

# Efficacy of Peer-led Interventions on Substance Use among Female Undergraduate Students in Universities in Nairobi County, Kenya.

Wangechi Mureithi, PhD \*

\* Laikipia University, Kenya

Email Address: [wmureithipj@gmail.com](mailto:wmureithipj@gmail.com)

Submitted: 18<sup>th</sup> November 2021

Published: 31<sup>st</sup> December 2021

## Abstract

Substance use has been on the rise among undergraduate students in universities in Kenya. This has raised concerns bearing in mind that universities in Kenya have put in place psychosocial interventions in a bid to address the menace. This study sought to evaluate the efficacy of peer-led intervention programmes on substance use among female undergraduate students in universities in Nairobi County. The study was guided by Bandura's Social Learning Theory. An *expost facto* research design was employed in the study. The target population comprised of all female students in universities in Nairobi County. Proportionate random sampling technique was employed to select the sample. A sample of 351 female undergraduate students was selected for the study from a target population of 40,647 female undergraduate students. One (1) student counsellor from each of the 16 universities in Nairobi County also participated in the study. A semi-structured research questionnaire and an interview guide was used to facilitate collection of data. The content and face validity of the research instrument was determined by research experts in the School of Education at Laikipia University. The questionnaire was pilot-tested in one public and one private university in Machakos County, Kenya prior to its use in the main study with the view of determining its reliability. Cronbach's alpha was used to estimate the reliability of the research instrument which yielded a coefficient greater than .7. Data was analyzed using descriptive and inferential statistics. Specifically, null hypothesis was tested using simple linear regression analysis at .05 level of significance. Qualitative data

was analyzed thematically. The study findings established that universities encouraged peer to peer counselling managed by peer leaders with the peer leaders first trained on substance use and the adverse consequences of substance use.

**Keywords:** Peer-led programmes, peer leadership, substance use, undergraduate students, universities

## Introduction

Substance use amongst university students has been escalating at an alarming rate despite having preventive strategies set to curb the situation across the world. There are many intervention programmes employed to address the menace of substance use among the young people. Substance use intervention programmes are tools designed to enable users avoid or decrease unhealthy drug use through focusing on different motivations that individuals have for using and abusing specific drugs at different ages (Insel et al., 2012). According to United Nations Educational Scientific and Cultural Organisation (UNESCO 2017), substance use prevention is described as the programmes and policies aimed at preventing or delaying the initiation of substance use and the transition to substance use disorders thus ultimately reducing substance use, as well as its health and social consequences. United Nations Office on Drugs and Crime (UNODC, 2017), states that 29.5 million people globally suffer from drug use disorders. This population, whose majority are young adults engage in problematic use and suffer from the adverse effects of drug abuse. The World Health Organization (WHO, 2008) stated that by the year 2020 mental and substance use disorders will surpass all physical diseases as a major cause of disability worldwide. WHO (2013) emphasizes that at least 15.3 million individuals have drug use disorders and drug abuse is associated with significant health and social problems. World Health Organisation (2018) asserts that alcohol is the 5<sup>th</sup> highest contributor to the global burden of disease for young people aged between 15

-19 years. According to WHO, this youthful population is mostly found in tertiary institutions which include colleges and universities where the prevalence rate is higher, and thus they are at risk for alcohol use disorder as well as social, economic and psychological problems.

According to UNODC (2013), undergraduate students face a myriad of problems. Some students may face intense academic pressures, forming new social groups, problems with keeping a balance of social engagements with academic and other life responsibilities. In addition, the students may be exposed to normative values valued by the youth culture that differ from parental values. Further, UNODC postulates that these perceived norms motivate the youth to indulge in unhealthy behaviours such as smoking and alcohol and drug use. Amelia et al. (2017) posits that drug use is prevalent among college students, and drug use persists among young adults even after many have graduated from college.

Amelia et al. indicated that more attention therefore, should be directed at identifying and intervening with students at risk for drug use to mitigate possible academic, health, and safety consequences. The National Centre on Addiction and Substance Abuse (CASA) at Columbia University reported that almost half of all full time college students binge drink and use prescription drugs or other substances each month and nearly one in every four college students met the diagnostic criteria for substance use disorder (CASA, 2007). The reasons advanced by students why they drink and drug themselves are varied. CASA (2007) noted that the students used substances to relieve stress, relax, have fun, forget their problems and be one of the gang. College women in focus groups in the study said they wanted to keep up with the guys so they went for a drink with them the college females in the study also said they were under enormous pressure to have sex and they used alcohol as a disinhibitor.

In Kenya, the problem of substance use is considerably rampant in universities with an increasing trend over the years. Atwoli et al. (2011) indicated that the prevalence of substance

use among college and university students is high and causes significant physical and psychosocial problems in this population. This is as evidenced by a study carried out in one of Kenya's private universities which revealed percentages of lifetime rates of commonly used substances at; tobacco 54.7%, alcohol 84.2 %, cannabis 19.7% and inhalants 7.2% (Atwoli et al., 2011). A national survey by the National Agency for the Campaign against Drug Abuse (NACADA) revealed that 10.6% respondents smoke bhang, while over 11% of Kenyan youth use *Miraa* (NACADA, 2009).

According to a study by K'okul (2010), the findings indicated that drug abuse is a major contributing factor to riots in universities. It was reported that the use of substances such as marijuana, heroin as well as heavy consumption of various types of alcoholic drinks by students in Kenyan public and private universities has become high. With respect to undergraduate college students, most of the evidence indicates that males use alcohol and drugs more frequently than females (Robinson et al., 1993). Perkins (1992), however, suggested that college females who abuse alcohol are not the rarity that they once were, and in fact, are catching up to men in terms of negative alcohol related consequences. According to the National institute on Drug Abuse (NIDA), women may face unique issues when it comes to substance use, in part influenced by sex differences based on biology and gender differences based on culturally defined roles for men and women (NIDA, 2017).

A study by Bukoski (2007) recommends that prevention programmes for students should include integrative methods such as peer discussion groups and not just didactic teaching techniques. Bukoski supports programmes that integrate skills which enable students resist drugs when offered, strengthen personal commitment against drug use and increase social competency of assertiveness and self-efficacy.

A study by Perkins (2002) on consequences of alcohol misuse in college populations indicated damages occasioned by uncontrolled use of alcohol. The study adopted a survey research design where relevant studies conducted in the past two decades were analyzed. Misuse of

alcohol was found to result in significant damage and costs to institutions of higher education. The study revealed that peer leadership is vital in demonstrating the shared concerns among students in respect of prevention programmes. This was based on the argument that students are inclined to the beliefs of their peers. However, the features of peer leadership programmes have not come out clearly; neither has the study contextualized peer leadership to substance use.

Parent (2010) conducted a similar study on effects of a comprehensive substance use prevention programme where the focus was on urban adolescents. In particular, the study evaluated programmes that included peer leadership in regard to their effectiveness in influencing peer norms. The study involved a sample of 129 male and female students drawn on an urban, low-income school district. Participants were randomly put into groups; that is, treatment condition and no-treatment, minimal-contact condition. A multiple analyses of covariance was employed to evaluate the effects of the programmes. The study found that there were no statistically significant differences between the treatment and control conditions on substance use and behavioural outcomes. Though the study has examined how peer leadership influences peer norms, there is no empirical evidence regarding the relationship between peer leadership and substance use.

The goal of Golonka et al. (2017) study conducted in the United States sought to evaluate the feasibility of combining social influence, cognitive dissonance and self-persuasion principles in order to harness the influence of peers focusing primarily on changing the behaviours and attitudes of the most influential students. The study employed the help of natural adolescent leaders of the various cliques in the participating schools with the view of recruiting them to deliver anti-drug use messages to other students at their schools. A total of 324 students were randomly selected and divided into two groups: control and experiment groups. The researchers collected data using survey questionnaires that were self-administered before and after the intervention. After the intervention measures, pre-test and post-test data were analysed. It was found that

using the natural leaders as agents of change was significantly successful in appealing to the other members of their group. This shows that intervention programmes focusing primarily on the social leaders can be successful in combating substance use in the school settings.

The aim of Hasel et al. (2016) quasi-experiment was to analyse the effectiveness of peer-led education programmes on drug use prevention among the students. The participants were drawn from three girls' schools and four boys' schools with a total of 500 students selected to participate in the study. These participants were assigned in equal proportion to the experiment group and the control group. They completed self-administered drug use questionnaire before the test and after the test. A comparison of the data collected from the two sets of participants after the intervention measures found that peer-led programmes significantly reduced the drug use rates among the students. This implies that peer led programmes are effective methods of drug use prevention.

The objective of Chireshe (2013) study was to evaluate the status of peer counselling in selected Zimbabwean secondary school from the perspective of the school teachers. Analysis of the data disclosed that few schools had peer counselling and that the peer counsellors in these schools had been selected based on good characters. It also disclosed that the peer counsellors experienced a number of challenges including ill equipped to help other students, low level trust by other students, and shortage of time. Moreover, it demonstrated that it is imperative for schools to equip the students to improve the efficacy of the peer leadership programmes.

The influence of peer leadership on substance use among university students in Sudan was one of the issues that Osman et al. (2016) investigated. The study was conducted at a private university in Sudan where a sample of 500 students was randomly selected from the lecture halls. The survey used a World Health Organization drug survey for students, which was self-administered among the selected participants. Analysis of the responses received from the students found that cannabis was found to be more prevalent in comparison to

alcohol, which is not shared among the students because of its illegality in Sudan. Furthermore, it established that temptation by peers was one of the main factor that had pushed most students into the consumption of alcohol and marijuana. It was also established that peer role models can be effective for substance use intervention programmes.

Chege (2014) conducted an empirical study on assessment of youth participation in decision-making processes in community development programmes. The study which was conducted in South Africa, focused on a case of Spes Bona High School Dream2Be Peer Education Programme. The study acknowledged that on a global scale, peer education programmes have revolved around fundamental issues including drug and substance abuse education. In the study, it is noted that peer education programmes are advocated in sub-Saharan Africa as complementary or optional psychosocial interventions that champion for positive youth development devoid of such vices as substance use. This study had two major setbacks. First it did not explicitly address the subject of peer leadership vis-à-vis substance use. Secondly, it did not focus on university students.

A descriptive study by Kamore and Tiego (2015) evaluated the factors that were limiting the efficiency of peer counselling programmes in Kenyan high schools. The study established that there were no coordinated criteria through which the peer counsellors were selected, no supervision of the peer counsellors, inadequate training of the peer counsellors and the programmes were rarely evaluated.

A study by Njagi (2014) found that peer counselling was a more popular solution in comparison to guidance and counselling with some students identifying the peer counsellors as individuals they approached first in case of a drug related problem. This study shows that peer counselling is a commonly used tool in the fight against drug abuse in the secondary school settings.

In Kenya, NACADA founded in 2001 with a mandate to prevent substance abuse collaborates and partners with universities. It has provided empowerment to youth and general public on how

to counter drug use in learning institutions including universities. NACADA carries out training of counsellors to help in the prevention of substance abuse (NACADA, 2012). Other programmes are offered by the media, Non-Governmental Organizations (NGOs) and spiritual leaders, all of which make attempts to prevent substance abuse in Kenyan institutions including universities through provision of life skills, dissemination of information and skill development (Kemei, 2014). In addition, the implementation of alcohol and drug abuse policy in learning institutions is part of the intervention measures taken by universities to curb the menace of substance use. Most strategies entail dissemination of information about drug use and its consequences and empowerment on social skills for resisting drug use and abuse (Kemei, 2014).

According to Wilson and Kemei (2017), prevention programmes have been put in place to curb the problem of drug abuse in universities in Kenya. The universities make use of diverse methods to implement intervention programmes. These include talk shows, brochures, drug abuse days and posters. However, the ability of these psychosocial intervention programmes to effect a positive change to drug abuse is determined by several correlates to drug abuse prevention

Kamanja (2010) reports that at Kenyatta University, the peer education programme aims to reduce irresponsible sexual behaviour, unwanted pregnancies, sexually transmitted infections (STIs) including HIV/AIDS and drug abuse by enhancing the quality of counselling and service delivery for students. Further, the peer outreach and extension programme trains university students to promote responsible behaviour among their peers. Through peer counselling programme, students obtain information on drugs and referrals for better help from trained counsellors are done for students with complicated drug abuse cases.

Pere and Yatich (2017) indicate that despite the fact that most universities and colleges in Kenya have instituted drug reduction strategies including peer led interventions, the substance use menace among university and college students is on the increase. The purpose of this study was therefore to examine the efficacy of peer-led intervention

programmes on substance use among female undergraduate students in universities in Nairobi County, Kenya.

### Objective of the Study

The main objective of this study was to examine the efficacy of peer-led intervention programmes on substance use among female undergraduate students in universities in Nairobi County, Kenya.

### Methodology

This study adopted *ex-post facto* research design. From a list of the universities in Nairobi County, a total of 40,647 female undergraduate students were projected to participate in the study. From this figure, 23,010 constituted public university students whereas the rest (17,637) were drawn from private universities. It is imperative to note that all the female students in these institutions were considered in the study. Krejcie and Morgan Table (1970) was used to determine the sample size. From a total population of 40,647, a sample of 367 participants (351 female undergraduate students and 16 student counsellors) was selected. Sixteen counsellors (One (1) from each university) were purposively selected. Both semi-structured questionnaire and interview guide were used to aid in data collection. This was supported by the fact that the study was a survey and the data sought was mixed which comprised of quantitative (categorical) and qualitative data. The questionnaire was semi-structured in that it consisted of both open-ended and close-ended questions. The questionnaire further sought to facilitate collection of data on a Likert scale. An in-depth interview was conducted among the university counsellors to find out the efficacy of peer led prevention intervention measures in mitigating against substance use among female undergraduate students.

Data collected was analyzed using mathematically-based methods with the help of the Statistical Package for Social Sciences (SPSS) Version 26.0. The analysis encapsulated both descriptive and inferential statistics.

Descriptive statistics included measures of distribution (frequencies and percentages), measures of central tendencies (means), and

measures of dispersion or variation (standard deviations). On the other hand, inferential statistics that aided in drawing inferences (conclusions) was in the form of Pearson's Product Moment Correlation Coefficient, and both simple linear and multiple regression analyses.

### Results and Discussion

This study obtained information from 268 female undergraduate students from 16 universities in Nairobi county Kenya. 14 student counsellors were interviewed by the researcher. Two student counsellors were unavailable to grant the interviews. The study analyzed the views of female undergraduates in public and private universities in Nairobi County with regard to peer leadership programmes. The views to this effect are presented in Table 1. The scale used ranged from Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), to Strongly Disagree (SD)

**Table 1**  
**Descriptive Statistics for Efficacy of Peer-to-Peer Leadership Programmes**

	SA n(%)	A n(%)	U n(%)	D n(%)	SD n(%)	Mean	Std. Dev
New peer leaders are trained on substance use and the adverse consequences.	44(15.9)	105(38.0)	94(34.1)	14(5.1)	11(4.0)	3.59	.962
The university encourages peer counselling overseen by selected peer leaders.	41(14.9)	103(37.3)	81(29.3)	34(12.3)	9(3.3)	3.50	1.007
Peer leaders in my university present factual and balanced view of substance use and the consequences.	33(12.0)	92(33.3)	103(37.3)	31(11.2)	9(3.3)	3.41	.961
Peer leaders model behaviour that can be imitated by their peers.	38(13.8)	108(39.1)	63(22.8)	35(12.7)	23(8.3)	3.39	1.143
Behaviour change groups led by peer leaders have positively changed lives of many students.	42(15.2)	83(30.1)	92(33.3)	32(11.6)	19(6.9)	3.36	1.101
Peer leaders are chosen based on their past and existing ethical and leadership record.	50(18.1)	80(29.0)	83(30.1)	25(9.1)	30(10.9)	3.35	1.211
Peer leaders are able to effectively share information on substance use	41(14.9)	92(33.3)	65(23.6)	47(17.0)	23(8.3)	3.30	1.178
Peer leaders have helped me stand against peer influence.	57(20.7)	71(25.7)	58(21.0)	47(17.0)	35(12.7)	3.25	1.325
Peer leaders have helped me deal with risky situations.	49(17.8)	73(26.4)	63(22.8)	50(18.1)	33(12.0)	3.21	1.283
Peer leaders have helped me avoid use of substances.	54(19.6)	77(27.9)	43(15.6)	46(16.7)	48(17.4)	3.16	1.401
Peer leaders have helped me reduce intake of substances.	52(18.8)	68(24.6)	46(16.7)	45(16.3)	57(20.7)	3.05	1.433
The peer leaders closely monitor the interactions between students already abusing drugs and at-risk students.	26(9.4)	68(24.6)	95(34.4)	47(17.0)	32(11.6)	3.03	1.140
I often seek advice from peer leaders on substance use.	39(14.1)	66(22.5)	40(14.5)	70(25.4)	56(20.3)	2.84	1.378

The analysis of the opinions of the respondents in line with efficacy of peer-to-peer leadership programmes as illustrated in Table 1 showed that 53.9% of the respondents admitted that new peer leaders were trained on substance use and their adverse consequences. These results were closely related to a study conducted by Maithya (2009) which acknowledged the need for peer leaders to be trained for a given duration of time. A total of 52.2% of the students agreed to the view that the university encouraged peer counselling overseen by selected peer leaders. In view of the argument that peer leaders in the respondent's respective university present factual and balanced view of substance use and the consequences, majority (37.3%) of the respondents were unsure of the proposition.

It was further noted that 52.9% of the respondents concurred that peer leaders modelled behaviour that could be imitated by their peers while 22.8% were unsure of the foresaid proposition. It was also observed that more than half (54.3%) of the respondents behaviour change groups led by peer leaders have positively changed lives of many students. On the same breadth, 41.7% of the students agreed that peer leaders were chosen based on their past and existing ethical and leadership record. A significant number (48.2%) of the sampled respondents were of the view that peer leaders were able to effectively share information on substance use. Regarding the assertion that peer leaders had helped the students stand against peer influence, most of the respondents (46.4%) agreed to the assertion. It was also ascertained that a significant number (44.2%) of students agreed that peer leaders had helped them deal with risky situations. Accordingly, 47.5% of the undergraduate students concurred that peer leaders had helped them avoid use of substances. The study, further, established that 43.4% of the respondents admitted that peer leaders had helped them reduce intake of substances. However, 37.0% of the respondents disagreed with the view. Majority of the respondents 45.7% disagreed with the argument that the peer leaders closely monitored the interactions between students already abusing substances and at-risk students. Consequently, most of the respondents (45.7%) also disagreed

that they often sought advice from peer leaders on substance use.

The results also established that in general the students were in admission that new peer leaders were trained on substance use and their adverse consequences (mean=3.59); and that the university encouraged peer counselling overseen by selected peer leaders (mean=3.50). The views of respondents in reference to the foregoing assertions were largely diverse (std dev>1.000). The respondents on average were unsure whether peer leaders in their universities present factual and balanced view of substance use and their consequences (mean=3.41); peer leaders modelled behaviour that can be imitated by their peers (mean=3.39); and that behaviour change groups led by peer leaders had positively changed lives of many students (mean 3.36). Additionally, the respondents were generally unsure pertaining the propositions that peer leaders are chosen based on their past and existing ethical and leadership record (mean=3.35); peer leaders were able to effectively share information on substance use (mean=3.30); and that peer leaders had helped students stand against peer influence (mean=3.25). Similarly, the respondents were generally not sure whether peer leaders had helped them deal with risky situations (mean=3.21); peer leaders had helped them avoid use of substances (mean=3.16) and that peer leaders had helped them reduce intake of substances (mean=3.05).

Moreover, it was revealed that respondents on average concurred that peer leaders closely monitored the interactions between students already abusing drugs and at-risk students (mean=3.03) and that they often sought advice from peer leaders on substance use (mean=2.84). In reference to all the foregoing assertions the respondents opinions were largely diverse (std dev>1.000). This meant that, there was a considerable number of respondents who concurred with propositions put across regarding peer-to-peer leadership programmes. At the same time, an almost equal number of respondents disputed the aforesaid assertions.

Moreover, university counsellors indicated their views regarding efficacy of peer leadership programmes. It was observed that some

universities had peer leadership programmes. These universities recognized that peer leaders are very useful in mobilization and identifying new cases of substance use among students. These leaders were tasked with sensitizing their colleagues on consequences of substance use through peer counselling. These results were in agreement with Osman et al. (2016) which postulated that peer role models can be effective for substance use intervention programmes. However, in some institutions, peer leadership was not actualized; rather it existed only on paper. Others did not have peer leadership programmes at all. Chireshe 2013 agrees with this findings noting that only a few schools had peer counselling programmes.

In institutions where peer leadership programmes were in existence, recruitment of peer leaders was effected through advertisement for vacancies. The Dean of Students worked closely with the student leadership in recruitment of peer leaders. The process involved putting up a notice for interested persons to attend interviews which were conducted face-to-face. In other universities, the positions for peer leaders are advertised upon the recommendation and approval of the pertinent Department. However, the response to the advertisement was found not to be good. Upon recruitment, there is extensive training. The chosen peer leaders worked closely with the student counsellor.

In line with peer leadership, the counsellors viewed that some peer leaders only joined the programme with the aim of improving their curriculum vitae and not as passion, hence required a bit of pushing. In some universities, peer leadership was found to be either fair or excellent in addressing substance use among female undergraduate students. In these institutions, this leadership was established to be quite productive since students enjoyed peer-to-peer interactions. These findings are in agreement with a previous study finding by Hasel et al. which indicated that peer-led programmes significantly reduced substance use rates among the students

Regarding involvement of female undergraduate students in peer leadership programmes, there was recommendation to train both male and female students in order to prepare them to take

up the leadership role. It was also found that in a number of universities female and male students were balanced at a ratio of 1 to 1 with regard to their training as peer leaders. The selected students were trained extensively on all areas including personality development, temperament, communication skills, and etiquette with the expectation they would pass on the insights to their peers within the university. In some institutions, peer leaders were found to be mostly female.

An analysis on the relationship between peer leadership and substance use was carried out. The results of Pearson's Product Moment Correlation Coefficient is presented in Table 2.

**Table 2**

**Correlation between Peer to Peer Leadership and Substance Use**

		Substance Use
Peer to Peer Leadership	Pearson Correlation	-.077
	Sig. (2-tailed)	.212
	N	268

The study revealed that, the relationship between peer-to-peer leadership and substance use among female undergraduate students was negative, weak and not statistically significant ( $r = -.077$ ;  $p = .212$ ). The results were interpreted to mean that the more peer-to-peer leadership was enhanced in local universities, the higher (though slight) the chances that substance use among students would be reduced. The reduction was, however, not noticeable. This could have been attributed to little or no trust of students in their colleagues regarding sensitive issues such as use of drugs. There was the possibility that students who used substances only confided in those students who, to their knowledge, also used the substances. The findings implied that it was imperative to consider other mechanisms of addressing use of drugs by female undergraduate students instead of focusing so much on leadership among peers. The results of the study were in line with those of a past empirical study conducted by Perkins (2002) which revealed that peer leadership was vital in demonstrating the shared concerns among students in respect of substance use prevention



programmes.

Simple regression analysis was employed to establish the strength of the effect of peer to peer leadership on substance use. To achieve this objective, the following null hypothesis was formulated:

$H_{01}$ : Peer-to-peer leadership programmes have no statistically significant effect on substance use among female undergraduates in Nairobi County, Kenya.

The null hypothesis presumed that peer leadership programmes offered in private and public universities in Nairobi County were not so important in addressing substance use among female undergraduate students. To ascertain the truth in this proposition, simple linear regression analysis was carried out. The pertinent results are illustrated in Tables 3 and Table 4.

**Table 3**

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate	Sig.
1	-.077 <sup>a</sup>	.006	.002	1.06418	.212
<b>a. Predictors: (Constant), Peer to Peer Leadership</b>					

The study revealed as shown in Table 3 that the relationship between peer-to-peer led programmes and substance use among female undergraduates was negative and statistically not significant ( $r = -.077$ ;  $p = .212$ ) at .05 level of significance. The results of coefficient of determination ( $r^2 = .006$ ) indicated that only a negligible proportion (0.6%) of variance in substance use amongst female undergraduate students could be explained by peer-to-peer leadership. The findings meant that peer to peer leadership in student circles was hardly relevant in addressing the menace of substance use amongst the aforesaid university students. Therefore, it was imperative to consider other measures of mitigating substance use. The results of simple linear regression analysis of the effect of peer-to-peer leadership on substance use are presented in Table 4.

**Table 4**

**Simple Regression Analysis of Peer-to-Peer Leadership Programmes on Substance Use**

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	1.776	1	1.776	1.569	.212 <sup>a</sup>
	Residual	301.237	266	1.132		
	<b>Total</b>	<b>303.013</b>	<b>267</b>			
<b>a. Predictors: (Constant), Peer to Peer Leadership</b>						
<b>b. Dependent Variable: Substance Use</b>						

In concurrent to the results shown in Table 3, the results of F-statistics presented in Table 4 indicated that the effect of peer-to-peer leadership on substance use was not statistically significant ( $F(1, 266) = 1.569$ ;  $p = .212$ ). Therefore, the null hypothesis which stated that: Peer-to-peer leadership programmes have no statistically significant effect on substance use among female undergraduates in Nairobi County was accepted.

These results are consistent with Parent (2010) who also found that there was no statistical significance difference between the control and intervention groups in relation to the use of peer leadership. The outcome of the current study is in disagreement with a number of studies (Maithya, 2009; Hasel, et al., 2016; and Golonka, et al., 2017) that had identified peer leadership as an effective way through which teachers could use to fight substance abuse among secondary school students.

The current study has established that this approach is not effective for female university students. It is also in disagreement with Osman, et al. (2016) that found that peer leadership was associated with increased consumption of marijuana in Sudan. The current study did not identify peer leaders as individuals that encouraged or pushed other students into the consumption of drugs. It is evident from the current study and the previous studies that researchers are yet to agree on the impact of peer leadership in learning institutions.

It is imperative to observe that the mixed findings in regard to the efficacy of peer to peer leadership can be attributed to the design of the peer leadership programmes. Golonka et al. (2017)

study used natural leaders as the agents of change and found significant levels of success between the control and experiment groups. Consequently, it argued that success in peer leadership will only be achieved when the natural leaders are selected because they appeal to the other members of their groups, which encourages them to follow in these leaders' footsteps. Hasel et al. (2016) quasi-experiment also found a significant reduction in the levels of drug use among students as a result of peer leadership programmes even though it was conducted in boys' and girls' secondary schools. In this case, the peer leaders were used to educate the other members of their groups.

This high level of variation shows that there is need for researchers and practitioners to agree on a structure for peer leadership. The high level of agreement between the studies that involved experiments (Golonka, et al., 2017; and Hasel, et al., 2016) is an indicator that the weakness of the peer leadership as constituted in this study and similar studies such as Parent (2010) is that the peer leaders were incorrectly identified or their influence were under appreciated by the respondents. These findings agree with an earlier study conducted by Kamore and Tiego (2015) which established that there were uncoordinated criteria through which the peer counsellors were selected.

Furthermore, it is imperative to observe that there were significant weaknesses associated to peer leadership programmes in the universities involved, which were also present in some of the previous studies. This study identified poor selection of peer leaders, ineffectiveness of the peer leaders, unqualified peer leaders, and inadequate training, and inadequate assistance from the peer leaders as some of the challenges

these programmes faced. This is consistent with previous studies that peer leaders were ill equipped (Chireshe, 2013), inadequate training (Kamore & Tiego, 2015), and low level of trust from other students (Chireshe, 2013). Therefore, efforts to increase peer review should focus on providing adequate training and equipment while helping them gain the trust of the other students. Furthermore, it is imperative that administrators identify the individuals that are most influential when identifying the peer leaders and ensuring that these individuals have been educated on the ills of substance abuse.

## Conclusion

This study which investigated the efficacy of peer-led programmes in mitigating substance use established that universities encouraged peer counselling managed by peer leaders who had to undergo training on substance use and the adverse consequences of substance use. In addition, the study established that peer leaders are very useful in mobilization and identifying new cases of substance use among students. Peer counsellors were tasked with sensitizing their colleagues on consequences of substance use.

However, this study established that there were significant weaknesses associated with peer leadership that rendered it ineffective. This included poor selection of peer leaders, unqualified peer leaders and inadequate training among others. Moreover, the study established that peer-led approach is not an effective approach as a standalone method. It is imperative that universities combine this approach with other psychosocial intervention measures in order to address the menace of substance use among female undergraduate students.

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