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CONTENTS

Prevalence of Substance Abuse among Students in Medical Training Colleges in South Nyanza Region, Kenya

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Abstract

Substance abuse among the youth is a worldwide public health challenge. An estimated 10-15% of medical students risk substance abuse in their lifetime. Risk potential evaluation would inform appropriate intervention. This study sought to establish the prevalence of substance abuse among medical students. Methods: A descriptive cross-sectional study was carried out involving students in Medical Training Colleges in South Nyanza region, Kenya. A self-administered structured questionnaire was used to collect information on substance abuse. Results: 303 students were recruited for this study. The mean age of the respondents was 21.96 years (18-23, S.D 0.4) with majority being females. Nearly all respondents were Christians 295 (97.4%). More than half (n=159, 52.5%) of the respondents reported having ever used at least one substance. Those who had ever used and who sustained the use of the substances respectively was as follows: alcohol 52.5%, 27.4%; tobacco 12.2%, 2.6%; khat 17.5%, 3.6% and marijuana, 9.2%, 2.0%. Among the prescription drugs, diazepam was abused by 7 (2.3%) of the respondents while shisha (6.6 %) was the commonly abused among the emerging substances of abuse. Conclusion: The lifetime prevalence of any one of the substances abused by students in the medical training colleges was high. There is need for the management of these colleges to mainstream substance abuse preventive measures in their policies.

Key words: *Kenya, prevalence, medical students, substance of abuse*

Introduction

Substance abuse is a major public health problem worldwide, cutting across all social strata and penetrating every part of the globe (Njeri, 2014). In this predicament, the youth are the most affected (Mokua, 2012), leading to indiscipline, academic under achievements and psychiatric disorders among students in colleges (Changalwa, 2012). Substance abuse by students in medical training colleges (MTCs) could equally impact negatively on their future professional conduct and efficiency, and hence compromise the safety of patients (Rai, 2008). This makes substance abuse among MTC students an important area of research due to the implications on public health.

Alcohol remains the commonest psychoactive substance used (Eze, 2015). Although alcohol use has been part of human societies throughout history, its prevalence has increased among the youth particularly college students (Mphele, 2013). Other substances commonly abused in Kenya include tobacco, bhang (marijuana), glue and miraa (khat) (NACADA 2010). Whereas alcohol and tobacco are legally and socially approved in the society, they serve as a 'gateway' to use of other substances as young people begin experimenting with them (Eze, 2015).

Data from different studies indicates that substance abuse is a public health concern especially among MTCs students, who constitute more than 80% of health care professionals in Kenya. According to Nwadigwe (2008) of Nigeria, substance abuse was prevalent among medical students while in South Africa, it was reported that 32% of medical students admitted to taking alcohol exceeding the recommended limits. 55.3% of them were identified as at-risk drinkers (Smit, 2009). In Kenya, it is estimated that 60% of students abuse drugs (Ondieki, 2012). However, information on prevalence of substance abuse among MTC students is still lacking. This

study therefore sought to answer these research questions: What is the prevalence of the substances abused by MTC students in South Nyanza Region, Kenya? And, What substances are abused by MTC students in South Nyanza Region, Kenya?

Methodology

This was a descriptive cross-sectional study conducted in May 2015 at Homa-Bay, Kisii, Nyamira, Migori and Kendu-Bay Medical Training Colleges. Data was collected using a self-administered structured questionnaire that was pre-tested among students at Kisumu MTC and revised accordingly. Information on socio-demographic factors, specific substances abused and their prevalence was collected. The study participants consisted of students in the five medical training colleges in South Nyanza Region. Stratification of the respondents was done based on the college, programme being undertaken, year of study and gender. A proportional sample was determined based on the student population in each college. Thereafter, systematic sampling using the class attendance registers was used to select the respondents. The eligible respondents included all those students who were 18 years old and above

and were in the said medical training colleges at the time of the study and consented to participate in the study. A sample of 303 medical students was recruited for the study.

The study was approved by Maseno University Ethical Research Committee. Data was analyzed using SPSS for Windows version 17 (SPSS, Chicago, IL, USA). Frequencies of all variables were run and descriptive statistics computed to characterize the study population. Descriptive statistics generated was used to obtain prevalence data on the substances abused.

Findings

Demographics

As is shown in Table 1, demographically, the 303 respondents had an average age of 21.96 years (18-23, SD=0.4), with majority being female 153(50.5%). Nearly all respondents were Christian 295 (97.4%), most were single 278 (91.8%), most were enrolled for Diploma in Nursing Sciences 155 (51.2%), and most 117 (38.6%) were in their second year of the study.

Table 1: Characteristics of the Respondents

Characteristics	Frequency, n = 303	Percent (%)
Sex		
Male	150	49.5
Female	153	50.5
Age		
18-23 years	150	49.5
23-33 years	153	50.5
Religion		
Christian	295	97.4
Islam	5	1.7
Others	3	1.0
Marital status		
Single	278	91.8
Married	25	8.2

Course Undertaken by the Respondents		
Clinical medicine	104	34,3
Nursing sciences	155	51.2
Laboratory sciences	14	4.6
Physiotherapy	12	4.0
Community Nutrition	18	5.9
Year of study		
First	111	36.6
Second	117	38.6
Third	58	19.1
Fourth	17	5.6

Prevalence of Drug Use

The study sought to establish past and continuing use of substances of abuse. It is worth noting that 52.5 per cent of the respondents reported having ever used at least one substance of abuse. Table 2 below summarizes the prevalence of past and continuing use of substances of abuse, while Table 3 summarizes the prevalence of abuse of prescription drugs (consuming prescription drugs without medical prescription):

Table 2: Prevalence of Substances Abused by MTC Students in South Nyanza Region

Variable		lifetime use, n=303		Current users, n=303	
Alcohol	Yes	159	52.5	83	27.4
	No	144	47.5	220	72.6
Tobacco	Yes	37	12.2	8	2.6
	No	266	87.8	295	97.4
Khat	Yes	53	17.5	11	3.6
	No	250	82.5	292	96.4
Cannabis	Yes	28	9.2	6	2.0
	No	275	90.8	297	98.0
Heroin	Yes	4	1.3	4	1.3
	No	299	98.7	299	98.7
Prescription Drug	Yes	38	12.5		
	No	265	87.5		
Emerging Substances	Yes	34	11.2		
	No	269	88.8		

Table 3: Prevalence of Prescription Drugs and Emerging Substances of Abuse

Prescription Drugs being used without medical reason		Frequency, n= 303	Percentage
Response	Phenobarbitone	5	1.7
	Diazepam	7	2.3
	Morphine	6	2.0
	Others	24	6.6
	No abusing any	265	87.4
Emerging substances being abused		Frequency, n= 303	Percentage
Response	Shisha	20	6.6
	Kuber	12	4.0
	Shashaman	3	1.0
	Others	3	1.0
	Not abusing any	265	87.5

Discussion

Overall, the findings of this study concurs with other studies that the most often abused substances are alcohol, tobacco, miraa, marijuana, heroin, prescription drugs, shisha and kuber. This compares to the findings by NACADA (2010) on Kenya and the United Nations Office of Drugs and Crimes (2010) on worlwide drug abuse. Ghuman S Meyer-Weitz (Ghuman. S. Meyer-Weitz, 2012) reported similar findings in a study on South Africa.

The study found a lifetime prevalence rate of 52.5% of any one of the substances used / abused. This prevalence was lower than 69.8% that was reported among college students in Eldoret, Western Kenya but higher than the prevalence of 41% reported among high schools in Kenya (Atwoli, 2011). This may imply that substance abuse rates in the country increase with transition through the education system hence the need to focus on substance abuse interventions among the young learners in primary and secondary schools. A statistically significant difference in the lifetime substance abuse prevalence rates was reported between males and females, with males having a higher rate than females. This is consistent with findings in Nigeria (Odeyemi, 2014) and may reflect a more tolerant social attitude towards males as compared to females on substance abuse (Atwoli, 2011).

The study established that more than half (52.5%) of the Medical Students had ever taken alcohol. This was consistent with a study by Otieno (2009) in Kisumu, Western Kenya, which reported that 57.9% of secondary school students had consumed alcohol at least once in their lives. This was expected as alcohol is widely available to adults and its use is legal and accepted in many societies; including the region where the study was conducted. The study also reported that 27.4% of the respondents were still taking alcohol at the time of the study. The current use of alcohol was consistent with National Campaign against Drug Abuse (NACADA) report (2010) that showed the prevalence of alcohol in Nyanza was 26.8%.

Medical students in this study who had ever used tobacco were reported to be 12.2%. This was similar with the national average for tobacco consumption among adults, which was reported to be 14% (NACADA, 2012). The reported prevalence of tobacco use in this study was however lower than the reported findings among secondary school students in Kisumu, Western Kenya, which stood at 34.7% (Otieno, 2009). Comparatively, a higher prevalence of regular smoking at 13.6% was reported among medical students at a university college in Saudi Arabia (Elamin, 2013) and 10% among medical students at a university in Sudan (Elamin, 2013).

Khat chewing among the medical students in the study had a lifetime prevalence of 17.5% while 3.6% of them were still chewing the stimulant at the time of study. This prevalence was higher than the national average reported for the same age group (NACADA 2012). It was however lower than the prevalence reported among secondary school students in Kisumu, Western Kenya (Otieno, 2009). Khat chewing in Ethiopia among college students reportedly had a higher prevalence compared to the findings in this study (Wazema, 2015).

Cannabis had reportedly been used by 9.2% of the medical students. This prevalence was lower than the 18.3% reported among secondary school students in Kisumu, Western Kenya (Otieno, 2009). However, the lifetime prevalence reported in this study was higher than the average national prevalence of 5.4% reported by NACADA among adults (NACADA 2012). This could be attributed to the proximity of South Nyanza Region to the main transit routes of Cannabis since the region borders Tanzania. Most of the Cannabis consumed in Kenya is believed to originate from Tanzania.

Prescription drug abuse is an enormous problem in the modern society resulting in more injuries and deaths than all illegal drugs combined (Halldorsson, 2006). This study established that 12.5% of the medical students admitted ever using prescription drugs without medical reason. The abused prescription drugs were phenobarbitone, diazepam, morphine, emergency pills, misoprostol and antibiotics. The reported findings were higher than the average lifetime prevalence of prescription drug use without medical reason in the general adult population in Kenya (NACADA 2012). This could be explained by the fact that prescription drugs could fairly be accessible to medical training college students given their availability in the clinical areas they practice in. However, the findings were consistent with those of Halldorsson (2006) which reported that prescription drug abuse, specifically benzodiazepines and opiates, was higher among medical personnel than in the general population. These findings were also consistent with those of another study which established that benzodiazepines were the most frequently used sedative-hypnotics among medical students (Akvardar et al, 2004).

The medical students who had ever used emerging substances of abuse according to this study were 11.2%. The emerging substances of abuse used were shisha, kuber, shashaman, cocaine, heroin and barbarian beer. The reported prevalence for kuber was higher than that from another study by Simatwa (2014) which established a prevalence of 2.9% among secondary school students in Kisumu County. Kuber use could be higher because when one is using it, it is not easily noticeable. It does not emit any smoke or smell when it is being abused. Kuber is also cheap and comes in small sachets that are very easy to conceal in any part of the body.

Conclusion

The lifetime prevalence of any one of the substances abused by students in medical training colleges in South Nyanza Region was high and consistent with that of other college students in Kenya. We recommend that the managements of medical training colleges need to mainstream substance abuse prevention in their policies. This could be achieved by creating a more positive campus culture with student academic support, facilitating a wider range of social and recreational activities, institutionalizing alcohol and drug awareness and counseling services.

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Prevalence and Predictors of Multiple Substance Use Disorders in Kenya

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Abstract

Substance use disorders (SUD) is a worldwide public health problem which has massive direct and indirect costs to the individual and society. Multiple substance use disorders, arising from multiple drug combinations, whether serial or simultaneous, pose a serious challenge for drug treatment outcomes compared to a single substance addiction because each substance produces a unique array of physical and emotional effects. This study was undertaken with an aim of determining the prevalence and predictors of multiple substance use disorders in Kenya. It adopted a cross-sectional study design where both quantitative and qualitative data were collected between November and December 2016, covering aged 15 - 65 years. The respondents were identified through stratified multi-stage random sampling. Data on substance use disorders was captured using the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM – 5). According to the findings, the prevalence of past year multiple substance use disorders among respondents was 5.3%. The most commonly reported multiple substance use disorders pattern was alcohol and tobacco (2.5%) followed by tobacco and khat (0.8%); alcohol and khat (0.7%); alcohol, tobacco and khat (0.5%); and alcohol, tobacco khat and bhang (0.3%). The prevalence of past year non-multiple substance use disorders was 10.0%. Findings showed that residing in an urban setting and being male were predictors of multiple substance use disorders. This means that management of multiple substance abuse will benefit greatly from targeted approaches that address risk factors associated with alcohol abuse among male residents of urban areas.

Key words: Multiple substance use disorders, patterns and predictors.

Introduction

Substance use disorders (SUD) is a worldwide public health problem which has massive direct and indirect costs to the individual and society (UNODC, 2012; Koob and Moal, 2006). Problematic alcohol and drug use has a negative influence on the affected individuals, their families and society (Toumbourou, 2007). Data from UNODC shows that among the estimated 271 million past-year users of any drug, some 35.0 million or almost 13 per cent are estimated to suffer from drug use disorders (UNODC, 2019). WHO (2018) also indicates that 3 million deaths every year result from harmful use of alcohol, representing 5.3% of all deaths.

Multiple substance use disorders as a result of multiple drug combinations, whether serial or simultaneous, pose a serious challenge for drug treatment outcomes compared to a single substance addiction because each substance produces a unique array of physical and emotional effects (EMCDDA, 2009). Overall, SUDs contribute substantially to morbidity and mortality (Grant et al., 2016; Hasin et al., 2016). While several studies have documented high rates of polysubstance use behaviors, these studies often fail to examine concurrent or multiple DSM-5 SUDs beahaviours (Armour et al., 2014; Chen et al., 2014; Connor et al., 2014; and McCabe et al., 2015). Based on these high rates of polysubstance use behaviors, future research is needed that shifts from measures that are substance-specific to more sophisticated measures that account for multiple SUDs (Connor et al., 2014).

The 2012- 2013 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) indicated that the majority of adults with past-year DSM-5 SUDs had at least one other co-

occurring SUD, ranging from 56.8% for adults with prescription opioid use disorder to 97.5% for adults with hallucinogen use disorder (McCabe et al., 2017). This NESARC analysis also found that males, younger adults, African-Americans and those with concurrent psychiatric disorders had increased odds of having multiple past-year SUDs.

Moreover, studies have found that persons with multiple SUDs have increased likelihoods of overdose, suicide, risky sexual behaviors, infectious disease and worse treatment outcome (Connor et al., 2014; Petry, 2001). Taken together, individuals with multiple SUDs likely constitute a more severe subset of patients with added barriers to accessing and engaging in SUD treatment services. A better understanding of the prevalence, patterns, and correlates of multiple past-year SUDs among primary care patients may therefore help to more accurately triage patients into risk categories and facilitate linkage to proper care (John et al., 2018).

Despite this need, data currently available on multiple substance use disorders is largely targeting primary care patients and adolescents with very limited focus on the general population. Further, there is limited data on the prevalence and predictors of multiple substance use disorders in an African and Kenyan context.

Methodology

A cross-sectional study was conducted where both quantitative and qualitative data was collected. This study was undertaken between November and December 2016. The study covered all the eight regions of Kenya, namely: Nairobi, Coast, Nyanza, Western, Central, Eastern, North Eastern and Rift Valley. The sample size was informed by the desired level of accuracy and the cost of the survey. Based on the accuracy of data, the margins of error associated with sampling and other random effects at 95%, confidence level was kept at a maximum of +/-1.4% for a sample size of 3,136 households.

A stratified multi-stage random sampling technique was used to identify the enumeration areas for data collection. At the national level, all the eight regions (Nairobi, Central, Eastern, Rift Valley,

Western, Nyanza, Coast and North Eastern) were purposively selected and the 3,136 sampled households were distributed proportionately across all the regions. The first stratification was applied at the county level, where the 47 counties were stratified based on their unique cultural, socio-economic and geographic characteristics. However, due to logistical and resources limitations, a purposive sample of 31 counties was randomly selected from each stratum. From each county, sub-counties were randomly selected and then two divisions were randomly selected from each sub-county. One location was then selected randomly per division. The enumeration areas (sub-locations) were randomly drawn from each selected location and the sample was proportionately distributed based on the total population distribution. At the sub-location level, a landmark (e.g. a school) was identified and selected to determine the starting point. The direction was determined by spinning a pen in the air and letting it drop on the ground. The date score was then used to determine the first household to be sampled.

The second stratification was done at the household level. Potential respondents were stratified by their age (15-35 years and 36-65 years) and gender categories. The Kish Grid was used to identify a potential respondent based on age and gender categories in a given household. Subsequent households were then selected using the random walk method, turning left or right at every junction. After administering the first interview, systematic random sampling was used where every 3rd household was selected to participate in the study.

Data Collection

Supervisors and research assistants were trained for three (3) days in Nairobi. This involved a detailed discussion of each question in the instruments and mock interviews among themselves. Training also involved extensive discussions of the street names of all drugs and substances of abuse in the country and compilation of a list of such names for easy referencing during data collection. After training, a pre-test of the questionnaires was carried out in three sampled sub-locations that were not part of the main study. The questionnaires were revised to

accommodate observations and variations that were made during the pre-test.

Data was collected for a period of eight weeks from November to December 2016. Data collection was divided into three clusters, namely: Nairobi/Eastern/Coast, Nairobi/Central/North Eastern/Lower Rift Valley and Nairobi/Nyanza/Western/Upper Rift Valley.

A structured questionnaire with open and closed questions was used to collect data on drugs, background characteristics and substance use patterns. Data on substance use disorders was captured using the fifth edition of the Diagnostic and Statistical Manual of Mental Disorder (DSM – 5) (American Psychiatric Association, 2013). It was applied to identify respondents with substance use disorders among those respondents who had used alcohol and other drugs in the last one year prior to the survey. The DSM-5 recognizes substance related disorders resulting from the use of ten separate classes of drugs: alcohol, caffeine, cannabis, hallucinogens, stimulants, tobacco and other substances. Substance use disorder was defined as meeting two (2) or more DSM – 5 criteria (American Psychiatric Association, 2013).

Data Analysis

An interviewer screen was developed for data entry to minimize errors. Quantitative data was coded, sorted, entered and analysed using SPSS software version 20. Descriptive statistics were used to describe, organize and summarize collected data. Multivariate logistic regression was used to identify the predictors of multiple substance use disorders.

Results

Background Characteristics

According to the findings, 48.8% of the respondents were male and 51.2% were female. In terms of age, 26.1% were 15-24 years, 33.8% were 25 - 35 years and 40.1% were 36 - 65 years. In terms of marital status, 60.8% were married, 29.1% were single and 10.1% were divorced / widowed. In terms of education level, 42.5% had primary level education, 37.9% secondary level education, 12.5% post-secondary level education and 7.1% had no formal education.

Patterns of Multiple Substance Use Disorders in Kenya

As summarized in Table 1, the prevalence of past year multiple substance use disorders among respondents aged 15 – 65 years in Kenya was 5.3%. The most commonly reported multiple substance use disorders pattern was alcohol and tobacco (2.5%) followed by tobacco and khat (0.8%), alcohol and khat (0.7%), alcohol, tobacco and khat (0.5%), alcohol, tobacco, khat and bhang (0.3%), alcohol, khat and bhang (0.2%), alcohol, tobacco and bhang (0.2%) and lastly alcohol and bhang (0.1%).

Table 1: Patterns of multiple substance use disorders in Kenya

Patterns	Prevalence (%)
Alcohol + tobacco	2.5
Tobacco + khat	0.8
Alcohol + khat	0.7
Alcohol + tobacco + khat	0.5
Alcohol + tobacco + khat + bhang	0.3
Alcohol + khat + bhang	0.2
Alcohol + tobacco + bhang	0.2
Alcohol + bhang	0.1
Multiple substance use disorders	5.3

Source: Survey data, 2017

Non- Multiple Substance Use Disorders in Kenya

As summarized in Table 2, the prevalence of past year non-multiple substance use disorders among respondents aged 15 – 65 years in Kenya was 10.0%. Alcohol use disorder was the most common non-multiple substance use disorder followed by tobacco use disorder at 2.5%, khat at 0.9% and bhang at 0.5%.

Table 2: Patterns of non-multiple substance use disorders in Kenya

Patterns	Prevalence (%)
Alcohol only	6.1
Tobacco only	2.5
Khat only	0.9
Bhang only	0.5
Non-multiple substance use disorders	10.0

Source: Survey data, 2017

Predictors of Multiple Substance Use Disorders

Table 3 shows findings from multivariate logistic regression analysis with multiple substance use disorders being the dependent variable. Results showed that setting p=0.004 and gender p=0001 were significant predictors of multiple substance use disorders.

In terms of setting, respondents from urban areas had a higher likelihood of having multiple substance use disorders compared to those in the rural areas. Further, males had a higher likelihood of having multiple substance use disorders compared to females.

Table 3: Correlates of multiple substance use disorders

Variable	P - value	Odds Ratio	95% Confidence Interval	
			Upper	Lower
Region	0.348	1.049	0.949	1.161
Setting (Urban or Rural)	0.004	1.892	1.223	2.926
Age	0.109	0.778	0.572	1.058
Gender	0.0001	8.760	5.071	15.132
Religion	0.724	0.917	0.565	1.486
Employment Status	0.539	0.941	0.775	1.142
Education Status	0.182	1.184	0.924	1.516
Marital Status	0.222	0.769	0.504	1.172
Economic Status	0.149	1.192	0.939	1.514

Source: Survey data, 2017

Discussion

Prevalence of Multiple Substance Use Disorders in Kenya

The study shows that alcohol was a major contributor to the different patterns of multiple substance use disorders. Other studies have also established that alcohol contributes to most multiple substance use disorder patterns (Novais, Pombo and Ismail, 2016; and Windle and Sheidt, 2004). This therefore points to the need for alcohol prevention, treatment and control programs in order to reduce the prevalence of multiple substance use disorders in Kenya.

Non-Multiple Substance Use Disorders in Kenya

The prevalence of past year non-multiple substance use disorders among respondents aged 15 – 65 years in Kenya was 10.0%. Alcohol use disorder was the most common non-multiple substance use disorder followed by tobacco at 2.5%, khat at 0.9% and bhang at 0.5%. Alcohol use disorder has been reported in other studies as the major substance use disorder in Kenya (NACADA, 2017).

Predictors of Multiple Substance Use Disorders

Findings from multivariate logistic regression analysis showed that setting and gender were significant predictors of multiple substance use disorders. Respondents from urban setting had a higher likelihood of having multiple substance use disorders compared to those from rural setting. According to Dixon and Chartier (2016), geographic location can be an important factor in determining a person's level of risk for alcohol-related problems. Certain factors associated with living in an urban or rural area may increase risk, while others may be protective. Availability of substances, norms for acceptable drinking behaviors, demographic characteristics, and economic factors all vary with respect to geographic area and may influence drinking behaviors. In a study by SAMHSA (2013), the prevalence of past 12–month alcohol use dependence was higher in metropolitan areas compared to non-metropolitan areas. Dawson,

Hingson and Grant (2011) reported that 12–month alcohol use dependence rates among urban and rural residents were similar. Grant (2007) reports that urban and rural residents had similar rates for lifetime alcohol dependence. Available evidence presents comparative challenges in the different contexts with a focus on alcohol and therefore there is need for more research in this area.

In terms of gender, males had a higher likelihood of having multiple substance use disorders compared to females. This finding collaborates the findings in other studies and reports: The 2012– 2013 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (McCabe et al., 2017); Almarri and Oeii (2009); Sintov et al (2009); and John et al (2018).

The findings of this study did not show any significant differences in the prevalence of multiple substance use disorders across the different age groups. This contrasts with John et al (2018) who reported a higher likelihood of multiple substance use disorders among the younger primary care patients. Although the findings contradict, the target population was also different, with one study focusing on the general population and other one focusing on primary care patients. As such, more research is needed to understand the effect of age on likelihood of multiple substance use disorders.

Conclusion

The prevalence of Multiple Substance Use Disorders within the general population in Kenya is relatively high. This presents treatment challenges for persons seeking recovery services as a result of complicated interactions of the different substances involved. Further, since multiple substance use disorders are difficult to treat, the outcome is often likely to be severely affected leading to overall low rates of success. Early identification programs need to be emphasized so as to minimize the risks of multiple substance use disorders.

The study established that alcohol is a major contributor to the different patterns of multiple substance use disorders. In addition, alcohol use disorder was found to be the most common non-multiple substance use disorder in Kenya. It

therefore implies that alcohol prevention and control programs will be critical in the management of multiple substance use disorders.

The study showed that living in an urban setting and being male increases the risk of multiple substance use disorders. This implies that implementation of prevention programs with an approach more targeted at males in urban setting may be effective in addressing the risk factors associated with multiple substance use disorders.

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Parental Involvement in the Management of Drug Abuse Crisis among Children and Youth in Kenya

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Abstract

The World Drug Report 2019 shows that in 2017, an estimated 271 million people, or 5.5 per cent of the global population aged 15-64, had used drugs in the previous year and that the drug problem had reached crisis level. The report indicated that the crisis affected young people irrespective of gender. Substance use in early age leads to many negative outcomes in adulthood including compromised work efficiency, poor family relationships and disrupted educational achievement. Though drug abuse is a major concern worldwide, the strategies adopted to address it do not succeed when they don't factor the range of factors that impact young people's lives, key among them parental involvement. Parental involvement refers to the amount of participation a parent has when it comes to a child's life. Research has shown that parents play a major role in preventing substance abuse among children and youth, including those who have initiated drug use. This paper is a desktop review of research and reports on parental involvement and its impact on management of drug and substance abuse (DSA) among children and youth with a view to making recommendations to address the problem. The paper concludes that parental monitoring and supervision of their children's friendships are critical for DSA prevention. It thus recommends that parents should set rules for their children's activities and monitor their friends as well as social engagement to ensure appropriate behavior and reduce chances of involvement in drug and substance abuse. law, trade in counterfeit alcohol brands that is not properly regulated, devolution of alcohol control function, litigations against the Act, and inadequate knowledge concerning the law.

Key words: Drug and substance abuse, crisis, children and youth, parental involvement, Kenya.

Introduction

The World Drug Report (2019) indicates that drug use continues to exact a significant toll, with valuable human lives and productive years of many being lost. The report shows that while 35 million people worldwide suffer from drug use disorders, only 1 in 7 receive treatment. Additionally, the report also shows that in 2017, an estimated 271 million people, or 5.5 per cent of the global population aged 15-64, had used drugs in the previous year, similar to the number estimated in 2016. However, this meant that the number of people who were using drugs in 2019 was 30 per cent higher than it was in 2009, when 210 million had used drugs in the previous year. The most widely used drug worldwide continues to be cannabis, with an estimated 188 million people having used the drug in 2016 according to the World Drug Report 2019. Illicit drugs used included marijuana/hashish, cocaine including crack, heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used non-medically.

In the US, the abuse of alcohol, tobacco, and illicit drugs are the leading causes of preventable and premature deaths and disabilities. For example, in 2007, an estimated 19.9 million Americans aged 12 or older were reported to be illicit drug users (NSDUH, 2007), representing 8 per cent of that age group. Of this number, 14.4 million had used marijuana while 2.1 million (0.8 per cent of the population) had used cocaine.

Different researches have shown that people who inject drugs (PWID) experience multiple health consequences such as increased risk of fatal overdose and blood-borne infectious diseases such as HIV and Hepatitis C. According to the World Drug Report (2019), the number of people who inject drugs worldwide stood at 11.3 million in 2017, with 43 per cent of these residing in just three countries - China, the Russian Federation and the United States. The same report found that deaths attributed to the use of drugs remained unacceptably high with 585,000

deaths in 2017. More than half of those deaths were due to untreated Hepatitis C leading to liver cancer and cirrhosis; while almost one third were attributed to drug use disorders.

Prevalence of Drug Abuse In Kenya

A survey conducted by the National Authority for the Campaign against Alcohol and Drug Abuse (NACADA) dubbed Status of Drugs and Substance Abuse among Primary School Pupils in Kenya in 2019 revealed that drug use remains prevalent despite intensified attempts by the government to create awareness on effects of drug use. The survey, which covered 3307 pupils from 177 primary schools across 25 counties, revealed that children as young as 4 years were abusing drugs. The children were most likely to use drugs during school holidays, on their way home and during weekends. The most common sources of drugs were cited as small shops and bars near schools, friends and school workers. This implies that parents are also involved in the supply of substances and drugs to the children.

These findings collaborated those of a study by Kiringa (2015) on drug use by pupils in public schools in Kitui West district, Kitui County in Kenya, which established that the commonly abused drugs are tobacco, alcohol, khat and marijuana.

Risk Factors for Children and Youth Substance Use

While different factors, including genetic, psychiatric disorders, high or low socio-economic status, low self-esteem, or poor self control, determine the risk of drug use among children, the main determinant is the extent to which the individual believes that these substances might cause self harm.

In a national survey on drug use and health (NSDUH, 2013) in the US, young people aged 12 – 17 years were asked whether they thought they risked harming themselves if they used various substances, measured on a scale ranging from great risk, moderate risk, slight risk, to no risk. In the survey, 65.7% perceived great risk in smoking one or more packs of tobacco cigarettes per day; 63.9%

perceived great risk in having four or five alcoholic drinks nearly every day; 39.7% perceived great risk in having five or more drinks once or twice a week; 43.6% perceived great risk in smoking marijuana once or twice a week; 26.5% perceived great risk in smoking marijuana once a month; and 80% and 78% respectively perceived much higher risks for heroin and cocaine.

Notably, it was found that use of these substances was much lower among youth who perceive them as conferring great risk than among those who did not think they posed a great risk. These findings indicate that increasing children's awareness of potential harm of using substances is a strong deterrent of drug abuse.

The Role of Parents in Drug Use or Avoidance

Different studies have noted that there is an inverse relationship between school success and substance abuse (Cook and Moore, 2000). Moreover, research has pointed to correlation between the school and the social context in the phenomenon of abuse. The Social Ecological Theory (SET) developed by Berkowitz and Perkins (1986) explains that the causes of substance abuse among young people are within the social or home environment. The central tenet of SET is that individual behaviors are mainly the result of socialization, and therefore the social institutions that shape it must change if the individual is to stop drug use. The theory posits that many factors in the home environment can influence a child's attitudes and propensity to use drugs, which include: living with parents who abuse alcohol and other drugs, witnessing fights at home, parental neglect, parental depression or psychopathology, parents providing mixed messages about drugs, and permission for unlimited access to social networking.

In Kenya, the study by Kiringa (2015) found that some of the drug abusers come from families where local brews are made, cannabis is available, and in many cases, where children are given excess pocket money which they end up using in purchasing drugs. The study concluded that drug abuse as a problem can be handled by both the teachers and parents in collaboration while the government should enforce laws to reduce the vice in schools.

In addition to the home environment, Kenyan children particularly students in many schools face a great risk of being recruited into the abuse of drugs and substances by peers and drug barons / firms engaged in the production of various brands of unsafe products.

In the survey conducted by NACADA in 2019 (in collaboration with Kenya Institute for Public Policy Research and Analysis (KIPPRA)), it was found that pupils from families where one or both parents or guardians use drugs or substances of abuse were more likely to use the same, a finding which is in agreement with a study by Maithya and Marais (2015). Also very likely to use drugs were pupils with knowledge of a friend or schoolmate using drugs or those who accompany parents to events where alcohol or any drug is being served.

Common risk factors mentioned in the report include weak parental guidance and enforcement of laws, family conflicts, exposure to advertisements of drugs, negative role modeling by teachers, and existence of bars or small shops near schools.

These findings are collaborated by a study by NSDUH (2007) which shows that parent substance use disorders (SUDs) can have negative impacts on children, including lower socio-economic status, more difficulties in academic and social settings, and family dysfunctioning. SUD is characterized by inability to control use of the substance; failure to meet personal, home and work obligations; and poor health.

Based on combined 2009 to 2013 data (NSDUH, 2013), about 8.7 million (12.3 percent) children aged 17 or younger lived in US households with at least one parent who had an SUD. About 7.5 million (10.5 percent) children lived in households with at least one parent who had an alcohol use disorder, and about 2.1 million (2.9 percent) children lived in households with at least one parent who had a past year illicit drug use disorder.

Another factor that pushes drug, as was found by a study Adan (2016) on students in public secondary schools in Wajir County, is peer pressure coupled with lack of school policies on drug and substance abuse and parental encouragement due to poverty. In another study targeting public secondary

schools in Nairobi, Cheloti and Gathumbi (2016) established that lack of participation by parents and guardians was frustrating drug and substance abuse intervention efforts in schools. The study concluded that use of school community was not effective in DSA intervention and thus recommended that head teachers should collaborate with parents to address use of drugs in schools.

Parental Involvement and Drug Abuse Interventions Among Children and Youth

Building on the findings highlighted above, it emerges that early intervention to address the factors often has a greater impact than later intervention when it comes to helping children avoid drug abuse (NACADA, 2019).

This means that parental monitoring and supervision of friendships are critical for drug abuse prevention. One way parents can do this is by setting rules for children activities, monitoring friends and controlling the amount of time spent in social networking. Parents must also offer praise for appropriate behavior.

Parents should also act as role models to their children by restricting drug use when they are with their children and avoiding storing substances and drugs at home.

Parental monitoring of children's behavior and strong parent-child relationships are positively correlated with decreased drug use and abuse among learners (Meyer and Cahill, 2004). According to the NSDUH report (2007), parents play an important role in preventing substance abuse among children and youth. For example, talking with a child about the dangers of substance use and showing disapproval of such behavior is a key factor. It is also essential that parents stay involved in a child's day-to-day activities.

According to the NSDUH (2013) national survey, most adolescents aged 12 to 17 believed that their parents would strongly disapprove of their having one or two drinks of an alcoholic beverage nearly every day (89.6 percent), smoking one or more packs of cigarettes per day (92.1 percent), and using

marijuana or hashish once a month or more (93.3 percent).

A similar study by NIDA (2018) shows that in the US, about 90% of the youth believe their parents would strongly disapprove of their using substances, including tobacco, cigarettes, alcohol, or marijuana. Most importantly, youths aged 12 to 17 who believed their parents would strongly disapprove of their using specific substances were less likely to use these substances than those who believed their parents would somewhat disapprove or neither approve nor disapprove. Among youths who perceived their parents would disapprove of smoking one or more packs of tobacco cigarettes a day, 4.6% of them smoked. In sharp contrast, of youths who believed their parents were not strongly opposed, 31.9% smoked at a rate of 7 times higher. The same differences were found for marijuana use. Among youth who perceived a strong level of disapproval of marijuana use, 4.3% used, but among those who thought their parents were not strongly opposed, 31% used the drug. This indicates that when parents do not set behavior rules for their children, chances of abusing drugs are high.

Based on these findings, parental intervention with risk factors often has a greater impact than later intervention when it comes to helping a child move away from drug problems and drug abusing peers.

A report by SAMHSA (2008) on drug use and health clearly shows that there is a causal relationship between parental involvement and the prevention of drug and alcohol use in adolescents and teens. According to the report, parents who want to keep their children off drugs need to remain directly involved in their children's day-to-day lives and at the same time remain honest about the perils and negative effects of drug use.

The involvement of parents in the lives of children is however often a challenge since most parents have limited time to spend with their children, especially in urban areas where most of them are employed. In addition, research findings reveal that parents are often not good role models for their children, and are also not supportive when teachers are disciplining students who abuse drugs on school property (Maithya & Marais, 2015).

According to this study, failure to involve all stakeholders in the war against drug abuse particularly parents who are role models to the children will mean that more and more adolescent children will risk losing their lives in addition to dropping out of school. Additionally one of the challenges reported by teachers in dealing with drug abuse among students in secondary schools was how to monitor children out of school especially in day secondary schools. For these students, intensive counseling which may not be available in the school is important and particularly by parents.

As such, it seems logical that society should think in terms of preventive measures to address drug abuse among young people while at the same time encouraging parents to play their role in equipping children with values that make children serve the society better.

Further emphasizing the role of parents in children's behavior was the finding in the NIDA (2018) survey which indicated that if parents frequently helped with homework, the illicit drug use by youth was 7.6%, but was 18.1% among youth who reported that their parents "seldom" or "never" helped. Cigarette smoking and binge alcohol use were found to be lower among youths whose parents "always" or "sometimes" helped with homework while youth who spent a lot of time on social media websites were far more likely to use drugs.

These findings are in line with those of Coombs and Landsverk (1988) who emphasize that behaviors are enhanced when behavioral expectations are clearly specified and reinforced with praise, encouragement, and other positive rewards. Further, they also argue that parents have great potential for influencing the behavior of their adolescent children. This therefore calls for more involvement, attention and follow-up of children by their parents and guardians to reduce or eliminate possibilities of their predisposition to DSA addiction.

On the reverse side, as was documented by Baumrind (1975), neglectful and permissive parenting leads to psychological disorders and anxiety in adolescents and youths, which are risk factors for substance abuse. Another study by Timpano, Carbonella, Keough, Abramowitz, and Schmidt (2015) shows that parenting styles that include low parental

involvement, inconsistent discipline, and poor monitoring of adolescents can lead to teens having mood disorders and depression, making them susceptible to peer influence as well as drug and alcohol abuse.

Studies by Mussen, Maccoby and Martin (1983) and Timpano et. al (2015) show that authoritative parenting is associated with the best outcomes regarding adolescent substance use, and neglectful parenting with the worst, with children of permissive parents reporting more substance use than children of authoritative parents.

However, according to a study conducted by Cheloti, Okoth and Obae (2018) in Nairobi County, most parents are not aware of their specific parenting styles while others apply different styles haphazardly with the hope of arriving at a disciplined set of children.

This calls for initiatives to create awareness among parents on the parenting styles that work particularly in relation to DSA.

Way Forward and Recommendations

The literature reviewed in this paper shows that parents play a significant role in the lives of their children particularly in relation to drug and substance abuse. Consequently, to address the DSA menace among children and youth effectively, there is need for involvement of parents and other stakeholders in collaborative intervention and prevention strategies. It is also evident that early intervention to address risk factors often has a greater impact than later intervention when it comes to influencing children developmental path toward positive behavior. In view of the foregoing, the paper recommends that:

One, Parents be trained on parenting styles that are effective as well as the various substances of abuse so that they can equip their children with positive values and to understand their children's needs. In addition, the parents should be empowered to foster healthy environments in their families where children will feel free to express themselves and their problems with a view to helping them where necessary.

Two, parental monitoring and supervision of friendships should be encouraged as critical components for drug abuse prevention. This can be done through setting of rules for children's activities, monitoring friends and social engagements, limiting social networking, praising appropriate behavior, and maintaining consistent discipline guided by family rules. Such would reduce children's involvement in risky behaviors and especially drug and substance abuse.

Three, parents should be actively involved in their children's day-to-day activities. These would include talking with them about the dangers of substance use and showing disapproval of substance abuse.

Four, parents should actively collaborate with school authorities in monitoring an understanding the behavior of their children. On the same note, schools can organize for scheduled meetings in collaboration with parents to interact and guide students especially on matters affecting educational outcomes. This is because failure to meet academic targets can lead to stress which is a risk factor for drug abuse. Such a move would also give an opportunity for school administrators to sensitize the parents on the risks of negative modelling and keeping drugs at home.

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Relationship Between Attachment Styles And Risk For Problematic Drug Use Among Undergraduate Students In Selected Universities In Kenya

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Abstract

Problematic drug use among university students has serious consequences on their overall wellbeing, has potential to inhibit successful transition to the work force, and could predicate substance related problems later in life. Problematic drug use impacts socioeconomic development by affecting potentially skilled work force and increasing the burdens of both the healthcare and the criminal-justice systems. Whereas many studies have been conducted among students in universities in Kenya, most ignore the multidimensional underlying factors including behaviour, attitudes and motivations, that influence propensity to problematic drug use. This study was designed to determine whether there is a significant difference in the risk for problematic drug use among students with different attachment styles. Attachment style here refers to the socio-emotional behavioural systems that guide how individuals manage their needs for emotional security. Attachment styles thus play an important role in how people self-adapt. The study employed a correlational research design using self-administered questionnaires to collect information on both attachment style and drug use. A sample of 400 respondents was selected from four universities, two public and two private, located in Nairobi and Kiambu counties. Statistical analysis of the findings of the study showed significant correlation between attachment styles and problematic drug use, meaning that individuals who manifest anxious attachment style have a higher risk for problematic drug use. This finding has a major implication of prevention and treatment of problematic drug use since effectiveness is to a major degree predicated on an individual's attachment pattern.

Keywords: problematic drug use, Attachment styles, University students, Kenya.

Introduction

Problematic drug use among young adults aged between 18-29 years has been and continues to be a major concern to governments across the globe. This is because of its serious negative health related and socio-economic consequences affecting both the user and their surrounding communities (NACADA, 2017; United Nation Office on Drugs and Crime [UNODC], 2018). For instance, the World Health Statistics Report by World Health Organization [WHO] (2016) pointed out that nearly 25% of total deaths among people in this age group were related to drug use. This percentage is higher than that of global drug related deaths which is recorded at 11.6%. Further, governments across the world are concerned because trends indicate an upward trajectory in drug consumption (WHO, 2016; UNODC, 2018; Arnett, 2014)

Although drug abuse problems affect the entire spectrum of society, (Odejide, 2006; Oshodi, Aina, & Onajole, 2010), it is becoming increasingly evident that university students are at a higher risk of recruitment into drug consumption than other people groups. This has been affirmed by different national surveys and research studies (NSDUH, 2016; Rahmania et al., 2015; Atwoli et al., 2010; Ndegwa et al., 2017; Osman et al., 2016; Labrie, 2012; Arnett & Sussman, 2014). Further to this, Arnett 2014 found that university students have a higher problematic drug use prevalence than their non-university peers.

The reason behind this is that university study is a major transitional period for the students, who experience independence and freedom from direct

adult and family supervision, self-decision-making, and intense academic pressures. Sharing living quarters with strangers, forming new social groups and balancing social engagements with academic and other life responsibilities adds to the pressure. All these change can be very stressful for an individual and thus increase their attachment needs (Arnett & Sussman, 2010).

Problematic Drug in Kenyan Universities

Problematic drug use by university students has different consequences which include: Increase in drug related deaths by 8% within the last decade (National Survey on Drugs Use and Health (NSDUH) report (2016)); Increase in number of students who report driving under influence of at least one drug from 25.5% to 31.4% (Labrie, 2012); Poor academic performance, physical and sexual assault, vandalism and even death (Labrie, 2007); Other long term problems (Patrick, Schulenberg, O'Malley, Johnston & Bachman, 2011).

Studies carried out in Kenyan universities have shown similar patterns as those reported in other nations. The prevalence of lifetime use of at least one drug among students in various universities ranged between 77% and 84% (Ndegwa, Munene, & Oladipo, 2017; Atwoli, Mungla, Ndung'u, Kinoti, Ogot, 2011; Andanje, Rintagu,& Mundia 2011). Problematic drug use was also relatively higher among university students compared to their non-university (Ndegwa, Munene, & Oladipo, 2017).

The problematic drug use by university students results into various consequences that include fatal and non-fatal injuries; academic failures (Ndegwa et al., 2017); violence and other crimes (Rono, 2014); unsafe sexual behaviour (Atwoli et al., 2011); accidental and self-inflicted injuries (Ndegwa et al., 2017); and, is associated with long term repercussions to health and wellbeing (Masudi, 2011).

The consequences of problematic drug use among university students extend to communities neighboring the campuses, which include physical, verbal and sexual assault, vandalism and aggressive confrontations, and sleep disturbances (Masudi, 2011).

Attachment Styles and Problematic Drug Use

A majority of the interventions programs carried out by universities in Kenya at policy, preventative and curative levels focus on manifesting behaviours but ignore the underlying factors (Rono, 2014 and Patrick et al., 2011)). This approach is problematic since drug use is multidimensional, encompassing behaviours, attitudes, and motivations.

In the recent past, research studies (Kassel et al., 2008; Thorberg and Lyvers, 2010; Borhani 2013; Rahmanian et al., 2015) have focused attention on the role of psychosocial factors, and more specifically relational factors in the incidence, prevention, and treatment of problematic drug use. Relational variables such as parenting styles, parental drug use (Rahmanian et al., 2015) and interpersonal interaction and attachment patterns (Borhani, 2013; Thorberg and Lyvers, 2010; Rahmanian et al., 2015) have been correlated with Substance Use Disorders (SUDs). The link between familial factors and problematic drug use are important since the family system is the individual's basic socializing agent.

The attachment bond, which an individual establishes in early infancy through interaction with caregivers, influences behaviours, thought and emotions throughout their lifespans (Dick, & Agrawal, 2008). The bond is expressed differently by diffternet individuals based on how they percieve their attachment figure. These differences are reffered to as Attachment Styles.

Attachment styles are thus the socio-emotional behavioural systems that guide how individuals manage their needs for emotional security (Mikulincer & Shaver, 2013). Attachment styles play an important role in how people self-adapt and avoid risk behaviours, more so during times of major transitions (Rahmanian et al., 2015).

Attachment styles exhibited by individuals are closely linked to psychological wellbeing (Molnar et al., 2010), support seeking (Kassel et al., 2008), social interaction (Laundrau & Short, 2010), and

intrapersonal as well as interpersonal functioning (Kuijper et al., 2012). Studies show that insecure attachment styles are more likely to be associated with negative emotion, poor coping skills, immature mechanisms, impaired cognitive styles and interpersonal conflict (Borhani, 2013). The insecure attachment styles in addition lead to eating disorder and aggression (Landrau and Short, 2010), affective problems, psychological distress (Thorberg and Lyver, 2010) and addiction (Davidson and Ireland, 2009; Therberg and Lyvers 2010; Borhani 2013). On the other hand, secure attachments appear to be a protective factor for promoting healthy development and higher sense of wellbeing.

Empirical studies confirm that patients addicted to alcohol and other psychoactive substances are very likely to have insecure attachment styles and to display severe anxiety and avoidance in attachment dimensions (Wyrzkowska et al., 2014, Borhani 2013, Thorberg & Lyvers 2010). In their research, Wyrzkowska et al (2014) found that individuals who have insecure attachments and have Substance Use Disorders often manifest higher levels of anxiety, depression and schizoid traits, and alexithymia.

It is therefore necessary to note that different attachment styles manifest through different pathways (Rahmanian et al., 2015). This was affirmed by Stepp, Morse, Yaggi, Reynolds, Reed, & Pilkonis (2008) and Landrau and Short (2010) who established that anxious attachment style is associated with interpersonal sensitivity, interpersonal aggression and need for social approval; while avoidant attachment style is associated with low level of interpersonal sensitivity and need for social approval. It is from this background that different studies are now drawing a connection between Problematic Drug Use and attachment styles.

These studies, however, have had two shortcomings. One, they review attachment styles from a broad perspective and analyse the insecure attachment styles deeper; and Two, they were carried out in high income countries.

Investigating Attachment Styles and Problematic Drug Use in Kenyan Universities

This study therefore set out to examine the role played by specific attachment styles on problematic drug use among university students in Kenya.

This study hypothesized that there is no significant difference in risk of problematic drug use patterns across different attachment styles. It employed the Self-Medication Hypothesis and Attachment Theory to provide context for analysis and discussion of the findings.

Methodology

Undergraduate university students between the ages of 18 and 29 were selected from two public and two private universities in Nairobi and Kiambu counties. The universities that were selected draw their students from all counties in the country. This enabled the research to capture a wider scope and varied environments occupied by the Kenyan university student population hence making the study representative.

The study used a mixed method of sampling to select the sample for the study. These included purposive sampling of counties with the highest number of both public and private universities and stratified sampling for selection of both public and private universities. The participants in the study were then selected using simple random method until the sample size was arrived at. The Yamane (1967) Formula for determining sample size was used to arrive at the sample:

Equation 1: Yamane's Formula for sample size determination

$$n = \frac{N}{1 + N^{*}(e)^{2}}$$

N= 62,954 (Target population)

e= margin of error, 0.05

n= 62,954/1+62,954* (0.05)2 = 399.9

Therefore the sample population was 400 students.

Research Design

The study adopted a correlational research design

to establish the relationship between the study variables. This design was appropriate in the study as it used the data collected to assess the degree and variation in the relationship that exists between attachment styles and problematic drug use among university students.

Materials and Measures

The study the Experiences in Close Relationships - Revised (ECR-RS) questionnaire (Fraley, Waller, and Brennan 2000), was used to measure attachment while the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) (WHO 2003) was employed to collect data on risk of problematic drug use.

The ECR-RS questionnaire is a self-report instrument designed to assess attachment patterns in a variety of close relationships. The same 9 items are used to assess attachment styles with respect to 4 targets (i.e., mother, father, romantic partner, and best friend). To score ECR-RS items for relation specific attachment style, two scores, one for attachment-related avoidance and the other for attachment-related anxiety, were computed for each interpersonal target (mother, father, partner, friend). The avoidance score was computed by averaging items 1 - 6, while reverse keying items 1, 2, 3, and 4. The anxiety score was computed by averaging items 7-9. These two scores were computed separately for each relationship target. A general attachment style was computed by averaging scores across the domains.

The ASSIST is a questionnaire that screens for all levels of problem or risky substance use in adults. It consists of eight questions covering tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants (including ecstasy) inhalants, sedatives, hallucinogens, opioids and 'other drugs'. For each substance, the scores received for question 2 through 7 were added up. A score is provided for each substance and grouped into low (0-3), moderate (4-26) or high risk (above 26). A general risk score was arrived at by averaging the score for each question.

For validation, the study depended on Humeniuk et al. (2008) who established construct validity of ASSIST by testing significant correlations between ASSIST scores and measures of risk factors for the development of drug and alcohol problems (r = 0.48-0.76). Discriminative validity was established by the capacity of the ASSIST to discriminate between substance use, abuse and dependence. Receiver operating characteristic (ROC) analysis was used to establish cut-off scores with suitable specificities (50-96%) and sensitivities (54-97%) for most substances.

The internal consistency reliability of Cronbach's Alpha of the ECR-R questionnaire on the other hand has been established at 0.89 (Wyrzykowska et. al 2015). Appropriateness of the instrument was further established through a pilot study.

The questionnaires were individually administered to the respondents by the researcher. Descriptive and inferential statistics were used to analyse the collected data. Descriptive statistics such as percentages and measures of central tendency were used to describe the data collected. Inferential statistics including T-test and ANOVA were used to test hypotheses. All these analyses were aided by use of the Statistical Package for Social Sciences (SPSS).

Results

Demographic Characteristics of the Sample

The sex and age distribution of the respondents in the study is summarized in Table 1 below;

Table 1: Age and sex distribution of Study Population

Age Bracket	Sex		Total
	female	Male	
<21	49	73	122(30.2%)
21 to 22	78	77	155(38.4%)
>22	56	71	127(31.4%)
Total n (%)	183(45.2)	221 (54.8)	404 (100)

The mean (SD) of participants' age was 22.42 (2.45) years while most of the respondents were in their second and third (65.9%) years of university education, as indicate in Table 2:

Table 2: Distribution by year of study

Year of Study	Sex		
	Female	Male	Total
Total	49	73	122(30.2%)
21 to 22	78	77	155(38.4%)
>22	56	71	127(31.4%)
Total n (%)	183(45.2)	221 (54.8)	404 (100)

Distribution of Attachment styles among university students in Kenya.

As is indicated in Table 3, the secure attachment style was most prevalent (44.3%) followed by avoidant and anxious attachment styles at 30.8% and 24.7% respectively. A mean (SD) score of secure attachment style was 11.46 (2.56), avoidant attachment style was 9.34 (3.32), and ambivalent attachment style was 7.93 (3.47)

Table 3: Distribution of attachment styles among students

Attachment	Sex	Frequency	Mean	SD
Secure attachment style	Female	76	11.57	2.60
	Male	104	11.31	2.48
Avoidant attachment style	Female	56	9.59	3.22
	Male	68	8.96	3.46
Anxious attachment style	Female	52	7.95	3.68
	Male	49	7.92	3.13

A T-Test analysis of the mean scores of both anxiety attachment dimensions and avoidance attachment dimensions did not show any significant differences with relation to sex. The findings however showed that in the avoidance dimension, men reported finding it easier to get close to others when compared to women, $t(402)=2.03$, $p<0.05$.

Drug use patterns among university students in Kenya.

On analysis of patterns of drug use, the study found that 76% of the respondents had used at least one drug in their lives, with 46.3% having used at least one drug in the three months prior to the study. The frequency of this use varied from once a month (25%) to daily use (2%) as indicated.
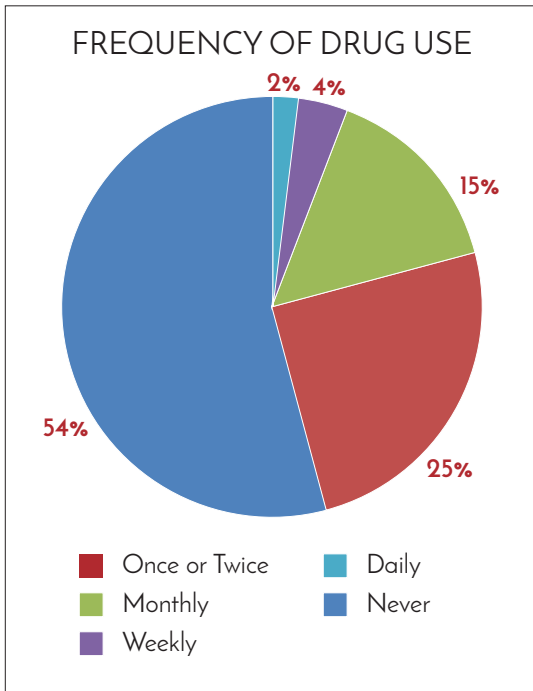

Figure 1: Frequency of Current Drug Use

Drugs used by university students

The most common used drug among the respondents was alcohol (72.4%), followed by sedative or sleeping pills, tobacco and cannabis at 24%, 16.2% and 7.7% respectively. All the other drugs had prevalence of less than 1%.

Risk of Problematic Drug Use among University Students

A weighted average score for ASSIST items was carried out to come up with a general risk assessment for problematic drug use among the respondents. As

shown in Figure 2, 83.8% of the respondents had low risk of problematic drug use, while 16.2% had moderate to high risk.
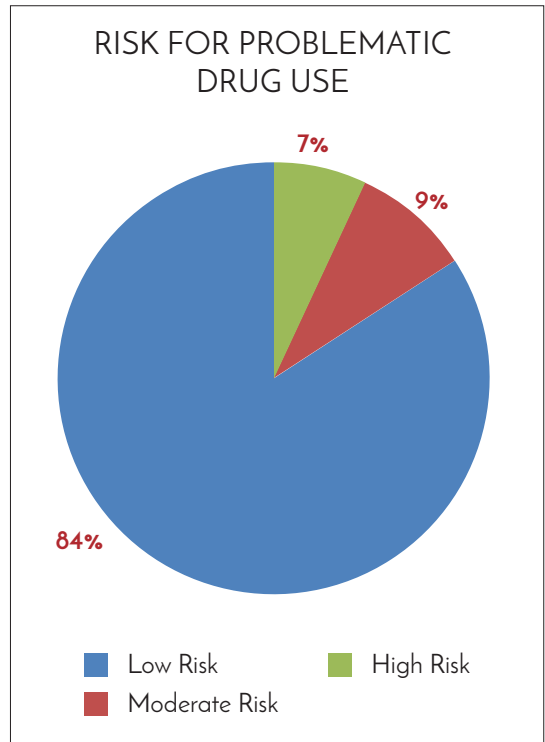

Figure 2: Risk for Problematic Drug Use

Problematic Drug Use Across Sex

As is shown in Table 4, male students had a higher prevalence (20.3%) of risk of problematic drug use compared to female students (11.5%).

Table. 4 Problematic Drug Use in Relation to Sex

Sex	Problematic drug use				
	No, n (%)	Yes, n (%)	x^2	Df	p-Value
Male (N=221)	189(79.7)	45(20.3)	0.20	1	0.65
Female (N=183)	162(40.1)	21(11.5)			

Problematic Drug Use Across Year of Study

As is shown in Table 5 below, the risk was highest among first year students (18.9%), then reducing progressively as one advances in year of study.

Table 5 Problematic Drug Use in Relation to Year of Study

Year of Study	Problematic drug use				
	No, n (%)	Yes, n (%)	x^2	df	p-Value
1st year (N=74)	59 (81.1)	14 (18.9)	6.54	4	0.16
2nd year (N=139)	99 (82.7)	24 (17.3)			
3rd year (N=128)	106 (83.6)	21 (16.4)			
4th year (N=64)	58 (91.6)	6 (9.4)			

Difference in Risk of Problematic Drug Use among Students with Different Attachment Styles

Seeking to establish the relationship between attachment styles and problematic drug use, the mean scores for each attachment style and dimension were cross-tabulated with the risk of problematic drug (Table 6). The results indicated that respondents with low risk of problematic drug use differed from respondents who had moderate to high risk for problematic drug with regard to attachment style. Those with moderate to high risk scored lower (M=7.11 and 6.36 respectively) on the secure attachment scale as compared to those with low risk who had a higher score (M=8.77).

Table 6: Attachment Styles and Risk for Problematic Drug Use

Attachment style	Risk for problematic drug use N=404		
	Low risk M(SD)	Moderate risk M(SD)	High risk M(SD
Secure	8.77 (1.95)	7.11 (2.63)	6.36 (2.17)
Anxious	4.73 (2.85)	6.66 (2.30)	7.01 (2.30)
avoidance	2.54 (2.17)	4.46 (2.25)	5.25 (2.7)
Attachment Dimension			
Anxiety	2.56 (0.79)	2.89 (0.87)	3.84 (0.96)
Avoidance	2.91 (0.80)	3.43 (0.81)	3.61 (0.81)

In terms of the attachment dimensions, respondents with low risk for problematic drug use had lower scores for both anxiety (2.56) and avoidance (2.91) dimensions as compared to those with moderate to high risk for problematic drug use.

Test of Hypothesis

To test the hypothesis that "there is no significant difference in risk of problematic drug use patterns across different attachment styles", a two-way analysis of variance was used in a 2 (risk for problematic drug use) × 2 (gender) scheme. The data comparison met the basic assumptions for the analysis of variance. Based on the results of the analysis of variance shown in Table 7, there were statistically significant differences in attachment styles across risk levels. Respondents who scored lower on the secure attachment scale, while scoring higher on avoidant and anxious attachment scales, had higher scores for risk of problematic drug use. This differed significantly (p<0.001) from those with lower risk for problematic drug use.

Table 7: Two-Way Analysis of Variance for Problematic Drug Use and Gender.

Attachment style	Risk for problematic drug use		Sex		Risk for problematic drug use -sex	
	F	n2P	F	n2P	F	n2P
Secure	48.47**	0.21	0.44	0.00	1.02	0.01
Anxious	53.46**	0.26	0.31	0.00	5.23*	0.03
avoidance	47.51**	0.21	0.00	0.00	4.87*	0.03

*p < 0.05; **p < 0.001

The secure attachment style was differentiated by the presence of risk of problematic drug use and the results are statistically significant, $F_{(1.184)} = 48.47$; $p < 0.001$. Respondents with low risk of problematic drug use were characterized by a higher level of attachment security (M = 8.77) than moderate risk (M=7.11) and high risk (M = 6.36).

The level of the anxious attachment style was differentiated both by the presence of high risk of problematic drug use, $F_{(1.184)} = 53.46$; $p < 0.001$, and the interaction of problematic drug use with gender, $F_{(1.184)} = 5.23$; $p < 0.05$. However, it was not differentiated by gender variable. Sex and the interaction of risk for problematic drug use and sex in differentiation of the secure attachment style proved to be statistically insignificant (p>0.05) as indicated in table 4.6. This means that people with higher risk for problematic drug use also had higher scores in terms of anxious attachment style (M = 7.01) than those with low risk (M = 2.54).

Based on these findings, the null hypothesis that stated that there is no significant difference in risk for problematic drug use patterns across different attachment styles was rejected.

Discussions

The findings of this study showed that despite there being a high prevalence of drug use among university students, only 16.3% of respondents had moderate to high risk of problematic drug use. This emerges since experimenting with drugs tends be an exploratory behaviour at this stage of life as is asserted by Arnett & Sussman (2014). However, university students may feel particularly invulnerable to negative life consequences as they adopt an experimental stance toward living (Arnett, 2014), leading to higher risk of problematic drug use.

The study shows that respondents who exhibited higher levels of insecure attachment styles had a higher risk of problematic drug use, while those who exhibited lower levels of insecure attachments in their significant relationships had lower risk of the same. This is consistent with studies by Schindler & Bröning, (2015) and Molnar et al., (2010) who suggested that attachment processes can be a risk or protective factor within a multifactorial model of university students' problematic drug use. Hofler and Kooyman (1996) argued that an individual

might choose a drug as an attachment alternative to relationships. Their higher risk for problematic use could be motivated by the desire to meet the attachment need.

The study found a significant relationship between attachment styles and problematic use of specific drugs. Anxious attachment was significantly correlated with alcohol, tobacco and sedatives while avoidant attachment was significantly related to marijuana. These findings were consistent with those of other studies (Thorberg and Lyvers 2010; Kassel et al., 2008). Thorberg and Lyvers (2010) stated that clients who were undergoing treatment for alcoholism, heroin addiction, or cannabis abuse reported higher levels of insecure attachment and fear of intimacy.

The study therefore confirmed a correlation between attachment security and risk of problematic drug use. This agrees with the Self-Medication Theory which states that drug abuse vulnerability is a result of exposure to drugs in combination with the inability to tolerate or understand one's own feelings (Khantzian, 1997), meaning that problematic drug use is not about pleasure seeking but seeking comfort and contact. Substances relieve psychological suffering and compensate for an alienated sense of self (Khantzian, 2011). Because these individuals have an inability to recognize and regulate their own feelings and sense of self, they act as though they do not need close interpersonal relationships (Khantzian, 2011). This disengagement and alienation from self and others produces immense distress and creates a further reliance on addictive drugs (Khantzian, 2011).

Implication for Treatment and Prevention

This study suggests that counsellors and psychologists should integrate attachment styles during the screening, planning and treatment of problematic use.

This study shows suggests that changing problematic drug use behaviour will be easier when attachment security is fostered. The development of security, on the other hand, will benefit from abstinence from

abuse of drugs. Attachment theory stresses the therapeutic alliance as a means to develop more attachment security.

This study shows that professionals working with students who are at a high risk of problematic drug use can seek to establish a therapeutic relationship that fosters the correction of erroneous attachment styles through experiences that help to develop more attachment security. This would be achieved by building trust through consistent communications and maintained availability. This could be through the affected students being able to contact the counselors and psychologists via different means and channels (e-mail, social media, and in-person, etc.) when needed.

This study suggests that counsellors need to incorporate family therapy approaches in the intervention plan for addressing problematic drug use. The family of origin is where attachment relationships develop and can most easily be transformed. Family therapy approaches would also be an appropriate place to address attachment insecurity.

Conclusion

This study established a significant correlation between Attachment Styles and risk of problematic drug use. The need to make connections with significant others, both real and symbolic, are perpetual. The recognition that attachment style plays an important role in how people self-adapt and prevent risky drug use behaviors makes it necessary to build positive, functional attachment styles that can work as protective factors.

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