

Original Paper

Association of Substance Use and Gender Based Violence among Students in a Tertiary Institution in Kakamega County, Kenya

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Received: June 30, 2020

Accepted: July 17, 2020

Online Published: August 7, 2020

doi:10.22158/sshsr.v1n2p39

URL: <http://dx.doi.org/10.22158/sshsr.v1n2p39>

Abstract

Background: Substance use among college and university students remains an important area of research due to the implications of early substance dependence on the future of the youth. Prior studies from various settings indicate relatively high rates of substance use among students in tertiary educational institutions. However most of these studies were based on tertiary institutions in urban settings, and few have examined substance use and its association with Gender based violence.

Objective: Study aim was to establish the prevalence and factors associated with substance abuse among students, and their relationship with Gender Based Violence in a tertiary institution in a relatively rural setting.

Methods: The study was conducted in November 2018 after obtaining the relevant approval from KEMRI and from the university administration. Quantitative and qualitative methods were used to collect the data. Quantitative data was collected using self-reported questionnaires across all the faculties among first to fourth year students. Focus group discussions were held with a group of students and Key informant interviews were also held with the institutional administrators and student leaders.

Results: A total of 412 university students completed the questionnaires. Majority were males at 57.9% and average age was 21 years. The overall prevalence of substance use was 21.1% and the most commonly used substance was alcohol at 25%. The study found out that 90% of the participants had their first time use of substances between ages of 12-20 years with median age of 18 years.

1. Background

A drug is any substance which when introduced into the body will alter the normal biological and psychological functioning of the body especially the central nervous system. Drug abuse is the self-administration of any manner that diverts from approved medical or social patterns within a given culture (WHO/UNDCP, 2003). Substance use among students in tertiary institutions of learning remains an important area of research as it predicts substance related problems in later life. Drug and substance abuse is a public health problem. Alcohol, tobacco and cannabis have remained the substances most commonly used by youth around the world with most regions showing higher rates of use among boys than girls across all the substances. Rates of alcohol and tobacco use by students in Europe have been reported to be the highest in the world (Helmer et al., 2014; Tavolacci et al., 2016). Regionally, a study among Nigerian University Students revealed a life time substance use prevalence of 46.6% with coffee and alcohol being the commonly abused drugs (Florence, Beatrice, & Pat, 2016). A similar study in Sudan found the overall prevalence of substance use to be 31%. The current prevalence of tobacco, cannabis, alcohol, amphetamines, tranquilizers, 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 (Osman, Victor, Abdulmoneim, Mohammed, Abdalla, Ahmed, ... Mohammed, 2016). A study in South Africa reported the prevalence of 19.8% for illicit drug use, 10.6% for cigarette smoking and 39.1% for alcohol consumption among high school students (Madu & Matla, 2003). In Kenya, Odek-Ogunde et al. reported high rates of substance use among students at a Kenyan private university, with rates as high as 84% for alcohol use and 54.7% for tobacco use (Odek-Ogunde & Pande-Leak, 1999). In another study conducted by in Eldoret municipality in Kenya involving 4 tertiary colleges, (a University law campus, a diploma college, a technical college and a polytechnic), life time prevalence rates for substance use were found to be 69.1% while for alcohol was 51.9% and cigarettes 42.8%. Regarding alcohol users in the same study, 97.6% of the students had consumed alcohol the week prior to study (Atwoli, Mungala, Ndungu, Kinoti, & Ogot, n.d.). Kuria et al. found alcohol use prevalence of up to 15% among secondary school students while Kwamanga et al. found lifetime cigarette smoking rates of 32% (Kuria, 1996; Kwamanga, Odhiambo, & Amukoye, 2003). The above statistics are an indication of the grave situation faced by school going children and the youth in Kenya regarding substance use. The importance of these findings lies in the fact that early exposure to substance use often predicts future substance use and psychiatric disorders (Stueve & O'Donnell, 2005). Rohde and colleagues demonstrated that substance use disorder among the adolescents was associated with numerous functioning difficulties by age 30, some of which appear to be related to recurrent substance use disorder, co-morbid adolescent disorders, or functioning problems already evident in adolescence (Rohde, Lewinsohn, Seeley, Klein, Andrews, & Small, 2007). Recent research indicates that there may be gender differences in both the subjective effects of and vulnerability to the neurotoxicity of a number of drugs of abuse including cocaine, amphetamine, nicotine and alcohol (Lynch, Roth, & Carroll, 2002). On effects of drug and substance abuse on family and community, drug abusers often become so obsessed with the

habit that everything going on around them is ignored, including the needs and situations of other family members, leading to breakdown of the family as an entity (Diamond, Barrette, & Tejada, 2001). Besides possible criminal behavior brought into the home by the drug abuser, the family suffers varying degrees of personal anguish both physically and psychologically. Substance use has adverse consequences like insomnia, prolonged loss of appetite, increased body temperature, greater risk of hepatitis and HIV infection (Preboth, 2000). This study sought to understand the prevalence and associated factors of substance use among students in a Public University in the County of Kakamega, Kenya.

2. Methodology

2.1 Study Design

This study employed concurrent mixed method design that used both quantitative and qualitative data collection techniques. The rationale for mixing both kinds of data in this study is grounded in the fact that neither quantitative nor qualitative methods are sufficient, by themselves, to capture the trends and details of a situation. When used in combination, quantitative and qualitative methods complement each other and allow for a more robust analysis, taking advantage of the strengths of each. The two phases of the research were integrated in the findings. The study took place during the month of November 2018 and the questionnaires were self-administered. Questions that were asked included reasons for substance use, prevalence of gender based violence and perceptions on substance use.

2.2 Study Site

The study took place in Masinde Muliro University of Science and Technology (MMUST) located in Western Kenya. Approval was sought from the office of the Vice Chancellor.

2.3 Study Population

Study population included students from 1st year to 4th year in the regular program residing both at the Institution and outside the Institution. Administrators included the University Counselor, Clinician and Heads of Departments.

2.4 Data Collection

2.4.1 Quantitative Data Collection

For quantitative data collection, the World Health Organization self-administered Model Core Questionnaire Tool was used to collect information on use of various drugs including alcohol, tobacco, stimulants, marijuana, cocaine and heroin. The questionnaire was self-administered but with supervision by Research Assistants

2.4.2 Qualitative Data Collection

Qualitative data was collected through focused group discussions and key informant interviews. Three FGDs were conducted among students purposely drawn from various schools and colleges. Key Informant Interviewees included the University Clinician, Student heads, Counselor and Administrators of various schools. Besides field notes, In-depth interviews and FGDs were audio-recorded with consent from the participants. No pictures were taken. A total of 5 IDIs and 4 FGDs were conducted.

2.5 Data Management and Analysis

2.5.1 Quantitative Data Analysis

Data analysis was done using STATA V13 software. For Univariate analysis, descriptive statistics such as proportions/percentages was used to summarize categorical variables while measures of central tendency (mean, median, SD, Range) for continuous variables. For Bivariate Analysis Pearson's Chi-square test was used to test for the strength of association between categorical variables. Odds Ratio (OR) and their 95% Confidence Interval (CI) was used to estimate the strength of association between independent variables and the dependent variable. The threshold for statistical significance was set at a p value <0.05 for corresponding analysis. For Multivariate Analysis, all independent variables identified to significantly associate with GBV and substance use at bivariate analysis were considered together in a Multivariate analysis. This was performed using Binary logistic regression. Adjusted Odds Ratios (AOR) together with their respective 95% Confidence Interval (CI) was used to estimate the strength of association between the retained independent predictors. For qualitative data, analysis was carried out using the six stages of the framework method (Gale et al., 2013).

2.5.2 Qualitative Data Analysis

Data was transcribed word by word and translated to English. Atlas-ti Software was used to organize the data. The Data was then analyzed thematically by querying for specific themes and subthemes developed from responses and based on emerging themes. Comparison across the collected data by source of information was made while collating similar and varied opinions of the themes relevant to the research objectives.

2.6 Ethical Clearance and Considerations

Scientific and ethical approval to conduct this study was obtained from the Kenya Medical Research Institute's Scientific and Ethical Review Unit (SERU) prior to study implementation. Written permission was also obtained from the Vice Chancellor's office. Consenting to participate in the quantitative and qualitative data collection was individualized.

3. Results

3.1 Quantitative Findings

A total of 412 students filled the questionnaires which were self-administered. Males were the majority comprising 57.9%. Majority were single (90.7%) and those residing outside campus were the majority at 79.4%. All years of study were represented in the study and almost all students were Christians (94.8%). The demographics of the students is shown in Table 1.

Table 1. Demographic Characteristics

Categorical Variables	Category	N (%)
Gender	Male	238 (57.9)
	Female	173 (42.1)
Marital status	Single	371 (90.7)
	Married	33 (8.1)
	Divorced	5 (1.2)
	Separated/widowed	0
Religion	Christians	385 (94.8%)
	Other religions	27 (5.2%)
Year of study	1	8 (2.0)
	2	137 (34.8)
	3	143 (36.3)
	4	103 (26.1)
	5	3 (0.8)
Housing	University quarters	85 (20.6)
	Living with Parent/relative's	12 (2.9)
	Hostels	315 (76.5%)

3.2 Substance Use

We found a lifetime substance use at 40.8% and 21.1% of the study population reported current use. Alcohol was the most frequently used substance at 25% as shown in Table 2.

Table 2. Prevalence of Current Use for Each Specific Substance

Substance	Prevalence
Alcohol	103/412 (25%)
Nicotine	11/412 (2.7%)
Khat	7/412 (1.7%)
Cannabis	19/412 (4.6%)
Heroin	0
Sedatives	1/412 (0.2%)
Methamphetamine & Amphetamine	0
Cocaine	2/412 (0.5%)
Hallucinogen	0
Mandrax	0
Inhalants	1/412 (0.2%)
Codaine	7/412 (1.7%)

The average age of first use of these substances is during teenage years of around 13-17 years when the students are in upper primary school and in high school (Table 3).

Table 3. Average Age at First Use for All then for Specific Substances

Substance	Average age Mean (SD)
Alcohol	17.6 (3.3)
Nicotine	16.3 (3.2)
Khat	17.3 (2.5)
Cannabis	17.9 (3.0)
cocaine	20 (1.3)
inhalants	14 (5.9)
codaine	17.6 (3.7)

The study found that most substance uses were introduced to the habit by friends a (71.4%). A small proportion of students (7%) were influenced by their parents (**Figure 1**).

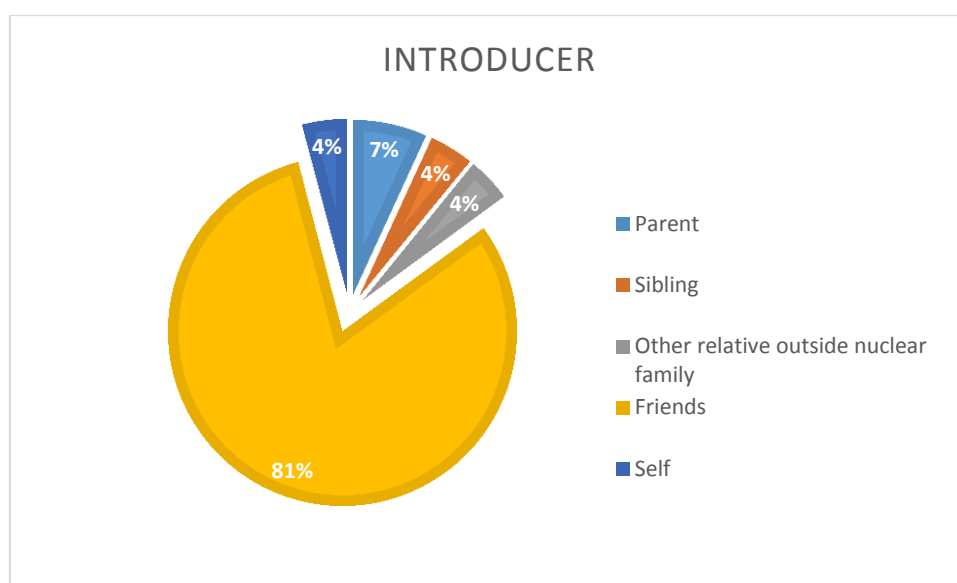


Figure 1. Introducer to Substance Use

Reason for taking substances varied with majority indicating that they use substances to relax and to relieve stress (33%). Others indicated they use the substances to experiment on new things (15.5%) and other said it was due to peer pressure at 11.3% as shown in Table 4.

Table 4. Reason for Continued Use of Substances

Reason	N (%)
To relax	34/168 (20.2%)
To relieve stress	23/168 (13.7%)
Desire to experiment	26/168 (15.5%)
Peer pressure	19/168 (11.3%)
Cope with problems	5/168 (3.0%)
Others	9/168 (5.4%)

A majority of the students (91%) know that substance use is a problem at the university. Three quarters of them (75.5%) also reported knowing university friends with problems such as academic, social and medical as a result of substance use (Table 5).

Table 5. Attitude and Perception of Substance Use

Issue	Yes N (%)	N (%)
Do you think substance use is a problem among students at the university	375 (91.0%)	31 (7.5%)
Have you ever been under peer pressure from your colleagues to take any substance?	231 (56.1%)	174 (42.2%)
Do you have university friends who have had problems (medical, academic, social) as a result of substance use?	311 (75.49%)	93 (22.6%)
Have you ever tried to talk to any of your university friends to stop using substances?	272 (66.0%)	132 (32.0%)
Do you think the University is helping students who use substances but would wish to stop the habit?	177 (43.0%)	220 (53.4%)
Do you have a history of alcohol or drug problems in your family?	163 (39.6%)	236 (57.3%)

3.3 Gender Based Violence

More than half (56.8%) of the students reported having suffered from Gender Based Violence (GBV) at one time. More males reported GBV at 56% although this was not statistically significant most likely due to the fact that the males were still the majority in the study at 58%. The commonest form of GBV was sexual assault at 40% followed by physical assault at 35% (Table 6).

Table 6. Gender Based Violence—Answered Yes for the Following:

Ever experienced GBV	Yes (234=56.8%) N0 (178=43.2%)
Type of GBV	Yes
Physical	144/412 (35.0%)
Sexual Assault	163/412 (39.6%)
Psychological/Emotional abuse	38/412 (9.2%)
Rape	49/412 (11.9%)
Experienced All	12/412 (2.9%)

Since alcohol was the most used substance, we undertook a secondary analysis of GBV and alcohol use. The study found that those students who had experienced GBV were more likely to be involved in harmful hazardous drinking and this was statistically significant at <5% significance level. The same students who had reported experiencing GBV were more likely to drink in the morning as an eye opener than those who did not report GBV and this association was again significant. Students who experienced GBV were more than 2 times more likely to report having multiple drinks weekly than those who had not reported GBV although this was not statistically significant (Table 7).

Table 7. GBV and Alcohol Use

Characteristics	GBV							
	No (n=178)		Yes (n=234)		OR	95% CI		
	n	%	n	%		Lower	Upper	P value
Harmful hazardous drinking	8	4.5	35	15.0	4.27**	1.76	10.34	P<0.01
Drinking first thing in the morning as an eye opener	3	1.7	24	10.3	3.83*	1.39	10.57	P<0.01
Drinks multiple times weekly	3	1.7	13	5.6	2.41	0.46	12.72	p>0.05

3.4 Qualitative Findings

Three focus group discussions were conducted among students of mixed gender that included first years to fourth years that were purposefully sampled from various schools. The groups consisted of between 8 to 12 members and the interviews took 1 hour to 1 hour and 30 minutes. Three key informant interviews were also conducted among selected management representatives. From these interviews we sought to understand:

3.5 Types of Substances Used by the Students and Their Sources

From the qualitative data it was found out that students were exposed to a variety of substances. It was reported thus “the major substances here are beer, chang’aa, miraa, shisha, bhang, tobacco, marijuana, even cocaine” FGD. Men used the substances most and the reason being that men wanted to feel “macho”

(manly). On sources of substances, it was reported that there was a center inside the institution that sold alcohol known as student Centre. It was also reported that a number of students also got *chang'aa* (local brew) from the surrounding villages as "...it is only sold at 10 bob". **Figure 2** shows substances that were commonly used by students as alluded to by FGDs.

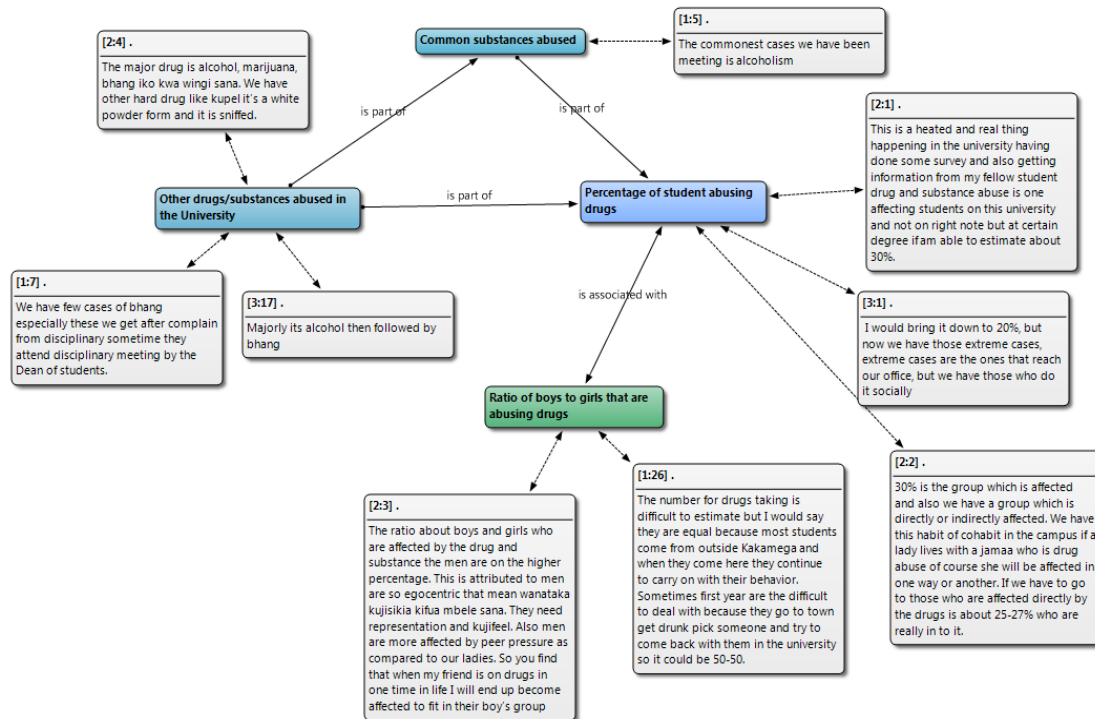


Figure 2. Substances Commonly Used by Students

3.6 Reason for Substance Use and Its Disadvantages

Substance use was considered by students to represent an important socialization experience in which one is "afforded the opportunity to satisfy pleasure seeking motives". For example, escapism from problems of everyday represented a meaningful consumption motive associated with drinking so as "to escape from reality" FGD. Students also reported using substances for curiosity reasons, peer pressure (as a way to fit in) and as a stress reliever. "there is this mentality that when you are stressed and you take alcohol, the stress goes away; you see what your friends are doing and you copy because you have got no ability to say no so you go ahead and do what they are doing and before you know it you are hooked". FGD. Lack of money was also reported as one of the reasons for students to indulge in substance use: "...one thing money is everything and especially if you come from a family that just sends you to school with minimal financial support makes you mix with groups that drink and they can also introduce you to other illegal ways of looking for money" FGD. We also sought to understand whether the students understood the dangers in engaging in illicit substances and what could be done to help them. **Figure 3** shows excerpts from KII some of the disadvantages of engaging in substance use by students.

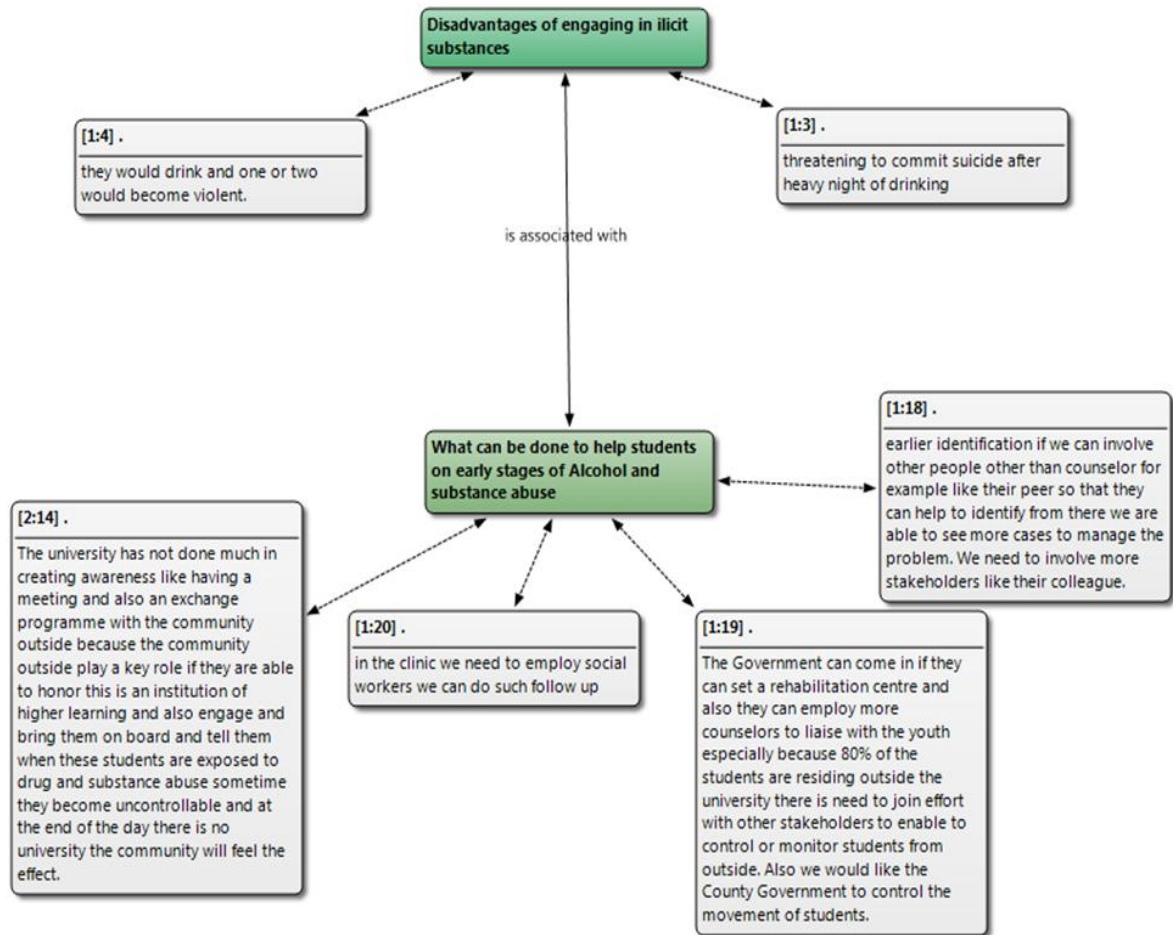


Figure 3. Disadvantages of Engaging in Substance Use and Possible Interventions

3.7 Existing Measures That Addressed Substance Use

There was some acknowledgement though that the university had systems in place to prevent substance use although the rules applied only up to 4 pm daily when classes ended. Students had also innovated their own measures to mitigate the problem. "...as students we assist each other, we have saving groups where students bring money for banking and we use this money for useful deeds, eg., team building where we keep students busy" FGD. It was noted that the office of the Dean: "...had developed a peer educators club that sensitized students on effects of drugs, and a body of guidance and counselling that guided needy cases in a confidential manner, there are other clubs where students are encouraged to be creative" FGD.

3.8 Gender Based Violence Dimensions

On issues of gender based violence, it was reported that it was common and especially prominent among first years as they are "new" to campus life and affected both men and women. GBV related practices mentioned included sexual harassment, physical beating and water scalding. Intimate partner violence was often systematic and contained parallel physical, sexual and psychological violence. It took different forms, could be conducted by different perpetrators throughout the lifetime, and had

severe direct and indirect health consequences. “... girls are raped when they are drunk”. Physical battering was also reported and the reasons given were that: “...women engaged in multiple relationships so that their needs are taken care of”. It was noted that men also suffered from GBV “a lady mishandling a guy just because they think their needs should be taken care of by the guy”, and men perpetuated GBV because “.....from a man’s perspective, you are a girl and you can take me nowhere” FGD. “...we find disciplinary cases on gender based the boy had hit the girlfriend mostly you ask what happen you come to understand later that the boy was drunk or had taken some sort of drug. So he was under influence” KII. “....Mostly the girls come to the clinic with injury bitten up by the boys when they get drunk”. KII. Drinking sprees especially by the men leads to violence: “...many cases we’ve had where the lady comes complaining she has been beaten up by the boyfriend when he was drunk” KII. Substance use are triggers of violence. “...it has been attributed to the fact that the students are using the drugs and at the end of the day they become uncontrollable so they end up in quarrels and fight for small issues like issue of esteem”. KII

“...we find disciplinary cases on gender based the boy had hit the girlfriend mostly you ask what happen you come to understand later that the boy was drunk or had taken some sort of drug. So he was under influence”. KII.

Figure 4 displays excerpts from KII on gender based violence dimensions.

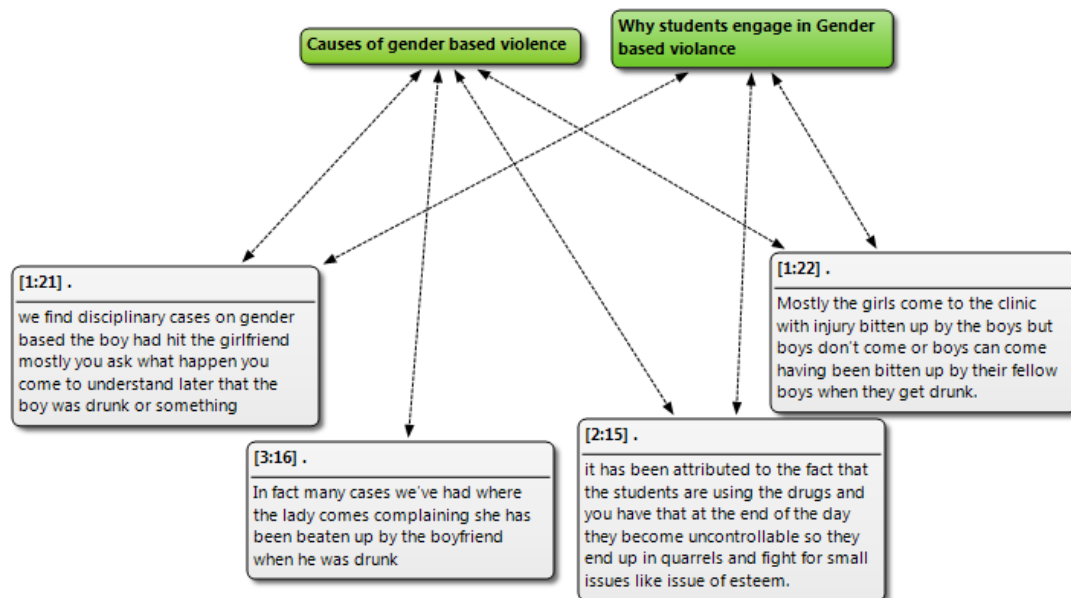


Figure 4. Gender Based Violence Dimensions

3.9 Challenges in Prevention and Care for Substance Use Related Cases

There were challenges of mitigating the problem of substance use in the Institution. Some students had no capacity to deal with the problem and therefore they did not want to talk about it. It was reported that students using substances did not want to discuss the issue with University counsellors or the

medical personnel and they rarely ever asked for help. The reason reported was “...students do not want to talk about the problem of substance use as they feel its confidential, and they don’t want parent’s/university administration to be involved,” KII. Parents on one hand, wanted to be involved but the issues at hand were confidential from the administration point of view and also students did not want their parents/relatives involved. Students also felt stigmatized and so they did not want to seek for help and some did not have family social support systems. Some feared personal punishment from the university administration. It was also reported that GBV cases were not reported to the university administration except in a few serious cases involving injuries that required medical invention. However even in such “...cases students are not willing to accept the injuries were as a result of GBV but will give an excuse for the injuries, hence magnitude of GBV in the institution remains unknown” KII

3.10 Student’s Perspective on Substance Use Management

To address the challenges and problems related to substance use, students suggested increasing advocacy and awareness of substance use problems, instilling more punitive actions for use within the university, increasing university accommodation infrastructure and promoting externally led interventions. Below are some of the comments we got from the students on the way forward regarding reducing substance use at the institution.

Students suggested that coming up with clubs would engage the students and make life more meaningful.

“...University should come up with more clubs that will educate more students on moral uprightness, and also rules that are there like using drugs in designated areas. So if you’re found using any drug outside the designated area stricter consequences should be applied on you”, FGD

There was need to community engagement by developing activities that the students could engage and learn. “...one of the initiative that the university can do is to try and have common activities the society around it. Some of the activities include bull fighting, the Kakamega forest marathon where the students in the university interact one on one with the society around it”. KII. Accommodation is expensive and therefore there was need for the university to engage with developers to make housing affordable to minimize cohabiting and therefore likely escalation of violence: “...we are supposed to have a policy on how much students should be charged for their houses outside the university (hostels) because that is where a lot of issues sprout from because at the university within the hostel you are going to pay 8,000 for a whole semester while outside you pay 15, 000 for the same single room so I pay 15,000 I don’t have extra cash to cater for my needs so I’m so depressed and I have to go into drugs”. Counseling services should be enhanced both at the Institution and outside arrangements, “...guidance and counseling is failing, they should seek advice from the society, from other bodies outside externally so that they can reinforce and assist those affected ”KII.

4. Discussion

This study has demonstrated a relatively high prevalence of substance use among university students in a rural setting in Kenya. This study found high life time use of substances at 40.8% while current use was at 21.1% with the most commonly used substances being alcohol. This is comparable to previous studies in Kenya which found life time substance use of between 32 % and 69% (Odek-Ogunde & Pande-Leak, 1999; Atwoli, Mungala, Ndungu, Kinoti, & Ogot, n.d.; Kuria, 1996; Kwamanga, Odhiambo, & Amukoye, 2003).

Current use of 21.1% is still high taking in to account the university has a student population of >10,000 students. This translates into a thousand of students using substances. The commonest substance that students were using is alcohol with a quarter of all students reporting alcohol use. More than two third of the students know of a colleague who has had either medical /social/academic problems as a result of substance use.

Majority of students were introduced to the habit by friends but a small proportion of students (7%) were influenced by their parents. This is worrying even though the numbers are small since parents are supposed to be the role models and in the frontline to fight substance use among their children and not to be the ones introducing the problem to their children. More than half of the students (53.4%) felt the university was not doing enough to help the students with substance use problem.

The study confirmed that cases of GBV are fairly common as majority of the students in this study reported having experienced it at one time in their lives. GBV was found to be associated with alcohol use with the students reporting GBV also reported involvement in hazardous drinking. Those reporting GBV also reported drinking first thing in the morning as an “eye opener” and they were more likely to report drinking multiple times in a week hence dependent on the substances. This shows the correlation of substance use notably alcohol plays in propagating GBV in young people. Results are similar to a study (thesis) done on effects of GBV among students at the same institution which found a similar correlation of substance use and GBV (Ejakait, 2014). However, GBV cases are usually not reported to the university administration hence the magnitude of the problem remains unknown to the authorities. GBV is a violation of human rights and addressing the issue empowers survivors of the vice as active rights-holders. For the students to meet their human rights obligations the institution should perhaps seek to transform the social and cultural norms regulating power relations between women and men, and other linked aspects of subordination.

These findings have ultimately highlighted the important transition that many young people undergo while in institutions of higher learning. Consequently, there is no denying the deeply ingrained importance and cultural significance that drinking continues to hold for young people in similar societies. Within this context, substance use and especially alcohol continues to occupy a unique position in the minds of students as it simultaneously facilitates socialization while also providing an accessible and culturally acceptable means of disengaging from the pressures of reality, but this social inclination also brings with it unwarranted side effects that includes gender based violence.

5. Conclusions

Substance use is a problem at the institution and interventions to prevent and manage use of substances are required. Average use of first use of substances is in early teenage years of 12-18 years while students are in upper primary schools and in Secondary schools. Some students started using substances due to influence from their parents/guardians and majority take substances to reduce stress. Therefore, sensitization on stress management is important to mitigate the effects. There are challenges to help the students who use substances as majority do not want to talk about the subject and they rarely seek help. Gender based violence is a problem at the university and it's also highly associated with substance use. However, cases are not reported to the University administration. The issue needs to be addressed and systems put in place to reduce the problem. The area of counseling is still weak and therefore requires strengthening.

6. Recommendations

It is recommended that the Institution should consider interventions that address both preventive and treatment of substance use disorders, and specifically alcohol use since it was the most commonly used substance. Commonest reason given by students for drinking alcohol was to relieve stress. Efforts to sensitize the students on effects of stress as well and how to manage it should be put in place. Policies that address stress such as mentorship and extra curriculum activities should be encouraged and expanded. The Institution should try and link up with facilities that offer rehabilitation services for substance use so that they can refer the students directly to such institutions. It is important that more hostels are constructed so that more students can reside inside the campus where there is institutional control, as substance use was found highest among the students residing outside campus. Students should be educated on Gender based violence and students encouraged to report cases of GBV. Involvement of peers and role models may help in reduction of GBV. Due to the early age of onset of substance use found in this study (teenage years), it is recommended that interventions to reduce substance use among students in institutions of higher learning must target young people from teenage years in upper primary and throughout secondary school years for programme to be successful.

Authors' Contributions

PO, JM, LO and DK were involved in proposal development, reviews, data collection, analysis and manuscript development.

Acknowledgement

Kenya Medical Research Institute for funding, Masinde Muliro University of Science and Technology and all the respondents.

Competing Interests

The authors declare that they have no competing interests.

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