HIV Risk-Taking Behaviours as Consequences of HIV Knowledge and Perceived Risk of HIV among University Undergraduates

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This study examined knowledge and perceived risk of HIV infection as factors likely to affect HIV risk-taking behaviours. Two hundred and sixty-nine undergraduates of the University of Ibadan participated in this cross-sectional survey (154 male and 115 female). Data were collected using three structured and validated scales. Results indicated that HIV knowledge has a significant effect on HIV risk-taking behaviours. Perceived risk of HIV also has a significant effect on risk-taking behaviours. It was concluded that inadequate/inappropriate knowledge of HIV, increases HIV risk-taking behaviours. Attitudes that personal efforts do not affect health outcomes also increases HIV risk-taking behaviours. It is thus recommended that HIV awareness campaigns be intensified, while attitudinal change initiatives should be embarked upon to discourage HIV risk-taking behaviour.

Key words: HIV, risk-taking behaviour, knowledge, perceived-risk, HIV risky behaviour.

Introduction
Official statistics about the incidence and prevalence of the HIV/AIDS pandemic indicate that this global threat is far from being over, particularly in sub-Saharan Africa. UNAIDS (2001) indicated that no nation of the world is completely immune against the danger posed by the ravaging pandemic. It is estimated that about 21.8 million have died of HIV/AIDS; out which 17.5 million were adults, while 4.3 million were children under 15 years. Similar to the assertion of UNAIDS is the finding of Pelizer, Mpofu, Baguma and Lawal (2002), who reported that 95% of the 13.2 million children orphaned by AIDS live in Africa; while on the whole, an estimated 25.3 million infected people live on the continent, with an average of about 16,000 infections a day.

The trend in research suggests that there exist sex differentials in HIV infections and knowledge. Globally, women account for 48% of adults who are infected with HIV/AIDS, and in sub-Saharan Africa, where HIV is spreading through heterosexual activities, women account for 55% of adults infected with HIV (UNAIDS, 2001). Infection rates in young women are far higher than that in young men. Average rates in teenage girls is said to be about five times higher than in teenage boys. In a similar study, O'Leary, Goodhart, Jemmott, and Boccher-Lattimore (1992) found that women had higher perceived self-efficacy for practicing safer sex and sexual history taking than men. Men were more apt to partake in risky sexual behaviour under the influence of drugs than women. Similarly, according to Madhok, McCallum, McEwan, and Bhopal (1993), women seem to be more knowledgeable about the dangers of HIV/AIDS and take steps to reduce their risk of HIV infection. This assertion was corroborated by the findings of Myer and Clement (1994), who reported that women have a more positive attitude toward condom use for the purpose of preventing infection.

Studies have also revealed that the group with the highest risk of HIV infection are the young adults, between ages of 25 and 45 years. A major consequence of this trend is that countries are being robbed of their productive labour force with attendant
consequences of lowered productivity, poverty and generational vacuum. The Nigerian experience indicates that, in spite of the efforts of agencies and organizations to stem the tide of the HIV pandemic, a lot more still needs to be done, considering the report that 2.6 million people were living with the virus as at 2005 (Olapegba, 2010). It should be noted that this figure represents the reported cases from hospital and allied establishments, while excluding those without access to medical diagnosis and attention.

Many factors combine to make the HIV pandemic and efforts at stemming it a thorny issue in sub-Saharan Africa and other developing countries. These have been said to include: poverty, corruption, wars, political instability, gross illiteracy, lack of appropriate knowledge of HIV, among others. A major concern in the HIV/AIDS situation is the issue of knowledge of what the pandemic is about, the routes to infection and how it can be effectively controlled. Quite a large percentage of people in Africa and Nigeria in particular still engage in HIV risky behaviours without adequate consideration for the effect on their persons. Similarly, the lack of adequate/appropriate knowledge of HIV-related issues keep manifesting in various forms, and as a result, compounding the problem. For example, there is the belief in some areas that having sexual intercourse with a virgin is a cure for HIV/AIDS. In places where this belief is prevalent, increase in the rate of the infection becomes unavoidably higher; this is coupled with other social vices like rape and incest. One other consequence of inadequate/inappropriate knowledge of HIV/AIDS has to do with seeking medical help. The pandemic is still considered in certain places as a spiritual problem that requires spiritual solutions. This has led to people not seeking medical help until it is too late. Also, inadequate knowledge of HIV has been implicated in the stigmatization and discrimination of People Living with HIV/AIDS (PLWHA), even among the educated and oftentimes in health care delivery. The consequence of this is that PLWHA become unwilling to disclose their status and go for medical help.

Experience has shown that many young adults at risk of HIV infection do not yet recognize their susceptibility, perceive the seriousness of the AIDS threat, and do not have enough motivation to alter HIV risky behaviours. In a survey of 5,514 college students, MacDonald, Wells, Fisher et al (1990) found that only 15.6% of sexually-active young women and 25% of sexually-active young men reported always using condoms in sexual relationships.

In Nigeria, Fabiyi (1993) reported that a majority of students sampled had already heard of HIV/AIDS from news papers, magazines and other mass media; however, lots of undergraduates still engage in HIV risky behaviours. This observation was corroborated by Aspinwall, Kemeny, Taylor, Schneider and Dudley (1991), who reported that people generally have moderate level of knowledge about the transmission and prevention of HIV/AIDS, though with a great deal of misconception.

Singh et al (1997) reported that although students were reasonably knowledgeable about the role of sexual contact, blood transfusion, infected needles and vertical transmission, they exhibited some forms of misconceptions about the transmission of HIV through casual contact - 57% of the respondents thought that AIDS was preventable by vaccine, while 51% believed AIDS was curable. In the same vein, Oladepo and Brieger (1994) reported that 90.6% of the sample participants were familiar with the term HIV/AIDS and 58.7% knew that AIDS was caused by a virus. However, a majority of them believed AIDS could be transmitted through kissing, hugging and shaking of hands. Okeke and Fortune (1992) found that although most students knew that HIV could be transmitted through vaginal and anal sex, blood transfusion and by sharing needles with HIV-
infected drug users, yet, only few students knew that HIV cannot be transmitted by sharing clothing, sneezing and coughing, sharing of drinking glasses, shaking of hands, hugging, kissing, and from swimming pools.

Similarly, Baggaley, Drobniewski, Pozniak, Chipanta, Tembo and Godfrey-Fausett (1997), Deshmukh et al (1998) and Harding et al (1999) found respondents to be quite knowledgeable about transmission of HIV through semen, blood and vaginal fluid. However, a significant number believe that saliva transmits HIV, and many still engage in unprotected sex. Conversely, Chakaraborty, Anthony, and Bristol's (1996) survey of the awareness and attitude of HIV/AIDS among students living in India and their counterparts that had migrated from India to the US, revealed that a majority of both groups felt that their knowledge was inadequate.

From the foregoing, it becomes obvious that the knowledge of HIV and its mode of transmission are not as universal as it should be to significantly impact control of the pandemic. In this study, the components of HIV risk-taking behaviour will include unprotected anal and vaginal sex, multiple sexual partners, indiscriminate drug injection, tattooing with unsterilized needles etc. Meanwhile, HIV knowledge was operationally-defined as the correctness of information a person has concerning HIV and its modes of transmission, while perceived risk of HIV is defined as the perception a person has towards himself of being prone to contracting HIV. Basically, this study was concerned with the extent to which knowledge of HIV and perceived risk of susceptibility by individuals will impact on HIV risk-taking behaviour among undergraduate students in the University of Ibadan.

A major theoretical framework through which HIV risky behaviour and perception has been explained is the AIDS Risk Reduction Model by the Washington State Department of Health, HIV Prevention and Education Services (2009). The model sees change as the process individuals must go through with different factors affecting movement. This model is divided into three stages, aimed specifically for the context of HIV perception. The first is the labelling state, in which people must label their actions as risky for contracting HIV. This entails that they have a knowledge of HIV, perceive themselves as susceptible to HIV infection, and believe that it is undesirable. The next stage involves making a commitment to reduce high-risk sexual contacts and to increase low-risk activities. Lastly, the enactment stage, where people seek information, obtain remedies, and enact solutions. This theory explains to a great extent how people can resolve problems, but it has a clause that the further an intervention helps clients to progress on the continuum, the more likely they are to exhibit changes. Looking at the above, a problem of whether or not a person can go through the continuum arises because people might have knowledge of HIV transmission and prevention, but might not perceive themselves as being susceptible to HIV. This will hinder proper movement through the continuum. In other words, perception is central to the choice an individual makes as to whether or not to engage in a particular behaviour.

The Health Belief Model (Rosenstock, 1966) can also explain the link between perception of risks and engaging in HIV risky behaviour. According to this model, a person is understood by two factors: the degree to which the person perceives a personal health threat and the perception that a particular health practice will be effective in reducing that threat. The perception of a personal health threat is itself influenced by at least 3 factors: general health values, which include interest and concern about health; specific beliefs about vulnerability to a particular disease, and beliefs about the consequences of the disease, i.e., whether or not they are serious.
Thus, a person may stop HIV risky behaviour if he/she values health, feels threatened by the risk of HIV, and perceives that the threat of HIV is severe. This model predicts the practice of preventing HIV risky behaviours (Aspinwall, Kemeny, Taylor, Schneider and Dudley, 1991). This indicates that healthy beliefs could be modest determinants of intentions to engage in less risky behaviours, while pursuing acceptable healthy behaviours.

Meanwhile, some researchers have disputed the competence of the Health Belief Model in predicting health-related behaviours. The major argument against the model was that different questions are used in different studies to tap the same beliefs; consequently, it is difficult to compare results across studies. In addition, Kirscht and Joseph (1989) were of the view that factors other than health beliefs are also said to heavily influence the practice of health behaviour. These factors, according to them, include: social influences, cultural factors, experience with a particular health behaviour or symptom, and socioeconomic status (SES). In spite of this criticism, however, there still seems to be a consensus that the Health Belief Model is about the best framework explaining preventive health behaviours of people who are knowledgeable about health matters. One prominent theory that directly links health attitudes to behaviour is the Theory of Reasoned Action (Fishbein and Ajzen, 1975). This theory follows the popular assertion that attitudes to a very great extent predict behaviour. In relating the theory to health issues, it is proposed that a health behaviour is a direct result of a behavioural intention (attitude). Behavioural intentions are made up of two components: attitudes toward the action and the subjective norms about the appropriateness of the action. Attitudes toward the action are based on beliefs (cognitive, affective and behavioural) about the likely outcomes of the action, and evaluations of those outcomes. Subjective norms are derived from what one believes others think one should do (normative beliefs) and the motivation to comply with those normative references. These factors combine to produce a behavioural intention, and ultimately, behaviour change. The crux of the reasoned action theory is that behavioural intentions are measured at a very specific, rather than at a general level (specific attitudinal measurement for specific attitude objects). Inclusion of the normative component in the theory is also an important element in that normative influences are known to have such a profound effect on health behaviours.

It was hypothesized that high knowledge of HIV will significantly reduce HIV risk taking behaviours, and a heightened perceived risks of HIV will significantly hinder HIV risk taking behaviours.

**Method**

**Design/Participants**

This is a cross-sectional survey among undergraduate students of the University of Ibadan. Participants were made up of 268 (154 male and 114 female) undergraduates in 200 level across the different faculties in the university. The 200 level students were targeted because they are a sort of bridge between the freshmen and the stale. The age range was between 16 and 33 years, with a mean of 21.86 and standard deviation of 3.10.

**Measures**

A 4-section questionnaire was used in this study. Section A contains information regarding the study, informed consent request, confidentiality of identity and, demographic information. Section B is an 18-item Likert format HIV Knowledge questionnaire, adapted from the HIV Knowledge Questionnaire for Adolescent Girls HIV-KQ authored by Morrison-Beedy et al (2001) (Morrison-Beedy et al, 2003). A Cronbach's alpha of .91 was reported, while revalidation for this study yielded coefficient alpha of .66 and split-half reliability of .55. Section C is the perceived risk of HIV measure. It is a 19-item Likert format scale developed by Lux and Petosa (1994-
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1995), and modified for this study. The items measured issues such as health belief concerning HIV/AIDS, perceived susceptibility, perceived severity, perceived benefits, and perceived barriers of particular behaviours. The scale has a Cronbach alpha of .61, while the revalidation yielded a Cronbach alpha of .87. Section D is a HIV risk-taking behaviour questionnaire designed by Smith et al (1996) with coefficient alpha of .75, and follow-up alpha of .77; revalidation yielded an alpha of .78.

Procedure
Approval for the conduct of the study was given by the Ethics Committee of the Department of Psychology, University of Ibadan. This study was conducted in two stages: the pilot study and the main study. The pilot stage involved a pre-field administration of the scales for cultural revalidation, followed by item analysis to determine the reliability of the measures statistically. The measures were thereafter taken to the field and administered to respondents across the various faculties in the University of Ibadan. The respondents' informed consent was sought and they were assured that their identity and responses will be anonymous. The survey was completed within two weeks, followed by data analysis.

Statistical Analysis
The hypotheses were analysed using the t-test of independent means.

Results
Results in table 1 indicated that there was a significant difference in the HIV risk taking behaviours based on the knowledge of HIV (t=2.17; df=266; P < .05). This means that respondents with a significant low level of HIV knowledge have a higher tendency of engaging in HIV risk-taking behaviour, thereby confirming the stated hypothesis. The table further revealed that there was a significant difference in HIV risk-taking behaviours as a result of the perceived risk of HIV (t=3.53; df=266; p > .05). This means that respondents with lower perceived risks of HIV engaged more in HIV risky behaviour than those with heightened or higher perceived risk of HIV. This finding also confirmed the second part of the hypothesis stated.

Table 1. Summary of t-test showing the difference in HIV risk-taking behaviours based on the knowledge of HIV and difference in HIV risk-taking based on perceived risk of HIV

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>HIV Knowledge</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Low</td>
<td>117</td>
<td>25.61</td>
<td>6.46</td>
<td>266</td>
<td>2.17</td>
<td>&lt; .05</td>
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<tr>
<td>High</td>
<td>151</td>
<td>18.50</td>
<td>4.80</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Perceived Risk of HIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>162</td>
<td>27.31</td>
<td>6.40</td>
<td>266</td>
<td>3.53</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>High</td>
<td>106</td>
<td>21.14</td>
<td>8.32</td>
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</tr>
</tbody>
</table>

Discussion
The main objective of this study was to examine HIV risk taking behaviour among undergraduates as a consequence of knowledge of HIV and the perceived risk of HIV. The working assumptions were that knowledge of HIV that an individual possesses will significantly affect the involvement in HIV risky behaviours. And also, that the perceived risk of HIV, whether heightened or lowered, will also significantly influence the HIV risk-taking behaviours of individuals. In pursuit of the research objective, two hypotheses were derived to examine the influence of the perceived risk of HIV and the knowledge of HIV on the HIV risk-taking behaviours of individuals. The findings showed that there was a significant difference between the HIV risk-taking behaviours of individuals as a result of the knowledge they had of HIV. Therefore, the reduction in the HIV risk-taking behaviours of people was consequent on the level of knowledge of HIV. This result therefore affirms that the possession of adequate and appropriate knowledge of HIV will significantly reduce HIV risk-taking behaviour among undergraduates. This means that the
higher the knowledge of HIV the lower the individual’s involvement in HIV risky behaviours. This finding is in line with that of MacDonald et al (1990), Olapegba (2010) and Fabiyi (1993), who reported that lack of adequate knowledge of HIV will increase the likelihood of engagement in high HIV risky behaviour. Similarly, Madhok et al (1993) and O’Leary et al (1992) affirmed that women have higher knowledge of HIV/AIDS-related issues and, as such, exhibit higher perceived self-efficacy for practising safer sex, and take more active steps to reduce their risk of HIV infection. Furthermore, Olapegba (2010) asserted that inadequate knowledge of HIV/AIDS is one of the factors leading to stigmatization and, consequently, increased spread of the virus. In this regard, the importance of adequate and appropriate knowledge of HIV in reducing the spread of the pandemic is underscored. 

Results from this study also revealed that the perceived risk of HIV has a significant effect on HIV risk-taking behaviours. There was a significant difference in the HIV risk-taking behaviours of people based on the perceived risk of HIV. Respondents with a significantly higher perceived risk of HIV will tend to avoid engagement in HIV risky behaviours, while a significantly lowered perceived risk of HIV will increase the HIV risk-taking behaviours of people. This particular finding has support in the AIDS Reduction Model of the Washington State Department of Health, HIV Prevention and Educational Services (2009). The model concludes that when people perceive that their line of action carries a high risk factor, they are likely to desist from such actions. Invariably, people who consider HIV as high risk and potentially dangerous will more likely avoid HIV risky behaviours. In the same vein, the Health Belief Model also corroborates the findings of this study. The degree to which a personal health threat is perceived and the perception that a particular course of action will be effective in reducing the threat will most likely inform a significant reduction in involvement in HIV risky behaviour. Therefore, to reduce the scourge of HIV, psychologists should try and work at heightening the perceived risk of HIV among university students.

It may be safe to conclude that there exist links between HIV risk taking behaviour, knowledge of HIV, and perceived risk of HIV infection among undergraduates. The overall picture is that for any significant reduction in risky behaviour and enhancement of safe practices in preventing HIV spread, massive awareness and knowledge-focussed enlightenment campaigns should be institutionalized. In addition, attitudinal change programmes aimed at heightening the perceived risk of HIV should be designed and implemented consistently.

Along this line, the recommendation of Costin et al (2002) comes handy, that health and social workers who engage in HIV/AIDS prevention and counselling have more work to do at equipping students with important information about the disease. To achieve this, counsellors and psychologists may consider partnering with health educators to provide training for school counsellors, as they would be expected to assist in educating the students, the staff, and the entire university community about HIV/AIDS. They could also organize a seminar on the transmission of HIV/AIDS. This is most likely going to help school counsellors come to a clearer understanding of how HIV/AIDS can be transmitted, and the effective ways to protect oneself from infection.

Finally, it is also suggested that future endeavour in this area should consider a more diverse sample, and the use of an experimental method to investigate the issue will be of added value, making it possible for a precise causal effect to be attributed.

References
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Biographical Note

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