intercourse (%) | 71.7 (53) | 72.4 | 70.8 | 0.0162[a] | 0.8988 | 1.0000 |
| Age of last sexual partner (mean years) | 21.0 (49) | 20.9 | 21.2 | 0.0303[b] | 0.9759 | |
| Number of times of sexual intercourse in last 3 months | 9.7 (53) | 12.0 | 6.9 | −1.6150[b] | 0.1063 | |
| Number of days of having sexual intercourse in last 3 months | 6.8 (52) | 7.9 | 5.4 | −1.6789[b] | 0.0932 | |
| Number of drinks before last sexual intercourse | 1.9 (38) | 1.4 | 2.6 | 1.3435[b] | 0.1791 | |
| Condom use frequency over last 3 months | 3.6 (54) | 4.4 | 2.7 | −2.3196[b] | 0.0204 | |
| Number of sexual partners in last 3 months | 1.5 (53) | 1.9 | 1.0 | −2.0969[b] | 0.0360 | |

[a]Chi-square test

[b] Normal approximation of the Mann-Whitney test

Significance level $\alpha = 0.05$

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**Table 2**

Gender analysis

| Descriptive statistics for socio-demographic variables and sexual behaviours by gender | | | | | | |
|---|---|---|---|---|---|---|
| **Variable** | **All students (N)** | **Men** | **Women** | **Test statistic** | **P** | **Fisher's** |
| South Africans (%) | 50 (72) | 44.7 | 55.9 | 0.8916[a] | 0.3450 | 0.4791 |
| Age (mean years) | 22.01 (72) | 22.1 | 20.2 | −3.1201[b] | 0.0018 | |
| On campus residence (%) | 87.7 (73) | 92.3 | 82.4 | 1.6653[a] | 0.1969 | 0.2881 |
| Single (never married)(%) | 93.2 (73) | 94.9 | 91.2 | 1.1925[a] | 0.5509 | |
| Living with steady partner (%) | 15.9 (69) | 21.6 | 9.4 | 1.9205[a] | 0.1658 | 0.2018 |
| Year at University: | | | | | | |
| First year (%) | 21.9 (73) | 7.7 | 38.2 | 13.1667[a] | 0.0043 | |
| Second year (%) | 32.9 | 33.3 | 32.4 | | | |
| Third year (%) | 27.4 | 30.8 | 23.5 | | | |
| Sexual behaviour and attitude: | | | | | | |
| Ever had sexual intercourse (%) | 74 (73) | 87.2 | 58.8 | 7.5859[a] | 0.0099 | 0.0077 |
| Age at first sexual intercourse (mean years) | 17.1 (52) | 16.7 | 17.8 | 1.4539[b] | 0.1460 | |
| Number of lifetime partners | 6.8 (51) | 8.8 | 3.7 | −3.2378[b] | 0.0012 | |
| Ever forced to have sexual intercourse (%) | 9.3 (54) | 2.9 | 20.0 | 4.3615[a] | 0.0368 | 0.0570 |
| Ever had an STI (%) | 16.7 (54) | 17.7 | 15.0 | 0.0635[a] | 0.8010 | 1.0000 |
| Used condom at first intercourse (%) | 42.6 (54) | 38.2 | 50.0 | 0.7128[a] | 0.3985 | 0.5694 |
| Used condom at last intercourse (%) | 70.4 (54) | 64.7 | 80.0 | 1.4127[a] | 0.2346 | 0.3560 |
| Age of last sexual partner (mean years) | 21.0 (49) | 19.2 | 23.9 | 3.5207[a] | 0.0004 | |
| Frequency of sexual intercourse in last 3 months | 9.7 (53) | 12.4 | 4.8 | −2.2229[b] | 0.0262 | |
| Number of days of having sexual intercourse in last 3 months | 6.8 (52) | 8.6 | 3.3 | −2.0734[b] | 0.0381 | |
| Number of drinks before last sexual intercourse | 1.9 (38) | 2.2 | 1.3 | −1.3993[b] | 0.1701 | |
| Condom use frequency over last 3 months | 3.6 (54) | 3.8 | 3.2 | −0.8660[b] | 0.3865 | |
| Multiple sexual partners in last 3 months | 1.5 (53) | 1.9 | 0.8 | −1.9296[b] | 0.0537 | |

[a] Chi-square test

[b] Normal approximation of the Mann-Whitney test

Significance level $\alpha = 0.05$