



**Research Article**

**INFLUENCE OF SUBSTANCE ABUSE ON RISKY SEXUAL BEHAVIOURS AMONG UNDERGRADUATE STUDENTS: A CASE OF EGERTON AND KABARAK MAIN CAMPUSES IN NAKURU COUNTY, KENYA**

**Julius Kiprono Langat**

School of Education, Kabarak University, Kenya

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**ABSTRACT**

This study's purpose was to explore the influence of substance abuse on risky sexual behaviours among undergraduate students of main campuses in Nakuru County. Social Learning Theory by Albert Bandura and Person-Centred Theory by Carl Rogers guided the study. The study was carried out among 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> year undergraduate students from main campuses in Nakuru County. The study adopted a correlational research design. The target population was 18570 undergraduate students. The accessible population was 8456 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> year undergraduate students whose sample was 367. Simple random sampling technique was used to select the respondents. The study included a sample of 10 peer counsellors and 2 student counsellors from the Egerton University and Kabarak University main campuses who were selected through purposive sampling. Data were obtained using questionnaire for undergraduate students, focus group discussions guide for peer counsellors and interview schedule for student counsellors. Validation of research instruments was done through peer and expert review and also through pilot testing which was done in Mount Kenya University (MKU) - Nakuru Campus. Both descriptive and inferential statistics were used to analyse quantitative data using SPSS Version 25 whereas the qualitative data was analysed thematically. The analysed data was presented in tables, graphs, and narratives. The researcher considered ethics of confidentiality and informed consent. The findings indicated that majority of undergraduate students perceive that the use of alcohol, marijuana, cocaine, and injectable steroids could lead to risky sexual behaviours.

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**INTRODUCTION**

Risky sexual behaviours have become a predicament all over the world affecting youth and may lead to sexually transmitted diseases and unintended pregnancies (Amaranganie, Perera, & Abeysena, 2018). According to World Health Organisation (WHO), youth are young people aged between 15-24 years old and studies reported that more than half of all new HIV infections occur among people between the ages of 15 and 24 years where most undergraduate students fall under (Kasahun, Yitayal, Girum & Mohammed, 2017). Risky sexual behaviours can have major effects on undergraduate students' experiences that may include negative academic performance, inability to progress through the university academic years, decision to remain at university and overall psychological well-being (Abels & Blignaut, 2011). Young-Powell and Page (2014) attributed risky sexual behaviours to many people viewing university as the best stage of one's life because students are generally thought to have more free time, more parties and more sex.

A research that was done in the USA found that 92% of men and 77% of women undergraduate students had masturbated, and on their lifetime experiences and frequency of recent experiences that most participants reported experience with accessing sexual information (89.8 %) and sexual entertainment (76.5 %) online. Almost half (48.5 %) reported browsing for sexual products, and a substantial minority (30.8%) reported having engaged in cybersex (Döring & Pöschl, 2018). In Denmark 97.8% of males and 79.5% of females watched pornography among 1002 people aged from 18–30 years old (Hald,2006).

In Asia, researchers have noted that while university students are potential human resources, this population group is particularly involved in health risk behaviours and preventing risky sexual behaviours among them would contribute to prevention of HIV, sexually transmitted infections (STIs), and unwanted pregnancies, which have posed a great burden on population health (Yi, Te, Pengpid, & Peltzer, 2018; Zou *et al.*, 2013; Yu, Guo, & Sun, 2013; Yang *et al.*, 2019).

African universities have been called to respond to the social issues of trauma, adversity, injustice and inequality including risky sexual behaviours that trouble their embedding

\*Corresponding author: **Julius Kiprono Langat**  
School of Education, Kabarak University, Kenya

communities, their staff and their students (Coulter, & Rankin, 2017). Several studies particularly in Sub-Saharan Africa have documented high and increasing premarital sexual activities among undergraduate students as they face social, peer and cultural pressure to engage in risky sexual behaviour that may expose them to the risk of unintended pregnancy, early marriage, abortion and STIs/HIV/AIDS (Teferra, Erena, & Kabede, 2015; Amare, Yeneabat, & Amare, 2019; Kabede, Molla, & Gerensea, 2018; Gebresillasie, Tsadik, & Berhane, 2015; Derbie, Assefa, Mekonnen, & Biadlegne, 2016; Berhan & Berhan, 2015; Fetene & Mekonnen, 2018; Onoya *et al.*, 2015). Other studies which were done in Zambia and South Africa concurred that a large number of students were engaging in risky sexual behaviours, such as having multiple sexual partners, inconsistent contraceptives use, and intergenerational sex (Menon, Sidney, Thankian & Lwatula, 2016; Hoque, Ntsipe, & Mokhatle, 2012; Onoya *et al.*, 2015).

In Kenya, Othieno, Okoth, Peltzer, Pengoid and Malla (2015) determined associations between HIV risky sexual behaviour and depression among undergraduate students at the University of Nairobi and found that the percentage of those who had ever been diagnosed with sexually transmitted infections (STIs) was 9.71% (males 8.65%; females 11.01%); and for HIV 3.04% (males 2.02%; females 4.05%), and nearly 30% reported having had multiple partners in the previous 12 months, 27.4% of the students did not use condoms with sexual partners and 21% had engaged in sex after drinking within the previous 3 months (Othieno *et al.*, 2015; Adam, & Mutungi, 2007; Waswa, 2006). Ochieng' (2013) observed that globally, the average age at which young people begin to have sex has steadily decreased. Ssewanyana *et al.* (2018) noted that a lack of research existed around the most common forms of sexual risk behaviours among young people, including their underlying factors and found that transactional sex, early sexual debut, coerced sex, and multiple sexual partnerships were prevalent. In agreement, Kabiru and Orpinas (2008) found that approximately 50% of the males and 11% of females were reported having had sexual intercourse at least once in their lifetime with a significant proportion reporting multiple sexual partnerships.

In Nakuru, Esho, Data, and Muniu (2018) did a study about the risky sexual behaviours among young people and found that it was but natural to exchange the half-baked feelings and experiences with peers and the environment that includes public media has sexually suggestive flavours. The study found that a large number of older adolescents wished that their parents had talked to them about sexual matters.

Psychosocial factors may shape sexual attitudes and behaviour of young people either positively or negatively (Blanc, Byers & Rojas, 2018). Taghreed (2016) examined the social risks university students in Beirut associated with premarital sex, as well as explored the various strategies they employed when dealing with the risks and found that decisions about engaging in, or refraining from, premarital sex were shaped by social pressures and control, and dictated by social norms and moral values. University can be a challenging time for young adults, as many are experiencing life on their own for the first time, adjusting to new lifestyles, new social groups, and new ways

to express their selves (Coulter, Marzell, Saltz, Stall & Mair, 2016).

Substance abuse has been found to influence risky sexual behaviours among undergraduate students (James *et al.*, 2019). Greater attendance at large private parties predicted more frequent intercourse for females in the not drunk or high context, and greater attendance at bars without dance floors predicted more frequent intercourse for males in the drunk or high context (James *et al.*, 2019; Chanakira, O'Cathain, Goyder, & Freeman, 2014; Amaranganie *et al.*, 2018). Alcohol consumption and attending night clubs were associated with risky sexual behaviour among young people (Rice, Lynch, Norris, Davis, Fields, Ervin & Turner, 2016; Herbenick, Fu, Dodge, & Fortenberry, 2018; Mellins, Walsh, Sarvet, Wall, Gilbert, Santelli, Thompson, Wilson, Khan, Benson, Bah, Kaufman, Reardon & Hirsch, 2017).

In Africa, researchers have noted that having sex at early age, having multiple sexual partners, having sex while under the influence of alcohol or drugs and unprotected sexual behaviours are the common characteristics of risky sexual behaviour which increases risk of individuals to sexuality and reproductive health problems among young people (Kabede, Molla & Gerensea, 2017; Tefera, 2015; Abate, Tareke, Tirfie, Semachew, Amare & Ayalew, 2018; Adere, Yimer, Kumsa, & Liben, 2017; Kasahun, Yitayal, Girum & Mohammed, 2017; Choudhry, Agardh, Stafstrom, & Ostergren, 2014; Ware, Tura, Alemu, & Andarge, 2018).

In Kenya, Mangeni, and Mbuthia (2018) noted that substance abuse among university students was a major public health concern and drugs such as tobacco and alcohol are now widely and easily available in the universities. Colleges therefore form the main locus of substance abuse, with more than 40% of students already affected. Othieno *et al.* (2015) noted that younger age, being female; tobacco use and previous diagnosis of STI were significantly associated with inconsistent condom use.

In Nakuru, Boit (2016) noted that the main objective of higher institutions of learning in Kenya was to provide education and growth experiences for its students but alcohol abuse had continued to be a problem in the university campuses that was slowing down their progress and the Kenya vision 2030 that envisages a healthy population free from the impact of alcohol abuse through the reduction of the prevalence and the impact of alcohol abuse disorders in order to attain the highest possible level of physical, social and mental health. The study found out that the prevalence of alcohol abuse among Egerton University students was 21.1 %. The study found significant association between the prevalence of alcohol abuse and the year of study, marital status, family's economic status and the living arrangements that may contribute to risky sexual behaviours among undergraduate students hence this study explored the influence of substance abuse on risky sexual behaviours among undergraduate students.

While there are numerous studies expressing the influence of substance abuse on risky sexual behaviours among the young people in Western world and African countries, such investigations have been rare in different Kenyan campuses and specifically in Nakuru County focusing on undergraduate

students, hence this study sought to explore the influence of substance abuse on risky sexual behaviours among undergraduate students: A case of Egerton and Kabarak main campuses in Nakuru County, Kenya.

### **Literature Review**

Globally, substance abuse has been noted to influence risky sexual behaviours among undergraduate students (Owczarzak, Phillips, & Cho, 2018). In USA, Rice *et al.* (2016) evaluated the direct relation between group sex and prevalent sexually transmitted infections (STI) in a cross-sectional study of men who have sex with men (MSM) presenting at an urban STI clinic in the Midwestern US among 231 men who enrolled and reported that they had sex with men and found that recent drug use and participation in group sex was associated with prevalent gonorrhoea infection.

Alcohol and drug abuse has been found to influence risky sexual behaviours among undergraduate students (Moret *et al.*, 2016; Wagenaar *et al.*, 2018; Jackson, Seth, DiClemente & Lin, 2015; Rios-Zertuche *et al.* 2017; Wang, Lui, Vega, Waldrop, & Garris, 2018; Banks, 2016; Neilson, Gilmore, & Pinsky, 2015; Sutarso *et al.*, 2016; Shorey *et al.*, 2015; Schmiege & Brayan, 2016; Wirtz *et al.*, 2016). The above studies evaluated the influence of alcohol and drugs abuse on risky sexual behaviours among young people.

Thompson *et al.* (2016) found that substance use predicted unprotected sex and four or more partners but did not mediate the effects of maltreatment. Ritchwood *et al.* (2015) found that substance use is more strongly related to risky sex among females than males. Ethnicity moderated the relationship between substance use and risky sex. Kuperberg and Padgett (2017) analysed a sample of 12,065 hook-up encounters among college students at 22 colleges and universities in the Online College Social Life Survey to explore how partner meeting locales may influence college students' risky behaviour when hook-up partners are met in those contexts. For other-sex encounters, meeting in bars or at parties, through common interest groups or history, and at dormitories was associated with binge drinking during encounters, while meeting online and in public was associated with reduced binge drinking during encounters.

In Africa, Osman *et al.* (2016) noted that youth populations are vulnerable to substance use particularly in developing countries where circumstances may be favourable for it. The overall prevalence of substance use was 31%. The prevalence of tobacco, cannabis, alcohol, amphetamines, tranquilisers, inhalants, opiates, cocaine, and heroin use was 13.7%, 4.9%, 2.7%, 2.4%, 3.2%, 1%, 1.2%, 0.7%, and 0.5%, respectively. Curiosity (33.1%) was the main reason for initiation of substance use. The main adverse effects reported were health problems including risky sexual behaviours (19.7%) and theft (19.7%). Peers (40.9%) were the prime source of substance use. On multivariate analysis, male sex was the principle predictor for substance use. Strategies to control substance use were recommended to encompass the role of the university and parents in observing and providing education to improve awareness of substances and their consequences.

According to researchers, binge drinking and marijuana use during or just prior to encounters was associated with an increased risk of unprotected sex and other substance use. Marijuana use and unprotected sex during encounters was more common when students knew their hook-up partner better or had hooked up with the partner before, while binge drinking was associated with hooking up with less familiar partners (Kuperberg, & Padgett, 2017, Metrik *et al.*, 2016).

In Nigeria, Dumbili (2019) asserted that alcohol-related problems are increasing among Nigerian University students. However, very few studies have explored the ways in which hazardous drinking practices facilitate these problems in Nigerian University students, aside from quantitative studies focusing on students in South-Western Nigeria. The findings showed that 24 out of 31 participants engaged in heavy drinking by consuming between 3 and 9 bottles of beer or flavoured spirits regularly. The heavy drinkers have suffered financial, academic, and health problems including risky sexual behaviour of having unprotected sex with strangers. Teferra *et al.* (2015) noted that several studies in Sub-Saharan Africa have documented high and increasing premarital sexual activities among young people and found that alcohol use, boarding, sex, educational level and discussion about sexuality were significantly associated with premarital sexual intercourses and recommended the need to step up reproductive health club at the university to bring behaviour change among the students in order to detain the usual consequences of premarital sexual practices and risky sexual behaviour. Poliah and Paruk (2017) attributed alcohol and substance use and family background to risky sexual behaviour and asserted that sex work was a high-risk occupation for mental health problems as sex workers were vulnerable to high rates of violence, sexual coercion, stigma and HIV. In Ethiopia, alcohol and drug abuse was identified to influence risky sexual behaviour (Abate *et al.*, 2018).

In Kenya, Mangeni, and Mbuthia (2018) noted that substance abuse among university students was a major public health concern and drugs such as tobacco and alcohol were widely and easily available in the universities. Colleges therefore form the main locus of substance abuse, with more than 40% of students already affected. According to the study, the main substance commonly used and abused among students in the college of Health Sciences was alcohol. Other substances included; cigarettes, miraa and cannabis. More males (56.8%) than females (43.2%) drink alcohol. There was a strong association between alcohol use and engagement in risky sexual behaviour. Othieno *et al.* (2015) noted that younger age, being female; tobacco use and previous diagnosis of STI were significantly associated with inconsistent condom use.

In Nakuru, Boit (2016) noted that the main objective of higher institutions of learning in Kenya was to provide education and growth experiences for its students but alcohol abuse had continued to be a problem in the university campuses that was slowing down their progress and the Kenya vision 2030 that envisages a healthy population free from the impact of alcohol abuse through the reduction of the prevalence and the impact

of alcohol abuse disorders in order to attain the highest possible level of physical, social and mental health. The study determined the prevalence of alcohol abuse among the Egerton University students. This was a cross sectional study which investigated the prevalence of alcohol abuse among 355 students. The study found out that the prevalence of alcohol abuse among students was 21.1 %. The study found significant association between the prevalence of alcohol abuse and the year of study, marital status, family's economic status and the living arrangements. The study investigated the prevalence of alcohol abuse among undergraduate students and a cross sectional approach was applied. This study explored the influence of substance abuse on risky sexual behaviours among undergraduate students in Nakuru County.

**METHODOLOGY**

The researcher applied correlational research design. The researcher applied positivist research philosophy. The location of the study was Nakuru County, where undergraduate students in two main campuses within the County were targeted, namely: Egerton University- Njoro Campus and Kabarak-Main Campus. The study’s target population was the undergraduate students of the above named main campuses. The researcher focused on 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> year undergraduate students thus constituted the accessible population. Also, ten peer counsellors participated in the focus group discussions and two student counsellors were interviewed each representing the main campuses. The two campuses were selected using a purposive sampling technique based on the records of those students who were in session at the Registrar of Academics office of the two main campuses. The researcher used proportionate sampling to identify the number of respondents required per main campus. The researcher used undergraduate students’ questionnaire, peer counsellors’ focus group discussions guide and student counsellors’ interview schedule for soliciting data from the respondents. To ensure the reliability and validity of the research instruments, a pilot study was done at Mount Kenya University (MKU)-Nakuru campus. Both qualitative and quantitative data were analysed. Descriptive and inferential statistics were employed in data analysis with the aid of Statistical Package for Social Sciences (SPSS) version 25. The analysed data was presented in tables, graphs and narratives systematically so as to draw useful conclusions and recommendations.

**Findings and Data Analysis**

The objective of this study was to explore the influence of substance abuse on risky sexual behaviours among undergraduate students with special reference to Egerton and Kabarak main campuses in Nakuru County. In this section, the study explored the influence of substance abuse on risky sexual behaviours among undergraduate students. The undergraduate students were required to fill the questionnaires, the peer counsellors were asked to give information through focus group discussion (FGD), whereas the student counsellors were asked to give information through the interview schedule.

**Undergraduate Students’ Responses on the Influence of Substance Abuse on Risky Sexual Behaviours**

The undergraduate students were asked to give information on their perceptions of the influence of substance abuse on risky sexual behaviours among undergraduate students. The findings are shown in Table 1.

Table 1 Likert Scale Score of Undergraduate Students’ Perception of the Influence of Substance Abuse on Risky Sexual Behaviours

Likert Items	SD	D	N	A	SA
Alcohol use, at least one drink (past 30 days) could lead to risky sexual behaviours.	63(18.5%)	81(23.8%)	44(12.9%)	93(27.4%)	59(17.4%)
Alcohol use, five or more drinks in 2 hours (past 30 days) could lead to risky sexual behaviours.	41(12.1%)	53(15.6%)	38(11.2%)	126 (37.1%)	82 (24.1%)
Marijuana use (past 30 days) could lead to risky sexual behaviours.	50(14.7%)	43(12.6%)	48(14.1%)	109(32.1%)	90(26.5%)
Cocaine use (past 30 days) could lead to risky sexual behaviours.	37(10.9%)	27(8.0%)	63(18.6%)	114(33.6%)	98(28.9%)
Injectable steroids (past 30 days) could lead to risky sexual behaviours.	37(10.9%)	25(7.4%)	59(17.4%)	122(36.0%)	96(28.3%)

The scores in Table 1 show the perceptions of undergraduate students to the examined influence of substance abuse on risky sexual behaviours are expounded in the following statement: Alcohol use, at least one drink (past 30 days) could lead to risky sexual behaviours. The undergraduate students who indicated strongly disagree and disagree were 63(18.5%) and 81(23.8%) respectively, those who indicated neutral were 44(12.9%) while those who indicated agree and strongly agree were 93(27.4%) and 59(17.4%) in that order. It was observed that the proportion of respondents who perceived that alcohol use, at least one drink in the past 30 days could lead to risky sexual behaviours was 152(44.8%). This means that there is sufficient evidence to conclude that majority of students perceived that alcohol use at least one drink in the past 30 days could lead to risky sexual behaviours.

The study further examined the influence of substance abuse on risky sexual behaviours among undergraduate students by asking for responses on the following statement: Alcohol use, five or more drinks in 2 hours (past 30 days) could lead to risky sexual behaviours. The undergraduate students who indicated strongly disagree and disagree were 41(12.1%) and 53(15.6%) respectively, those who indicated neutral were 38(11.2%) while those who indicated agree and strongly agree were 126 (37.1%) and 82 (24.1%) in that order. From the results, it was observed that 208(61.2%) of the respondents perceived that alcohol use, five or more drinks in 2 hours, in the past 30 days could lead to risky sexual behaviours. This means that there was sufficient evidence to conclude that a large number of students perceive that alcohol use; five or more drinks in 2 hours, in the past 30 days could lead to risky sexual behaviours.

The peer counsellors and student counsellors were requested to provide information on the influence of substance abuse on risky sexual behaviours among undergraduate students. On the influence of substance abuse on risky sexual behaviours, majority of Campus ‘A’ peer counsellors reported that when someone was drunk, he/she may unconsciously engage in risky sexual behaviours due to inability to reason well because of the intoxicating power of alcohol and drugs. The peer counsellors further noted that substance abuse enhanced prostitution in campus especially unprotected sex, group sex

and stripping behaviour. The Campus 'A' SC noted that indeed alcohol and drug abuse influenced risky sexual behaviours in that majority of the clients they handled engaged in risky sexual behaviours after use of alcohol and drugs, especially female students were noted in their notoriety of abuse of alcohol and drugs than male students. The Campus 'B' SC noted that many undergraduate students engaged in risky sexual behaviours under influence of alcohol and drug abuse since alcohol and drugs were catalysts to risky sexual behaviours. She stated that, "As a lady or a guy once you take a bottle of beer you is done."

The findings concur with other research findings that found that alcohol and drug abuse influence risky sexual behaviours among undergraduate students (Owczarzak *et al.*, 2018). Similar findings in Nigeria were discovered by Dumbili (2019) who asserted that alcohol-related problems were increasing among university students and found that 24 out of 31 participants engaged in heavy drinking by consuming between 3 and 9 bottles of beer or flavoured spirits regularly. The heavy drinkers had suffered financial, academic, and health problems including risky sexual behaviour of having unprotected sex with strangers. The findings also concur with a study by Kuperberg and Padgett (2017) who analysed a sample of 12,065 hook-up encounters among college students at 22 colleges and universities in the Online College Social Life Survey to explore how partner meeting locales may influence college students' risky behaviour when hook-up partners are met in those contexts and found that for other-sex encounters, meeting in bars or at parties, through common interest groups or history, and at dormitories was associated with binge drinking during encounters, while meeting online and in public was associated with reduced binge drinking during encounters.

The findings also coincide with a study by Mangeni and Mbuthia (2018) who found that substance abuse among university students was a major public health concern and drugs such as tobacco and alcohol were widely and easily available in the universities. Colleges therefore form the main locus of substance abuse, with more than 40% of students already affected. According to the study, the main substance commonly used and abused among students in the college of Health Sciences was alcohol. Other substances included; cigarettes, miraa and cannabis. More males (56.8%) than females (43.2%) drink alcohol. There was a strong association between alcohol use and engagement in risky sexual behaviour. Also, Boit (2016) noted that the main objective of higher institutions of learning in Kenya was to provide education and growth experiences for its students but alcohol abuse had continued to be a problem in the university campuses that was slowing down their progress and the Kenya vision 2030 that envisages a healthy population free from the impact of alcohol abuse through the reduction of the prevalence and the impact of alcohol abuse disorders in order to attain the highest possible level of physical, social and mental health free from risky sexual behaviours.

In Nakuru, a similar study was done by Boit (2016) who noted that the main objective of higher institutions of learning in Kenya was to provide education and growth experiences for its

students but alcohol abuse had continued to be a problem in the university campuses that was slowing down their progress and the Kenya vision 2030 that envisages a healthy population free from the impact of alcohol abuse through the reduction of the prevalence and the impact of alcohol abuse disorders in order to attain the highest possible level of physical, social and mental health. The study found out that the prevalence of alcohol abuse among Egerton University students was 21.1%. The study found significant association between the prevalence of alcohol abuse and the year of study, marital status, family's economic status and the living arrangements that may contribute to risky sexual behaviours among undergraduate students.

The majority of the respondents perceived that alcohol influence risky sexual behaviors while a number of the respondents perceived that alcohol do not influence risky sexual behaviors. Findings in this study elicit great concern in that a number of respondents perceived that it was okay to indulge in alcohol abuse. These results are of significance in ensuring access of counseling services is key to all to curb abuse of alcohol. Formulation of new methods to enhance awareness of the effects of alcohol and the availability of counseling services in the universities is essential in order to psycho-educate undergraduate students on the effects of alcohol abuse which may contribute to risky sexual behaviors.

The study also sought to find out the influence of substance abuse on risky sexual behaviours among undergraduate students through undergraduate students' response to the following statement: Marijuana use (past 30 days) could lead to risky sexual behaviours. The undergraduate students who indicated strongly disagree and disagree were 50(14.7%) and 43(12.6%) correspondingly, those who indicated neutral were 48(14.1%) while those who indicated agree and strongly agree were 109(32.1%) and 90(26.5%) respectively. The results indicate that the majority 199(58.6%) of the respondents perceived that marijuana use in the past 30 days could lead to risky sexual behaviours. This means that there is sufficient evidence to conclude that a large number of students perceive that marijuana use in the past 30 days could lead to risky sexual behaviours. According to similar research findings, binge drinking and marijuana use during or just prior to encounters was associated with an increased risk of unprotected sex and other substance use. Marijuana use and unprotected sex during encounters was more common when students knew their hook-up partner better or had hooked up with the partner before, while binge drinking was associated with hooking up with less familiar partners (Kuperberg, & Padgett, 2017; Metrik *et al.* 2016).

The study also sought to find out the influence of substance abuse on risky sexual behaviours among undergraduate students through undergraduate students' response to the following statement: Cocaine use (past 30 days) could lead to risky sexual behaviours. The undergraduate students who indicated strongly disagree and disagree were 37(10.9%) and 27(8.0%) in that order, those who indicated neutral were 63(18.6%) while those who indicated agree and strongly agree were 114(33.6%) and 98(28.9%) respectively. From the

results, it was observed that majority 212(62.5%) of the respondents perceived that cocaine use in the past 30 days could lead to risky sexual behaviours. This means that there was sufficient evidence to conclude that a bulk of students perceive that cocaine use in the past 30 days could lead to risky sexual behaviours.

The study also sought to find out the influence of substance abuse on risky sexual behaviours among undergraduate students through undergraduate students' response to the following statement: Injectable steroids (past 30 days) could lead to risky sexual behaviours. The undergraduate students who indicated strongly disagree and disagree were 37(10.9%) and 25(7.4%) correspondingly, those who indicated neutral were 59(17.4%) while those who indicated agree and strongly agree were 122(36.0%) and 96(28.3%) respectively. The results indicate that the majority 218(64.3%) of the respondents perceived that injectable steroids could lead to risky sexual behaviours. This means that there is sufficient evidence to conclude that majority of students perceive that injectable steroids could lead to risky sexual behaviours.

Majority of Campus 'B' peer counsellors acknowledged that risky sexual behaviours among undergraduate students were a menace in campus especially among their fellow students who lived outside the campus. The peer counsellors noted that alcohol and drugs sedate and interfere with the brain hence influenced one's decision making in dealing with risky sexual behaviours. Peer counsellors confessed cases of clients they counselled that had yielded to sex unconsciously due to influence of alcohol and drugs which had resulted in rape and even unplanned pregnancies. The student counsellor also acknowledged the influence of alcohol and drug abuse on risky sexual behaviours among undergraduate students.

The findings are similar to a study by Rice *et al.* (2016) who evaluated the direct relation between group sex and prevalent sexually transmitted infections (STI) in a cross-sectional study of men who have sex with men presenting at an urban STI clinic in the Midwestern US among 231 men who enrolled and reported that they had sex with men and found that recent drug use and participation in group sex was associated with prevalent gonorrhoea infection. The findings further concur with a study by Thompson *et al.* (2016) who noted that substance use predicted unprotected sex and four or more partners.

The study findings also coincide with a study by Osman *et al.* (2016) that youth populations are vulnerable to substance use particularly in developing countries where circumstances may be favourable for it. The overall prevalence of substance use was 31%. The prevalence of tobacco, cannabis, alcohol, amphetamines, tranquilisers, inhalants, opiates, cocaine, and heroin use was 13.7%, 4.9%, 2.7%, 2.4%, 3.2%, 1%, 1.2%, 0.7%, and 0.5%, respectively. Curiosity (33.1%) was the main reason for initiation of substance use. The main adverse effects reported were health problems including risky sexual behaviours (19.7%) and theft (19.7%). Peers (40.9%) were the prime source of substance use. Poliah and Paruk (2017) attributed alcohol and substance use and family background to risky sexual behaviour and asserted that sex work was a high-risk occupation for mental health problems as sex workers

were vulnerable to high rates of violence, sexual coercion, stigma and HIV.

Studies indicate that substance use and alcohol precedes risky sexual behaviors, because, for instance, people tend to have risky sex when, under influence of substance use or because they exchange sex for drugs hence substance use acts as a gateway for risky sexual behaviors. This exposes students to unplanned pregnancy, induced abortions, STIs e.g. Chlamydia, gonorrhoea, syphilis, HIV and HPV infection (Kirby *et al.*, 2010). Therefore, these findings continue to reveal the need of counseling services to psycho educate students on the effects of substance abuse and more so measures to put in place for students to be informed about the availability of counseling services so as to avert the negative health outcomes associated with substance abuse that contribute to risky sexual behaviors among undergraduate students.

This study further sought to establish the significance of the influence of substance abuse on risky sexual behaviours among undergraduate students. A null hypothesis:  $H_01$ : *There is no statistically significant influence of substance abuse on risky sexual behaviours among undergraduate students* was generated. Undergraduate students' substance abuse was conceptualised by means of various variables derived from non-missing responses on 5 items measuring the various domains of students' substance abuse in relation to risky sexual behaviours. Chi-square test was used to test the significance of this relationship at 0.05, significance level. The findings are presented in Table 2 and subsequently discussed.

Table 2 Chi-square Test Statistics on the Influence of Substance Abuse on Risky Sexual Behaviours among Undergraduate Students

Likert Items	Chi-Squ.	Df.	Asymp. Sig.	Exact Sig.	Point Probab
Alcohol use, at least one drink (past 30 days) could lead to risky sexual behaviours.	21.706 <sup>a</sup>	4.00	.000	.000	.000
Alcohol use, five or more drinks in 2 hours (past 30 days) could lead to risky sexual behaviours.	79.618 <sup>a</sup>	4.00	.000	.000	.000
Marijuana use (past 30 days) could lead to risky sexual behaviours.	51.676 <sup>a</sup>	4.00	.000	.000	.000
Cocaine use (past 30 days) could lead to risky sexual behaviours.	164.947 <sup>b</sup>	4.00	.000	.000	.000
Injectable steroids (past 30 days) could lead to risky sexual behaviours.	97.209 <sup>c</sup>	4.00	.000	.000	.000

The chi-square results in Table 2 indicate that the p-value of the areas of the influence of alcohol and drug abuse on risky sexual behaviours among undergraduate students were as follows: alcohol use, at least one drink in the past 30 days could lead to risky sexual behaviours (.000), alcohol use, five or more drinks in 2 hours (past 30 days) could lead to risky sexual behaviours (.000), marijuana use (past 30 days) could lead to risky sexual behaviours (.000), cocaine use (past 30 days) could lead to risky sexual behaviours (.000), and injectable steroids (past 30 days) could lead to risky sexual behaviours (.000). Since all the p-values are less than 0.05, the study rejects the null hypothesis and accepts the alternative hypothesis that there is statistically significant influence of alcohol and drug abuse on risky sexual behaviours among undergraduate students. This finding implies that substance abuse does influence risky sexual behaviours among undergraduate students and therefore should be given attention by parents, counsellors, university administrators and all other stake holders in order to psycho educate undergraduate

students on the influence of substance abuse on risky sexual behaviours.

This study further sought to establish the risk of the influence of substance abuse on risky sexual behaviours among the undergraduate students in both private and public main campuses. The findings of risk factor analysis are indicated in Table 3 and subsequently discussed.

Table 3 *The Risk Factor Analysis of the Influence of Substance Abuse on Risky Sexual Behaviours among Undergraduate Students*

Influence of Substance Abuse on Risky Sexual Behaviours among Undergraduate Students	Value	95% confidence interval	
		Lower	Upper
Odds Ratio for university (Kabarak / Egerton)	1.672	1.052	2.657
For cohort eff14 = strongly disagree.	1.388	1.040	1.853
For cohort eff14 = strongly agree	.830	.695	.992
N of Valid Cases	346		

The results in Table 3 show analysis of the risk estimate on the influence of substance abuse on risky sexual behaviours among undergraduate students. The odds ratio of the influence of substance abuse was 1.672 which indicates that in both the private and public universities there is influence of substance abuse on risky sexual behaviours. This means that students from both private and public universities are equally affected by the use of substance abuse that influences risky sexual behaviours among undergraduate students. Therefore both private and public universities should put more effort to psycho-educate students on the influence of substance abuse on risky sexual behaviours.

## CONCLUSIONS

About the influence of substance abuse on risky sexual behaviours among undergraduate students in Nakuru County, there is sufficient evidence to conclude that majority of undergraduate students perceive that the use of alcohol, marijuana, cocaine, and injectable steroids could lead to risky sexual behaviours. A Chi-square test results indicated that all the p-values were less than 0.05, significance level therefore; the study rejects the null hypothesis and accepts the alternative hypothesis that there is statistically significant influence of substance abuse on risky sexual behaviours among undergraduate students. From the risk factor analysis, it was observed that the odds ratio was 1.672 which indicates that in both the private and public universities there was influence of substance abuse on risky sexual behaviours. This means that students from both private and public universities are equally affected by substance abuse that influences risky sexual behaviours among undergraduate students. Therefore both private and public universities should put more effort to psycho-educate students on the influence of substance abuse on risky sexual behaviours.

## Recommendations

Based on the findings of this study, it was recommended that the university management, administrators and student counsellors should address comprehensively the menace of substance abuse in campuses that may influence risky sexual behaviours among undergraduate students.

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