Factors That Influence the Spread of HIV/AIDS Among Students of the University of Botswana

Esther S. Seloilwe, RN, RM, PhD

The results discussed in this report are part of a larger study conducted among the students of the University of Botswana regarding their knowledge, attitudes, and behaviors related to HIV/AIDS. The study triangulated survey methods and focus group discussions. Five main areas were investigated: knowledge and personal experiences of HIV/AIDS, sexual behavior and practices, perceptions about risky sexual behavior on campus, and factors that influence the spread of HIV. This article reports high levels of risky behaviors such as alcohol and drug abuse; unprotected sex; frequent change of sexual partners; sex for financial gain, for prestige, for good grades, to relieve stress, and because of peer pressure; and casual sex as part of socializing.

Key words: *HIV/AIDS, Botswana, risky behaviors*

The last two and one-half decades have witnessed a gradual and steady extension of the HIV/AIDS epidemic to virtually all communities in all parts of the globe. Dozens of countries are already in the grip of serious HIV/AIDS epidemics, and many more are on the brink. Since the beginning of the epidemic, an estimated 40 million people have been infected, of which 3 million have died from the ensuing disease. In 2001 alone, 5 million new infections were recorded (UNAIDS, 2002). About 80% of HIV infections occur in Sub-Saharan Africa. This region remains by far the worst affected region in the world. On top of that, fewer than 30,000 people have been estimated to be benefiting from antiretroviral drugs as of the end of 2001 (UNAIDS). The number of children in the region orphaned by HIV/AIDS is estimated at 11 million (UNAIDS).

The HIV/AIDS situation is so overwhelming that even if exceptionally effective measures of prevention, treatment, and care programs can be instituted immediately, the devastation of human life and socioeconomic status will remain significant for many generations to come. Among the most severely affected areas are those countries in southern Africa in which between 20% and 25% of the population is now infected with HIV virus (UNAIDS, 2002).

In Botswana, the 2002 Sentinel Surveillance Report (Botswana National AIDS Coordinating Agency, 2002) indicated that HIV/AIDS prevalence rates among pregnant women and men with other sexually transmitted diseases have continued to increase. The prevalence among pregnant women in 1992 was 18% and had increased to 38.5% by 2000. However, the prevalence had plateaued at 36.2% in 2001 and 35.4% in 2002. The Botswana epidemic pattern is generalized, sparing no district. Almost all districts have prevalences exceeding 20%. The epidemic has no doubt devastated the country's economy, and the gains that had been acquired over the years have been reversed (Jack et al., 1999).

This article reports part of the results of a study on the knowledge, attitude, and behavioral aspects of HIV/AIDS among the students of the University of Botswana. The study was initially conducted in 1999 and repeated in 2002. The results reported here focus on the factors that contribute to the spread of HIV/AIDS among University of Botswana students.

Esther S. Seloilwe, RN, RM, PhD is head and senior lecturer in the Department of Nursing Education, University of Botswana.

Design Overview

This study used an exploratory survey design, which was triangulated by focus group discussions led by the investigators. The investigators had different professional backgrounds such as nursing, epidemiology, measurement and evaluation, and demography.

Sampling

A stratified random sample was obtained and was based on the faculty or school and the student's year of study. These sampling techniques were implemented in 1999 and repeated in 2002. The results reported here are from the initial 1999 sample. In the 2002 sample, the focus of the study was to categorize the students into several groups to develop targeted intervention programs. The sampling unit was the class, and individuals in the selected class formed the unit of analysis. The University of Botswana has six undergraduate faculties or schools and a School of Graduate Studies. In each stratum, sampling was performed proportional to the class size. The total sample size required for 99% confidence level was 622, but it was decided to double this sample; thus, the total sample to be investigated was 1,244 students.

A large sample size was required to capture dynamics of behavioral patterns, which may manifest in many combinations. The investigators agreed to double the sample size to increase the confidence level, because this was the first study to be conducted among university students on HIV/AIDS in Botswana. A total of 1,374 students responded to the questionnaire.

Data Determination

To circumvent the problem of possible low return rates, the questionnaire was administered to intact groups of students at the beginning of the class period, and questionnaires were obtained immediately after they had been completed. The questions focused on demographic information, which basically included sex, year of study, and marital or partner status. Knowledge about HIV/AIDS looked at basic factual information students had about the epidemic, such as transmission. Sexual behavior included questions about whether participants had partners or not, where their partners were and how many they had, if they have had penetrative sex, and if they did or did not have safe sex. Personal experiences with HIV/AIDS included questions such as whether or not they would submit to a test, whether they knew somebody with AIDS, and what safety precautions they were taking. Regarding sexually transmitted diseases, the investigators wanted to know if they had experienced any symptoms.

The category of sexual behavior and HIV/AIDS on campus included factors that contributed to the epidemic, such as alcohol use, whether or not safe sex was practiced, and the perceived prevalence of HIV on campus. Participants were also asked to list the factors that they thought were associated with risky sexual behaviors and if these existed on campus. Students were supplied with a list of possible responses that were developed through pilot testing of the questionnaire, and the students were to indicate their responses with a check. Respondents did not necessarily answer all questions, because they could skip some sections that were not applicable.

Focus group discussions led by the investigators were held after the survey was conducted to enable further understanding of the HIV/AIDS situation at the university. The purpose of the discussions was to provide in-depth perspectives of HIV/AIDS from the point of view of students. Questions that were asked were similar to the ones asked on the questionnaire. The sessions were therefore not structured, and all questions probed for additional explanation of attitudes, beliefs, and experiences. Four focus groups were conducted. Participants of focus groups were not part of the study sample that completed the questionnaire but shared similar demographic characteristics. The focus group discussions were tape recorded and later transcribed and analyzed by the investigators. Focus group discussions lasted for about an hour. Both female and male students were represented in these groups. Each group was composed of 10 to 12 students.

Table 1. Respondents by Sex, Year of Study, and Marital Status

	Women		Men		
Year of Study	Single (%)	Married (%)	Single (%)	Married (%)	Total
First	251 (41.9)	29 (4.8)	301 (50.3)	18 (3.0)	599
Second	95 (34.9)	33 (12.1)	135 (49.6)	9 (3.3)	272
Third	85 (48.0)	8 (4.5)	77 (43.0)	7 (4.0)	177
Fourth	56 (36.6)	18 (11.8)	72 (47.1)	7 (4.6)	153
Fifth	30 (53.6)	7 (12.5)	17 (30.4)	2 (3.6)	50
Graduate	31 (53.3)	5 (10.2)	12 (24.5)	1 (2.0)	49
Total	548 (42.0)	100 (7.7)	614 (47.0)	44 (3.4)	1306

NOTE: Figures in parentheses are percentages of raw total.

Data Analysis

The survey questionnaire was developed using EPI Info software (Centers for Disease Control and Prevention, Atlanta, GA) to enable easy data entry and to minimize errors. EPI Info has a set of programs for word processing, data management, and epidemiological analysis and is designed for public health professionals. The software also includes forms designs. Data were cleaned by ensuring that all questions had been answered. If some questions had not been responded to, they were discarded. Once this process was completed, the SPSS (Statistical Package for the Social Sciences; SPSS, Inc, Chicago, IL) was used for the analysis of all quantitative data from the questionnaire. The focus group discussions were transcribed into text by the investigators and coded line-by-line, sentence-by-sentence, and paragraph-by-paragraph to tease out themes and to group like data together to come up with major categories.

Results

Demographics of the Sample

The study sample comprised 1,374 students who were registered at the University of Botswana in Gaborone in the academic year 1999–2000. This number represents 15% of the total student population living both on and off campus. Of the 1,374 respondents, 47 were excluded from the analysis because of incomplete responses to the questionnaire, leaving a total of 1,327 respondents to form the basis for analysis. However, for some variables, the total responses would vary according to the number who responded to the particular section. Of the 1,327 respondents, 652 (49.5%) were women and 665 (56.1%) were men. This reflects a similar ratio as in the student population. Of the respondents, 89% were single and 10.9% were married. Only a negligible percentage of students (.4%) did not indicate their sex or marital status.

Table 1 shows a cross-tabulation of sex, marital status, and year of study. About twice as many of the female students (7.7%) were married, as compared with male respondents (3.45%), a feature that may be a reflection of an earlier age of marriage among women than men.

Age of Respondents

The mean age of respondents with those of their partners was compared. There was no significant difference in the mean age of male and female respondents. The mean age of the partners of female respondents (30.2 years) was, however, higher than the mean age of the women (25.6 years). Conversely, the mean age of partners of male respondents (21.6 years) was lower than the mean age of the male respondents (23.6 years). This inverse relationship between age of partner and sex of respondents suggest what would generally be expected; that is, women tend to have older partners and men tend to have younger partners.

Table 2. Factors That Influence Risky Sexual Behaviors

Factor	Overall %
Alcohol and drug abuse	87.6
Unprotected sex	84.7
Frequent change of sexual partners	76.4
Exchange of sexual partners	74.4
Sex for financial gain	74.2
Prestige of having multiple partners	66.4
Casual sex partners	65.4
Peer pressure	60.4
Sexual activity for good grades	58.6
Sexual activity to relieve stress	57.6
Gender issues	71.2

Risk Behaviors

The factors that contribute to risky sexual behaviors are summarized in Table 2.

Alcohol abuse and substance abuse. Alcohol abuse was often mentioned as a major contributory factor to the spread of HIV/AIDS. The results of the study indicate that students are increasingly vulnerable to HIV/AIDS because of the following factors:

- Excessive alcohol consumption leads to promiscuous, irresponsible, high-risk sexual behaviors.
- Alcohol abuse interferes with the ability to make prudent decisions, such as engaging in safe and protected sex.

Focus group discussions have also confirmed alcohol consumption as a major problem. Students stated that older men sexually exploited them as youth, especially after drinking. They reported that when people are drunk, they do not care nor fear anything. They become brave so that they take risks such as engaging in unprotected sexual endeavors. Alcohol abuse was seen as encouraging low, improper, and inconsistent use of condoms, thus predisposing people to contracting HIV infection.

Alcohol abuse is considered a critical factor in the spread of HIV/AIDS because it fuels the epidemic. It is believed that alcohol leads to decay of cultural values and morals of the society, resulting in diminished sexual discipline that often leads to risky sexual behavior.

Table 3. Frequency of Condom Use by Sex of Respondents

Frequency of Condom Use With Current Partner	Women	Men
All of the time	257 (59.9%)	291 (77.8%)
Sometimes	98 (22.8%)	50 (13.4%)
Only early in the relationship	49 (11.4%)	22 (5.9%)
Never	25 (5.8%)	11 (2.9%)
Total	429 (100%)	374 (100%)

Excessive alcohol consumption reduces willpower, judgment, and inhibitions. In the Botswana communities, alcohol is seen as the main form of entertainment. There are bars all over, and even on the University of Botswana campus there is a bar in the middle of student residences. This bar, students reported, encourages them to drink heavily because alcohol is readily available and accessible. They said that some students learn to drink alcohol at the university because of peer pressure. The majority of University of Botswana students is at the adolescent stage and easily submits to peer pressure. Perhaps this is one reason some acquire their drinking habits at this time.

The results of the study further revealed that control of one's sexuality is difficult when under the influence of alcohol and that those who drink too much run the risk of engaging in casual, unprotected sex, which increases their risk of contracting HIV. In making this assertion, students indicated that alcohol increases libido, and hence the desire for sexual relations. They mentioned that generally after heavy drinking, one could easily be manipulated to engage in unplanned sexual intercourse. Excessive alcohol intake enhances sexual exploitation with resultant high-risk behaviors.

Unprotected sex. This is an obvious factor that renders students vulnerable to contracting HIV/AIDS. The study indicated that unprotected sex is rampant despite their high level of knowledge about transmission of HIV. Condom use was irregular, inconsistent, and sometimes improper.

Table 3 indicates that condoms are not used consistently. Of the 803 respondents who answered this section, only 59.9% of women and 77.8% of men stated they used condoms all the time; 22.8% of

women and 13.4% of men used them sometimes. There is a worrisome number of students (11.4% of women and 5.9% of men) who use condoms only at the beginning of a relationship, and later in the relationship they abandon the use of condoms. Although the percentage of those who never use condoms is small, it is dangerous and raises a concern that there are students who do not use condoms at all.

The lack of condom use places the participants at high risk of contracting HIV. A conclusion can be made that students use condoms inconsistently and thus are predisposed to HIV infection.

Frequent change of partners. Another observed practice is the frequent change of partners. This practice renders the students vulnerable to contracting HIV. Data indicate that some students changed partners three to four times in a year.

When asked what motivated them to change partners so often, they said that they were looking for stable partners, and if they realized that a partner was not serious, then they changed partners in search of more serious ones. Another reason cited by students for changing partners was acquiring material gain such as money, gifts, clothing, and cellular or mobile phones; thus, students are prone to temptation.

Exchange of sexual partners. Students mentioned a phenomenon that is uncommon in Botswana as a whole: exchange of sexual partners. They stated there was sometimes a mutual agreement to exchange partners in small groups of friends. Partner exchange was described as a short-term experience. Thereafter, partners reverted to their original ones. Students reported that this is an exhilarating experience. Partner exchange is a high-risk practice that exposes students to multiple sex partners and to HIV.

Sexual activity for financial gain. A number of students engaged in sexual activity for material gain or money. Students mentioned that that is why they had partners other than students, because students do not have money. Students sought sexual relationships with older working men because they are the ones who have money. Data indicate that about 45% of the students had partners off campus. This attests to the fact that they engaged in sexual activity for financial gain. Other studies conducted in Botswana indicate that sexual activity for financial gain is a common practice. These studies show that multiple sexual partners were responsible for one person's particular needs. For example, one partner would pay for transport, another for lunches, another for rentals, and so on (Ntseane & Ncube, 2001; Molebtsi & Mogobe, 2001; Seloilwe & Ntseane, 2001).

Students at the university come from different socioeconomic backgrounds. Once they are on campus, they are influenced to adopt lifestyles that may not fit their socioeconomic background. Students mentioned that they engaged in sexual activity to have money to buy clothes, to do their hair, to buy cellular phones, and so on. In fact, they mentioned the "three C syndrome": cash, cellular phone, and car. In their view, a sexual partner must be able to deliver these.

Prestige of multiple partners. Many students, especially men, still consider it prestigious to have multiple partners. This was described as a function of peer pressure whereby students might mock those who did not have multiple partners as being backward and not "on top of things." Male students were considered "with it" or powerful if they had many sexual partners. It is this mentality that influences them to have multiple partners. Thus, they become vulnerable to HIV and AIDS.

Casual sex partners. Having casual sex partners or one-night stands is another common practice that often occurs between strangers who meet at a bar or disco. The relationship starts with the couple dancing together or over a drink. Usually, it is the man who buys the drinks. They end up having sex, which is usually unprotected and unsafe. The implication is that potential for exposure to HIV and other sexually transmitted diseases is very high, particularly considering that 67% reported this behavior. With such frequent occurrence of casual sex among students, the decision to practice safe sex is important.

Peer pressure. Peer pressure was cited as another factor contributing to the spread of HIV/AIDS. Interview data revealed that students are often influenced by others to engage in behaviors they would otherwise not engage in. They do things simply because their colleagues are doing them. For example,

if a student boasts of having many partners, others believe they should have multiple partners. Some students feel belittled or that they are outcasts from the group if they are not doing what their fellow students are doing. The desire to conform thus makes them engage in high-risk behavior. It was cited that oftentimes, those who tried to resist conforming were called names such as "sack," meaning that the scrotum is full of sperm. In an attempt to avoid being called names, a student finds himself or herself conforming to group behavior.

Gender issues. Gender factors were also reported to contribute to the spread of HIV/AIDS. Women in particular were identified as vulnerable to HIV infection because they cannot always negotiate safer sex. They are poverty-stricken, and most of them are unemployed. Interview data indicate that women are economically disadvantaged, which causes them to succumb to conditions in which they are exploited sexually. Women head quite a number of households in Botswana. Women have a weak economic base (Botswana Institute for Development Policy Analysis and Ministry of Finance Development and Planning, 2002). As a result, they turn to other ways of strengthening this base, such as multiple sexual partners and use of sex as a financial exchange commodity. Focus group data confirm that women engage in sex with multiple partners to have, for instance, somebody who pays for rent, transport, food, and so on.

Data show that their male counterparts sexually exploit women. It has been documented in other studies that women are vulnerable to HIV/AIDS. For instance, HIV/AIDS infections have been reported to be generally higher among women as compared with men. Biological factors, a weak economic base, gender inequalities, and poor relationships can account for the high rate of HIV/AIDS infections among women. Women's biological disposition—a larger mucosal surface—makes them vulnerable to the HIV infection.

Men, on the other hand, are said to generally have more sex partners than women do. It was stated that, without men, HIV would have little opportunity to spread here because more than 70% of HIV infections are estimated to occur through heterosexual practices. Currently in Botswana, men are the ones who approach women to seek sexual relations; they seek health care less often than women do and are more likely to engage in behaviors such as drinking, multiple partners, and casual sexual relationships, which put them at high risk for contracting HIV infection.

Sexual activity for good grades. A substantial number of students (n = 300; 67%) indicated that they engaged in sexual activity for good grades. This indicates that there is sexual activity between students and academic staff.

This type of sexual interaction further attests to multiple partners and thus, greater vulnerability to HIV infection. Further, student–academic staff sexual activity is an issue of great concern because it shows that transactional sex goes beyond material gain. It compounds the issue of HIV infection and makes control very complex and difficult. University students and lecturers are the most educated sections of society, and if they engage in such behaviors, it makes the situation of controlling the spread of HIV/AIDS a desperate one. It suggests that human behavior has little correlation with education. It would be expected that the more one is educated, the less sexual risk behaviors one would engage in.

Sexual activity to relieve stress. Students also reported that they engaged in sex to relieve stress. This indicates that sexual activity is not sacred, but it is used as a form of recreation. Sexual activity is engaged in to have fun. This perhaps shows how bored the students are and that perhaps there should be more recreational activities on campus to assist students to relieve stress rather than turning to sexual activity, which may predispose them to HIV infection.

Implications

There were several implications from this study. It was quite clear that numerous intervention strategies are needed and imperative to address the problems that were outlined. What was needed was an educational program that would target behavior change in the students. As a result, the Department of Nursing Education was tasked with developing a general ed-

ucation course on HIV/AIDS to be offered to all first-year students. The course used pedagogical principles geared toward changing behaviors of the students. These included role-plays, individual discussions, seminars, and workshops to assist students in developing life skills. Pretesting and post-testing were also performed to assess the level at which the students were with regard to HIV/AIDS and their reasons for wanting to take the course. The post-test was meant to assess whether the needs and desires of the students had been met.

It was evident that student services, especially health and counseling, were not meeting the needs of the students. These services were operating when students were in classes and were closed when classes ended, so if students needed condoms there was nowhere to get them. The services were reoriented to be open 24 hours to accommodate the needs of the students. Health services were basically curative, and a health and wellness center was established to reorient the provision of these services to come from an education and preventive perspective. The center also provides an individual-centered approach, whereby students are talked to and advised at the individual level.

Discussion groups were held to try and understand the situations the students were in and identify their health needs so that planned programs could be targeted to address them.

Men's discussion groups strove to instill a sense of responsibility, bearing in mind that culturally they were future heads of families. They needed to start learning how to protect their relationships and their families. Protecting their future families starts with protecting their partners and relationships by ensuring that they practice safer sex.

Students also produced a dialogue magazine in which they discuss critical issues pertaining to safer sex practices. They own this magazine, and very good ideas come out of these dialogues. The ideas were subsequently used in the planning of intervention programs that are relevant to their needs and problems.

Strengthening and vigorous extension of preventive programs were implemented to equip students, especially female students, with life skills and empower them to better negotiate safer sex with their partners. The life skills also assisted students to overcome peer pressure and to believe in themselves.

Lastly, a 5-year strategic plan was developed to serve as a blueprint for action for HIV/AIDS activities and programs at the University of Botswana.

The strategic plan included, among other things, establishment of a voluntary counseling and testing service, which is run in partnership with BOTUSA (a Botswana–United States partnership). Since this counseling and testing service was provided, many students have submitted to an HIV test, a step that is very important in the prevention of the spread of HIV/AIDS. Those who test negative are encouraged to maintain this status, and those who test positive are advised to live positively with the virus and to take care of themselves and avoid reinfection with other strains.

Testing and knowing one's status places one in a more advantageous position of accessing treatment programs at an early stage of the infection. For instance, isoniacid preventive therapy combats tuberculosis, antiretroviral treatment slows down the progression of HIV disease, and early treatment of opportunistic infections is available. HIV-positive students could also be linked with other community resources such as support care programs, home-based care, and other social welfare services in case they progress to full-blown AIDS.

Conclusion

Factors that contribute to the spread of HIV have also been recorded in studies conducted by Chilisa, Bennell, and Hyde (2001), in which alcohol and drug abuse were reported to be the most important contributory factors. In the HIV/AIDS situation and response analyses studies conducted countrywide, it has been noted that alcohol, multiple partners, and peer pressure contribute to the spread of HIV infections (Fidzani, Ntseane, Seloilwe, & Nthomang, 1999; Fidzani, Ntseane, & Seloilwe, 2000; Molebatsi & Mogobe, 2000, 2001; Ntseane & Ncube, 2001; Seloilwe & Ntseane, 2001).

The results in this report have indicated factors that contribute to the spread of HIV/AIDS. The factors are widespread and are driven by the behavior of individuals.

It is therefore imperative that the control of spread targets these risk behaviors. More educational programs are required to constantly educate people on these high-risk behaviors. The messages have to be behavior targeted. It must be acknowledged that behavior is difficult to change and it will take a long time. However, it is hoped with persistent and constant behavior-targeted messages, change will be achieved.

The university students are considered to have the education that should enable them to understand issues of HIV/AIDS. Discussions have shown that one's level of education may have very little bearing on behavior. Education is expected to assist people to behave in certain ways, but this may not necessarily be so. People with a high level of education and understanding engage in behaviors that put them at risk of HIV infection.

References

Botswana Institute for Development Policy Analysis and Ministry of Finance Development and Planning. (1994) *Income and expenditure surveys studies 1993/1994*. Gaborone, Botswana: Government Printers.

Botswana National AIDS Coordinating Agency. (2002) *Botswana 2002: Second generation HIV/AIDS surveillance. A technical report, November 2002*. Gaborone, Botswana: Author.

Chilisa, B., Bennell, P., & Hyde, K. (2001) *The impact of HIV/AIDS on the University of Botswana: Developing a comprehensive strategic response*. Gaborone, Botswana: University of Botswana.

Fidzani, N. H., Ntseane, D., Seloilwe, E. S., & Nthomang, K. (1999) *HIV/AIDS in the South East District: Situation and response analyses*. Gaborone, Botswana: AIDS/Sexually Transmitted Disease Unit and United Nations Development Programme.

Fidzani, N. H., Ntseane, D., & Seloilwe, E. S. (2000) *HIV/AIDS in the North East District: Situation and response analyses*. Gaborone, Botswana: AIDS/Sexually Transmitted Disease Unit and United Nations Development Programme.

Jack, A., Seloilwe, E. S., Letshabo, K., Bainame, K., Veskov, D., Mokoto, M., et al. (1999) *A study on the knowledge, attitudes and behavioural aspects of HIV/AIDS among students of the University of Botswana*. Gaborone, Botswana: World Health Organization.

Molebatsi, C. O., & Mogobe, K. D. (2000) *HIV/AIDS in the North West District: Situation and response analyses*. Gaborone, Botswana: AIDS/Sexually Transmitted Disease Unit and United Nations Development Programme.

Molebatsi, C. O., & Mogobe, K. D. (2001) *HIV/AIDS in the North West District: Situation and responses analyses*. Gaborone, Botswana: AIDS/Sexually Transmitted Disease Unit and United Nations Development Programme.

Ntseane, D., & Neube, E. M. (2001) *HIV/AIDS in the North West District: Situation and response analyses*. Gaborone, Botswana: AIDS/Sexually Transmitted Disease Unit and United Nations Development Programme.

Seloilwe, E. S., & Ntseane, P. (2001) *HIV/AIDS in the City of Francistown: Situation and response analyses*. Gaborone, Botswana: AIDS/Sexually Transmitted Disease Unit and United Nations Development Programme.

UNAIDS. (2002) *Report on the global HIV/AIDS epidemic*. Geneva, Switzerland: Author.