Research Article

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Perceived Risk of HIV Infection and Risky Sexual Behaviours among High School Students in Central Kampala, Uganda

Namwiyiri Rogers[1*], Kobusingye Loyce Kiiza[1], Asatsa Steph[2] and Kibedi Henry[3]

[1]*Makerere University, Uganda*
[2]*Catholic University of East Africa, Kenya*
[3]*Kyambogo University, Uganda*

***Correspondence to:** Namwiyiri Rogers[1*], Kobusingye Loyce Kiiza[1], Asatsa Steph[2] and Kibedi Henry[3]; [1]Makerere University, Uganda; [2]Catholic University of East Africa, Kenya; [3]Kyambogo University, Uganda; E-mail: rogersnamwiyiri@gmail.com

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ABSTRACT

Background:

The study aimed at examining the relationship between perceived risk of HIV infection and risky sexual behaviors among high school students in the central division of Kampala. Out of a total population of 400 adolescents in high school for two schools, a sample of 196 participants was selected using the simple random sampling technique at the advanced level of secondary education in two secondary schools in Central Kampala.

Methods:

This study adopted a purely quantitative study approach, which took a cross-sectional and correlational survey design. A self-administered questionnaire was used in the data collection. Collected data were further coded and analyzed with the help of the Statistical Package for Social Science.

Results:

Descriptive statistics showed that half of the respondents. Results indicated that there was a statistically significant negative relationship observed between perceived risk of HIV infection and risky sexual behaviors ($r = -.234^{**}$, $p = .001 < 0.01$).

Conclusions:

It was concluded that education on reproductive and sexual health, with emphasis on the consequences of engaging in risky sexual behaviors, should be included in the delivery messages and strategies for tackling those factors influencing risky sexual behaviors. This may help the adolescents in high school in their daily decision-making and avoid engaging in risky sexual behaviors.

Keywords: Perceived risk of HIV Infection; Risky Sexual Behaviours; High school Students; Adolescents

INTRODUCTION

The deaths related to HIV and AIDS do not exclude the adolescents still going to school (World Health Organization, 2020) [1]. Human immunodeficiency virus remains the leading cause of deaths among people around the globe with no cure at all, and this is fueled by acquired immunodeficiency syndrome-related diseases like tuberculosis and malaria, among others UNAIDS [2]. Worldwide, by the year 2016, about 36.7 million persons had human immunodeficiency virus, followed by 1.8 million new infections and 1 million acquired immunodeficiency syndrome-related deaths (UNAIDS, 2017). Adolescents are individuals ranging from 10 to 19 years, and they contribute much to the global HIV infections and deaths, most especially in Sub-Saharan Africa due to their curiosity about sexual matters (WHO, 2014) [3].

Among the individuals who may consider themselves at risk of HIV infection are adolescent students and adults, especially married couples [4]. This was attributed to their exposure rate to people living with HIV. The perception of HIV infection looks at the extent to which one believes that he can be infected with HIV [5].

Perception of being at risk of getting HIV among students includes low risk and high risk of HIV. On the other hand, risky sexual behaviors simply include all activities that do expose a given person to a risk of contracting sexually transmitted diseases, HIV inclusive. Risky sexual behaviors involve having multiple sexual partners, having unprotected sex, and having cross-generational sex partners, among others [6].

In Uganda, adolescent students contribute to the large number of HIV infections, since they are among the most curious and active sexual age groups battling with HIV [7], UHRN [8]. These findings have led to the design of interventions on how to curb the HIV infection rates in Uganda, like abstinence and condom use by adolescents. In Uganda, a country in Sub-Saharan Africa, HIV transmission and infection rates still remain at 6%, most especially among adolescents of 15-21 years, despite the government's attempt to control new HIV infections and registered success in previous years UPHIA [9].

Ugandan adolescents continue to engage in risky sexual behaviors, leading to continued new infections and deaths on a daily basis in Uganda [10]. Few researchers have studied HIV risk perception among adolescents in Uganda [11]. Therefore, the current study sought to explore the relationship between peer pressure, risky sexual behaviors, and risk perception of HIV infection among high school students in selected schools of central Kampala.

Du et al. mentioned that although risky sexual behaviors are a major concern, sexual engagement is generally not very common among Chinese university students [12]. They added that higher-income university students who are not straight and who are younger when they have their first sexual experience are more likely to participate in risky sexual behaviors [13]. However, Du et al. focused on factors influencing risky sexual behaviors.

This study gap was closed by the current study considering perceived risk of HIV and risky sexual behaviors. Low perceived risk of HIV infection among high school adolescents influences them to engage in risky sexual behaviors, putting them at risk of HIV infection, unlike high perceived risk of HIV infection, which limits the adolescents' engagement in risky sexual behaviors. However, Oharume considered polytechnic adolescents, and this research gap was filled by considering high school adolescents.

The possibility of adolescents getting infected with HIV and factors leading to the infections in Africa need to be well investigated, and how adolescents' HIV risk perception affects their engagement in risky sexual behaviors requires immediate intervention. This is why Africa is still experiencing high HIV infection rates and deaths among adolescents [14]. For instance, Tanzania, Botswana, and Uganda, as countries in Sub-Saharan Africa, lost a number of adolescents due to their compromised perception about HIV infection in relation to participation in risky sexual behaviors [15].

It also has been asserted that once adolescent students do believe that HIV risk infection is not a major problem or urgent issue to deal with, they heavily engage in risky sexual behaviors, contracting HIV [16]. Also to note, adolescent students who engage in risky sexual behaviors compromise their perceived risk of HIV infection [17]. The risk of HIV infection among adolescents is very high; by 2017, the Ministry of Health of Uganda reported 110,000 cases of adolescents who had contracted HIV in the country, and this was linked to failure to use condoms by adolescents or having unprotected sex, multiple sexual partners, and others MOH [18].

This has contributed to the stigma of HIV-positive adolescents who turn to the use of substances and having many partners whom they can infect as coping mechanisms [19]. Additionally, HIV-positive adolescents in school experience challenges of stigma, discrimination, and depression, among others, which affect their school learning process [20]. Adolescents in Western Uganda reported that the discrimination, stigma, and financial challenges have made them not study, some of whom mentioned that their teachers also do not allow the HIV-positive students to interact freely with other students at school, which affects their self-esteem [21].

The Ugandan government has introduced sexuality education in schools to end the teenage pregnancies and HIV infection by encouraging school adolescents to use condoms [22]. This aims at enabling students to complete their studies. The AIDS Support Organization Uganda is doing all that is necessary to ensure that adolescents who have got HIV have access to medication and improve their psychological well-being through providing counselling services.

TASO also includes community and family members in the fight against HIV [23]. However, there is still scanty information about the relationship that exists between perception of HIV infection and risky sexual behaviors among high school adolescents in Uganda, particularly central Kampala, which this study aimed to explore.

MATERIALS AND METHODS

Research Design

A quantitative approach was used, and it took a correlational and cross-study design, which was conducted among high school students in the central division of the Kampala district to establish whether there is a significant relationship between risk perception of HIV infection and sexual risk behaviors among high school students. It was correlational because it sought to establish the relationship between perceived risk of HIV infection and risky sexual behaviors. It was also cross-sectional due to the fact that there was a need to compare many different variables at the same time, for example, age and risky sexual behaviors, and determine if exposure to risky sexual behaviors might correlate with particular outcomes like the belief of being at risk of HIV infection.

Study Population

The target population was high school adolescents in central Kampala secondary schools. They included both male and female with the age group of 16-21 years. sample Size and Sampling Techniques.

Through purposive sampling, two schools were selected because they were easily accessible, and simple random sampling was

used for selecting participants since it promotes equal selection of both male and female adolescent students. The adolescents were selected based on the target group for the study. Using the Krejcie and Morgan table of sample size determination, out of the 400 students according to the Kampala Capital City register, only 196 students were considered as participants.

Data Collection Methods

The researcher used the questionnaire method of data collection and adopted standardized instruments used by other researchers. A self-administered questionnaire containing three sections was used as an instrument for data collection, with the intention of generalizing a sample to the population [24]. The self-administered questionnaire comprised of perception of HIV infection scale and the sexual risk behaviour scale.

Study Variables and Measurements

The HIV Infection Perception Scale by Kendi [25] was studied in Kenya with fourteen (14) items and had obtained Cronbach's alpha of $\alpha = 0.717$, with Likert scale options of Strong Disagree = 1, Disagree = 2, Not Sure = 3, Agree = 4, and Strongly Agree = 5, and the risky sexual behaviors scale by Abiodun [26] had six (06) items and obtained Cronbach's alpha of $\alpha = 0.85$, with Likert scale options of Always = 4, Sometimes = 3 =3, Occasionally = 2, and Never = 1.

Validity

Content validity was established at the design stage by Brown, Clasen, and Eicher [27]. Kendi (2010) and Abiodun (2013) also established the content validity of the peer pressure scale, the perceived risk of HIV infection scale, and the risky sexual behavior questionnaire, respectively.

The items were also in line with the Ugandan sex education syllabus for secondary schools. Expert judgment was also sought from the supervisors and qualified personnel in the area of peer pressure, perceived risk of HIV infection, risky sexual behavior, and research. The questionnaire for this study was subjected to a pretest to ensure that items in the instrument were stated clearly and had the same meaning to all respondents.

The face and content validity of the research instrument were ensured by comparing its items with previous similar studies and by matching them with stated objectives and the formulated research hypotheses. Besides, copies of the prepared questionnaire were made available to the research supervisor for vetting, review, critiquing, and necessary amendment and corrections. The questionnaire was written in simple English and was not translated, since English is the language of instruction in secondary schools. At least high school students are able to read information presented in English.

Reliability

Reliability refers to the degree to which a research instrument yields consistent data after repeated trials. The questionnaire was pilot tested among 20 students at Makerere Highway College not selected for final data collection, and all with alpha coefficients above 0.70, the instruments were presumed to be reliable. Kendi (2010) estimated the reliability of perceived risk and obtained Cronbach's alpha of $\alpha = 0.717$. Abiodun (2013) also estimated the reliability of risky sexual behavior and obtained Cronbach's alpha of $\alpha = 0.85$.

To ensure reliability of this study, the instruments were pretested on a sample of (20) high school students in Kampala at Makerere Highway College. After the pretest, data was analyzed using SPSS, and a reliability test was run to obtain Cronbach's alpha coefficients. After analysis of the pilot study data, the perceived risk of HIV infection was obtained. 741 Cronbach's Alpha and risky sexual behavior had .842 Cronbach's Alpha.

Research Procedure

The researcher obtained a letter of introduction from the School of Psychology at Makerere University. He then approached the respective head teachers of selected secondary schools in Central Kampala to be granted permission to meet students of Senior Five and Senior Six in their classrooms. The researcher also then met target students and explained to them the purpose of the study, with emphasis on voluntarism, confidentiality, and honesty. He emphasized to participants that private information obtained shall be kept secret and destroyed after use and encouraged them to use pseudonyms on consent forms.

The first 196 participants, both female and male, who volunteered to enter the study at both schools were asked to take the consent forms to their parents or guardians to get permission from them before participating in the study. The participants were scheduled for filling out the self-administered questionnaires with the researcher after consent from the parents or guardians had been obtained. The exercise of filling questionnaires was conducted over a period of two days in each of the two participating schools with proper guidance of participants by the researcher. In this manner a 100% return of the questionnaires was attained for the study.

Ethical Aspects

At the onset of data collection, the researcher sought permission from the top management of the two schools to carry out the study. In addition, the researcher also sought consent from the target sample. The respondents were further assured of the confidentiality of the information provided and that the study findings would be used for academic purposes strictly, and after data entry, all papers containing information were to be destroyed.

The respondents were further assured of their personal protection and that they had the authority to refuse or accept to participate in the study. In other words, the researcher ensured the right to privacy and dignity of the respondents.

RESULTS

The study obtained a hundred percent response rate. The study had a total sample of 196 participants; of these, half of them were females who participated in the study. The findings of this study are presented as seen below:

	Frequency	Percent (%)
Name of School		
Kololo High School	98	50%
Kampala High School	98	50%
Gender		
Male	103	52.60%
Female	93	47.60%
Age Group		
16 – 18 years	46	23.50%
19-21 years	150	76.50%
Religious Affiliation		
Catholic	48	24.50%
Protestant/Anglican	36	18.40%
Muslim	72	36.70%
Others	40	20.40%
Class of the Respondents		
Senior 5	109	55.60%
Senior 6	87	44.40%

Table 1: Demographic Characteristics of the Respondents

The study findings of table 1 above indicate that demographic results also indicate that more males than females participated in the study. Also, the results indicate that the majority of the participants were in the range of 19-21 years compared to participants aged 16-18 years. This means that the selected schools for the study had more males than females and only included those of 19-21 years who were willing to participate in the current study.

S.No	Perceived Risk of HIV Infection items	Disagree		Neutral		Agree	
		N	%	N	%	N	%
1	I am confident in my ability to protect myself against HIV/ AIDs	23	11.8	11	5.6	162	82.6
2	I don't think I am the kind of the person who can get HIV	60	30.6	31	15.8	105	53.5
3	I am glad that HIV/AIDs is among drug users, prostitutes	88	44.9	24	12.2	84	42.9
4	HIV/AIDs is a disease for adults not people like me	142	72.4	13	6.6	41	20.8
5	I know differences between risky	13	14.2	29	14.8	154	78.6

	sexual behaviours and safer sex						
6	I would decline a blood transfusion because of the risk of contracting HIV/AIDs	68	34.27	42	21.4	86	43.9
7	I am likely to be raped by a stranger who is HIV positive	126	64.3	29	14.8	41	21
8	Even if I have sex without a condom I don't get HIV	140	71.4	23	11.7	33	16.8
9	I am terrified at the thought that I may have been exposed to HIV/AIDs due to risky	109	55.6	27	18.9	50	25.5
10	HIV/Aids is not a big problem as the media	134	68.4	26	13.3	36	18.4
11	I am not likely to abstain from sexual contact	122	62.2	26	13.3	48	17.7
12	My boyfriend/ girlfriend cannot infect me with HIV/ AIDs because I trust him/her	109	55.6	27	18.9	50	25.5
13	When a member of the family gets HIV I am willing to care of him/her	29	10.1	16	8.2	161	82.1
14	I am likely to get HIV because I have many sexual partners	123	62.7	17	8.7	56	28.6

Table 2: Frequency of Perceived Risk of HIV Infection

The results of table 2 above also indicate that most respondents reported that they are confident in their ability to protect themselves against HIV/AIDS, followed by those who stated that when a member of the family gets HIV, they are willing to take care of him/her. However, half of the respondents reported that they are terrified at the thought that they may have been exposed to HIV/AIDS due to risky behavior.

Results further show that half of the respondents reported that HIV/AIDS is still a problem, as the media suggests. This finding indicates that most respondents had a high perceived risk of HIV infection.

S.No	Items	Always		Sometimes		Occasionally		Never	
		N	(%)	N	(%)	N	(%)	N	(%)
1	I have taken alcohol heavily before having sex in the last 3 months	5	2.6	2	1	2	1	2	1
2	I have engaged in sexual activity with someone not of my age in the last 3 months.	11	5.6	11	5.6	11	5.6	11	5.6
3	I have had sex with a casual friend I met for the first time in the last 3 months.	9	4.6	19	9.7	19	9.7	19	9.7
4	I have had sex with someone more than one time apart from my primary partner without condoms in the last 3 months.	12	6.1	16	8.2	16	8.2	16	8.2
5	I did not use condom at my last sex in the last 3 months.	14	7.1	10	5.1	10	5.1	10	5.1
6	I have had sex with a partner with intravenous drug use (i.e. syringe) or on heavy alcohol use in the last 3 months.	6	3.1	4	2	4	2	4	2

Table 3: Frequency of Risky Sexual Behaviours

The study findings of table 3 indicate that most respondents reported that they had never had sex with a partner with intravenous drug use (i.e., syringe) or heavy alcohol use in the last 3 months, followed by those who stated that they have never taken alcohol before having sex. This was followed by those who pointed out that they had never engaged in sexual activity with someone not of their age in the last 3 months. And the next group also reported that they had never had sex with a casual friend they met for the first time. These findings imply that few adolescents among the sampled study population do engage in risky sexual behaviors

		Perceived Risk of HIV Infection	Risky Sexual Behaviours
Perceived Risk of HIV Infection	Pearson Correlation	1	-0.234**
	Sig. (2-tailed)	–	0.001
	N	196	196
Risky Sexual Behaviours	Pearson Correlation	-0.234**	1
	Sig. (2-tailed)	0.001	–
	N	196	196

Note: Correlation is significant at the 0.01 level (2-tailed).

Table 4: Correlation between perceived risk of HIV infection and Risky Sexual Behaviours

The results in table 4 above indicated that there was a significant negative/inverse relationship between HIV infection perception and risky sexual behavior among the adolescents (r = -.234**, p = .001 < 0.01). This meant that when there is an increase in belief of HIV infection in this particular population, it is related to a decrease in risky sexual behaviors to a significant extent. Therefore, when adolescents believe they are at high risk of HIV infection, they are more likely to avoid engaging in risky sexual behaviors.

Discussion of Findings, Conclusions and Recommendations

Perceived Risk of HIV Infection and Risky Sexual Behaviours

The second hypothesis stated that there is no statistically significant relationship between HIV infection perception and risky sexual behavior among the adolescents. However, results emanating from the current research indicated that there was a significant negative relationship between HIV infection perception and risky sexual behaviors among the adolescents. This means that when there is an increase in HIV infection perception in this particular population, it is related to a decrease in risky sexual behaviors, to a significant extent. Consistent with the current study results, Du et al. (2021) mentioned that although risky sexual behaviors are a major concern, sexual engagement is generally not very common among Chinese university students. They added that higher-income university students who are not straight and who are younger when they have their first sexual experience are more likely to participate in risky sexual behaviors.

This current research finding is supported by Oharume (2020), who stated that when high school students perceive themselves not at risk of HIV infection or have a low perceived risk of HIV infection, the chances are very high that they may engage in risky sexual behaviors, which puts them at risk of HIV infection. However, those that do believe that they can be infected with HIV, in most cases the majority of them, do not engage in risky sexual behaviors. Still In agreement with the current study, Ngure et al. [28] stated that young Kenyan women's perceptions of HIV risk were dynamic and impacted their use of condoms over time, indicating a frequently intentional approach to sexual health and HIV prevention.

Still in agreement with the current study, Rukundo, Muwonge, Mugisha, Aturwano, Kasangaki, and Bbosa (2016) reported that once adolescent students do believe that HIV risk infection is not a major problem or urgent issue to deal with, they heavily engage in HIV risk sexual behavior, contracting HIV. Consistent with the current study findings (Musiime & Mugisha, 2015) reported in Uganda, adolescent students contribute to the large number of HIV infections, since they are among the most curious and active sexual age groups battling with HIV. It was concluded that since there was a significant negative relationship between HIV infection risk perception and sexual risk behaviors among adolescents, hypothesis two was rejected.

Limitations

As with all empirical research, this study has limitations, and the findings should therefore be interpreted with this in mind. The most important of these are discussed here. The sample size was small (N=196). The study can be strengthened by increasing the sample size, as the results of the data analyses and findings may vary substantially when the sample size is increased.

The study was conducted among A-level students only, which limits the generalizability of the results to other school-going adolescents. For a more robust analysis, it was suggested that this research study be replicated with adolescents of O' level.

This study was designed to draw understanding from observations in a here-and-now (cross-sectional) time period and not over an extended period (longitudinal). As such, conclusions are based on an analysis of results at a static point in time. Whatever effect any other dynamics present within the school at this point in time might have had on the results may therefore not have been picked up in the information presented in the results.

The study focused on the influence of peer pressure on risky sexual behaviors and did not focus on the influence of mass media, drugs, and alcohol on adolescents' risky sexual behaviors because it was found influential in literature. This, therefore, has been put under areas for further research.

With the aspect of risky sexual behaviors being so sensitive, some students feared sharing information due to stigma. This was cleared by assuring the participants about the confidentiality of their information and how their data was to be stored in a lockable safe place.

CONCLUSION

These study findings can be used as a basis for a remarkable conclusion. I conclude that my main findings have to do with the perceived risk of HIV infection and risky sexual behavior among high school adolescents.

According to study findings, when adolescents perceive themselves to be at high risk of HIV infection, they are more likely to avoid engaging in risky sexual behaviors. This study recommended that all stakeholders, like curriculum planners, counselors, and educators, should be involved in the designing of curriculum or policy formulation for this vulnerable group (the adolescents), with education on reproductive and sexual health putting emphasis on the consequences of engaging in risky sexual behaviors. Awareness should be created by incorporating sex education into the school curriculum by the Ministry of Education and Sports. This may help the adolescents in high school in their daily decision-making and avoid engaging in risky sexual behaviors.

RECOMMENDATIONS

The results of this study have important implications on the reproductive health of adolescents in secondary schools, and therefore, the following recommendations are suggested:

The school administrators and parents should provide the right information to adolescents about the consequences of risky sexual behaviors. The clear information provided can help to clear the misconceptions about the perceived risk of HIV infection among adolescents.

The Ministry of Education and Sports, school administrators, teachers, community-based organizations, the church, the media, the family unit, and school-based peer groups should make concerted efforts to appeal to high school students to change their risky sexual behaviors.

The government can censor and place sanctions on the media messages, which have the potential of misinforming the adolescents about sexuality issues.

Areas for Future Research

Based on the findings of this research, future research can be conducted in this field in the following areas:

This study was limited to advanced-level students only; future research could be conducted with a sample from an ordinary-level class. This is because the ordinary level also has students in the adolescent stage, though my research was targeting adolescents of advanced level only.

It is recommended that further research be carried out to further investigate the influence of mass media, especially mobile phones (smartphones), on adolescents' risky sexual behaviors. Since this study only focused on the influence of peer pressure on risky sexual behaviors.

Future research could also be conducted among high school adolescents in both private and government secondary schools within the central division of Kampala. This is because my research only focused on government schools as the target, yet private schools could have useful information.

DATA AVAILABILITY STATEMENT

The raw data backing up the summary of this article shall be made accessible by the authors, without any hesitation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the General/Human Research Ethics Committee of Makerere University and the University of The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

NR collected the data for his master's degree research project and was supervised by Dr. Loyce Kobusingye of Makerere University School of Psychology, and NR analyzed the data. All authors contributed to conceptualization and writing.

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