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CONTENTS

Association between School-Based Mentoring Intervention Programs and Drug Abuse Among African American Aged 10-24 Years

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Abstract

Drug abuse remains a significant global public health problem having socioeconomic consequences wrought by cognitive and physiological phenomena, as well as a cluster of behavioral, physical, serious social, and emotional problems. Worldwide, adolescents and young people are at most risk of drug abuse. The predisposing factors to drug abuse among adolescents and young people include gender, age, family structure and relations, poverty, and the accessibility and affordability of drugs. This problem is common across developed and developing countries, including Nigeria This study was conducted to evaluate the association between school-based intervention programs and drug abuse among African American young people with the ages of 10 – 24 years. The theoretical framework for the study was based on the health belief model. The study utilized secondary data set from the 2014 National Survey on Drug Use and Health for the analysis. The dependent variable was drug abuse, while the independent variable was mentoring interventions. The Chi-square analysis revealed a significant association between participation in school - based intervention programs and drug abuse [(2 (1, N = 3533) = 8.567, p = .003]. The observed association between drug abuse and school-based mentoring intervention programs suggests that other mentoring intervention programs may be modified for effectiveness, which would result in positive social change. The social implications of drug abuse among adolescents and young people, particularly undergraduates, cannot be quantified and it is one of the health-related problems among and African and specifically Nigerian youth and remains a source of anxiety to various stakeholders, including the educational stakeholders. In view of the profound public health implications of these dangerous drug abuse habits among adolescents and young adults in African and Nigeria, the findings of this study may be generalized and implemented to bring about a needed social change.

Key words: *Drug abuse, Mentoring, Interventions, Adolescents, African Americans, Prevalence of drug abuse, Drugs commonly abused.*

Introduction

Drug abuse rates high among the rising significant public health and socioeconomic concerns globally with dramatic increase, particularly in developing countries (Olawole et al., 2018; Osman et al., 2016). The investigation of drug abuse is multifaceted due in part to its varieties, degree of secrecy,

health challenges, and different global legal connotations (Olawole et al., 2018; Osman et al., 2016). Drug abuse is defined as the use of illegal drugs or the use of prescription or over-the-counter drugs for purposes or amounts different from those for which they were prescribed (National Cancer Institute [NCI] (2020).

Adolescents are a high-risk group for the use of drugs, and this problem has risen to epidemic proportions globally, resulting in negative impacts on family, society, health, educational and professional life (Osman et al., 2016). The early-onset of drug abuse by young people places them at higher risk for psychosocial problems including disruptive behavior patterns, psychiatric disorders, difficult peer relations, poor work adjustment, and negative impacts to leisure and recreational activities, when compared to late-onset drug users (Poudel et al.,2017). Early intervention for drug abuse, among other preventive measures prior to high school, is essential. Studies show that persons who get involved in early drug use are more likely to abuse them later in life where it becomes much more difficult to quit (Youth.gov, 2019).

Mentoring generally refers to the process through which experienced individuals (mentors) share their knowledge, skills, support, and guidance with less experienced individuals (mentees) (Bazzi et al., 2017). Mentoring, role modeling, guidance, and counseling have been instrumental in preventing drug abuse (Aguttu et al., 2018). Studies show that mentoring improves self-esteem, academic achievement, peer relationships, and reduces drug abuse (DuBois, 2018). According to Hawkins et al. (2016), mentoring is a secondary preventive intervention that focuses on 'at-risk' adolescents and young adults. Mentoring provides young people the opportunity to engage in workshops and activities; providing a range of inclusive activities and may also serve as a tool to address the availability of drugs in the broader community (Alcohol and Drug Foundation [ADF], 2018).

Mentoring programs may be one-on-one, group peer, and team, and delivery can be either face-to-face or e-mentoring. Mentoring may also be by structured programs through less apparent ways, including developing positive, supportive relationships and structured, goal-oriented activities in sporting clubs, youth groups, volunteer associations, school, and community-organized programs (Youth Mentoring Hub, 2018). A formal mentoring program is often targeted at 'at-risk young people through a structured setting by community agencies, faith-based programs, schools, afterschool programs, and other youth-serving organizations. Community-based mentoring (CBM) provides a carefully screened volunteer with at-risk youth and may involve various activities, including sports, games, movies, visiting a library or museum within the community (NIJ, 2020). School-based mentoring (SBM) is an alternative to CBM which involves the pairing of a young person with a positive role model that may be an adult or an older student who meet at

a specific location rather than various places within the community and may last for a defined period (NIJ, 2020). Limited studies have explored the impact of mentoring on the use of drugs by adolescents and young adults.

Methodology

A quantitative study was carried out using the 2014 National Survey on Drug Use and Health (NSDUH) data set from the Inter-University Consortium for Political and Social Research (ICPSR). Statistical analysis using SPSS version 25 was carried out to examine the association between the drug abuse and the school-based mentoring interventions.

Study Design

This study was a non-experimental, descriptive and inferential involving secondary data from ICPSR. Non-experimental examination can be used to analyze existing data, analyze variables, and measure statistical associations among variables; thus, it was appropriate for use in this study.

Description of Participants Data collection

The initial data was collected by Research Triangle Institute (RTI) and it is sponsored by the Center for Behavioral Health Statistics and Quality (CBHSQ) within the Substance Abuse and Mental Health Services Administration (SAMHSA). The primary purpose of the survey was to measure the prevalence and correlates of drug use in the United States and provides information about the use of illicit drugs, alcohol, and tobacco among the U.S. civilian, non-institutionalized population aged 12 or older. The survey was conducted across all 50 states in the United States, including the District of Columbia. The sample was selected using a multistage, deeply stratified sample design through the Computer-Aided Instruction (CAI).

The target population for this study was achieved by excluding all ethnic groups and age groups other than non-Hispanic African Americans within ages 12-25 of both genders, resulting in a sample size; N = 3533. The initial study population were adolescents and young adults African American between ages 10-24. However, the NSDUH survey covered individuals between ages 12 and older, and the age 24 was grouped with age 25. Hence for this study, based on the available data, the target population will include African American young people between ages 12-25 years. The study excludes other race/ethnic groups from ages 12-25. The variables of interest were the Non-Hispanic African Americans within the target age group between ages 12-25 years. For the analysis, the age categorization 12-13 years old, 14-15 years old, 16-17 years old, 18-20 years old, and 21-25 years old was used.

Analysis

Following an initial data review, all tests were performed with SPSS® Version 25 (IBM Corp, 2018). The data analysis included descriptive and inferential statistics using Pearson's chi-square analysis and Fisher's exact test to assess any associations between drug abuse and mentoring interventions.

Results

Statistical analysis using Pearson's Chi-Square test demonstrated a significant association between participation in school-based interventions and drug abuse. [p =0 .003] (Table 3).

A Cross-tabulation of the respondents' participation in school-based interventions and drug abuse indicated that of the respondents who did not participate in any school-based intervention program, n = 314 (65.0%) reported no abuse of drugs. In comparison, n = 169 (35.0%) reported the abuse of drugs. However, of the respondents who participated in the school-based interventions program, n = 797 (72.3%) reported no drug abuse, while n = 305 (27.7%) reported the abuse of drugs. The results showed that the number of people who participated in the school-based intervention and reported no abuse drugs was higher than the number of people who did not participate in school-based interventions and did not abuse drugs (see Table 3).

Table 1

Demographic Characteristics of the Sample used in the study

Frequency Distribution for the Characteristics of the Sample Population

		Frequency	Percent
Age of participants	12 - 13 years old	524	14.8
	14 - 15 years old	640	18.1
	16 - 17 years old	604	17.1
	18 - 20 years old	629	17.1
	21 - 25 years old	1136	32.2
	Total	3533	100
Gender	Male	1722	48.7
	Female	1811	51.3
	Total	33533	100
Education	Less than high school	275	7.8
	High school graduate	755	21.4
	Some college	599	17
	College graduate	136	3.8
	12 to 17 years old	1768	50
	Total	3533	100

Table 2

Frequency Distribution for the school-based intervention programs Mentoring Interventions

	Frequency	Percent	Valid Percent
No participation	483	13.7	30.5
Yes participation	1102	31.2	69.5
Total	1585	44.9	100
System	1948	55.1	
	3533	100	

Table 3

Cross Tabulation and Chi-Square Results for School-Based Interventions and Participants Yes/No Response on Drug Abuse

		Participants yes/no response to drug abuse						
		No, not abused drug *n* (%)	Yes, abused drug *n* (%)	Total N (100%)	X^2	*df*	*P*	Phi Cramer's V
School-based intervention	No participation	314 (65.5%)	169 (35.5%)	484	8.567	1	0.003	-0.074 0.074
	Yes participation	797 (72.3%	305 (27.7%)	1102				
	Total	1111 (70.1)	474 (29.9%)	1585				

Result

As indicated in Table 1, the total number of participants; N was 3533. The highest number of the participants, n = 1136 (32.2%), were between ages 21-25 years, while the lowest number of participants, n = 524 (14.8%), were between ages 12-13 years. There were 1772 (48.7%) males and 1811 (51.3%) females. According to the educational levels of the participants, n = 275 (7.8%) participants had less than high school education, n = 755 (21.4 %) participants were high school graduates, n = 599 (17.0%) participants had some college education, and n = 136 (3.8%) participants were college graduates. According to the result, n = 1100 (69.5%) of the respondents participated in school-based interventions programs against drug abuse, while n = 483 (30.5%) did not participate in school-based intervention programs (Table 2).

The cross tabulation of the respondents' participation in school-based interventions and drug abuse indicated that of the participants who did not partake in any school-based intervention program, n = 314 (65.0%) reported no abuse of drugs. In comparison, n = 169 (35.0%) reported the abuse of drugs. However, of the participants who

participated in the school-based interventions program, n = 797 (72.3%) reported no drug abuse, while n = 305 (27.7%) reported the abuse of drugs. The results revealed that the number of individuals who participated in the school-based intervention and reported no abuse drugs was higher than the number of people who did not participate in school-based interventions and did not abuse drugs (see Table 3). The chi-square analysis revealed a significant association between participation in school-based interventions and drug abuse. [^{2}(1, N = 3533) = 8.567, p = .003]. Thus, we can conclude a statistically significant association between participation in school-based interventions; however, the association is low.

Discussion

Limited studies have explored the impact of mentoring on the use of drugs by adolescents and young adults. However, mentoring involving school and community-based intervention has consistently demonstrated success in increasing positive, healthy behavior among adolescents and young adults, including reduced drug abuse (Hayakawa et al., 2016; Ranes, 2015). Mentoring can have a profound impact on the lives of youths and adolescents at high-risk of drug abuse (Weiler et al., 2015).

Early research works support the findings of this study which indicated that there is an association between school-based intervention and drug abuse. A study Rigg et al., 2018 pointed out the significance of schools as a venue for implementing drug prevention programs and reported school-based programs as a worthwhile and cost-effective method of decreasing drug abuse among young people. Further, Das et al. (2016) and Chakravarthy et al. (2013) proposed that various types of prevention activities and programs can be delivered through school prevention programs amongst other channels. Also, Das et al. (2016) noted the necessity for concerted efforts for early identification, consciousness and prevention programs, and routine monitoring of adolescent health data as being important due to the prevailing burden and impact of drug abuse in young people. Hayakawa et al. (2016) and Ranes (2015) reported that mentoring involving school and community-based intervention has consistently demonstrated success in increasing positive, healthy behavior, including reduced drug abuse among adolescents and young adults. The findings of this study indicated no association between the number of school and community-based interventions and drug abuse. It is generally assumed that if participating in school and community-based intervention impacted positively on the young people causing a reduction in drug abuse, the number of school and community-based interventions participated in may further reduce drug abuse by young people. The observed non-association in this study may be attributed to the approach and components of the school and community-based intervention.

Generalization of the study

The predisposing factors to drug abuse among young people include age, gender, family structure and relations, poverty, and the affordability and availability of drugs. This problem is common across developed and developing countries, including Nigeria (Somani, & Meghani, 2016). These mentoring interventions may also be adapted in developing countries such as Nigeria.

The social implications of drug abuse among young people, particularly undergraduates, cannot be quantified. Drug abuse among young people one of the health-related problems among Nigerian youth and remains a cause of anxiety to numerous stakeholders, including the educational stakeholders (Okafor, 2020). According to Idowu et al. (2018), Nigeria like many other countries, have a high prevalence of drug abuse among young people and stated the urgent need to intensify awareness against drug abuse among secondary school students in Nigeria. The emerging drug trends in Nigeria have shown that young people are increasingly resorting to potent mixtures of several drugs thereby exposing them to high risks of fatal overdoses (Idowu et al., 2018). These young people consume several cocktails of drugs, and these include mixtures of cannabis, codeine, rohypnol, tramadol, and water or juice (Kazeem, 2019). Also, some of the young adults have turned to crude concoctions as alternatives for drug use for example smoking lizard parts and dung; as well as sniffing glue, petrol, sewage, and urine as inhalants (Kazeem, 2019). Given the profound public health implications of these dangerous trends among adolescents and young adults in Nigeria, it is expected that the findings of this study may be generalized and implemented in Nigeria to bring about the much needed social change.

Conclusions

The findings from this research suggest that there is an association between school-based intervention and drug abuse. However, this may not be dependent on the number of school and community-based interventions the young adult is exposed to. Drug abuse mentoring interventions may also be implemented in a variety of settings, which could involve the individual, family, school, and community (Youth.Gov, 2020). Research has also shown that school-based interventions that are based on a combination of social competence and social influence approaches have protective effects against the use of drugs (Das et al., 2016). As suggested by Onrust (2016), these interventions may be planned to suit the varying age groups. After the initial participation in an intervention program, subsequent intervention programs may be planned to build and consolidate the previous knowledge for more impact on the young people. According to Herrera et al. (2013), the implementation of successful mentoring programs requires a careful evaluation of the targeted young people's characteristics.

This evaluation may also include an evaluation of the previous knowledge of the targeted young people, which is in line with the suggestions of Erdem et al. (2020) on the availability of various theoretical approaches which emphasize the procedures through which formal and informal mentoring relationships can promote positive youth developmental outcomes while averting behavioral problems predisposing young people to drug abuse.

Studies have established that globally, adolescents and young people are at most risk of drug abuse, this problem is common across developed and developing countries, including Nigeria (Somani, & Meghani, 2016). Drug abuse remains one of the health-related problems among Nigerian youth and remains a source of anxiety to various stakeholders (Okafor, 2020). Also, the predisposing factors to drug abuse among these group of individuals i.e. adolescents and young people include age, gender, family structure and relations, poverty, and the affordability and accessibility of drugs. The social implications of drug abuse among adolescents and young people, particularly undergraduates, cannot be quantified. Idowu et al. (2018) in their study reported that Nigeria, like many other countries, have a high prevalence of drug abuse among young people in Nigeria while stating the urgent need to intensify awareness against drug abuse among secondary school students in Nigeria. Since an association was observed between drug abuse and school-based intervention programs, this suggests that other mentoring intervention programs may be modified in line with the components and approaches of the school-based intervention programs for effectiveness. Given the profound public health implications of these dangerous habits among adolescents and young adults in Nigeria, it is expected that the findings of this study may be generalized and implemented in Nigeria and indeed African as a whole to bring about a needed social change.

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Co-occurrence between Alcohol Use and Tuberculosis among Patients in Othaya Level 4 Hospital

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Abstract

Although the government and partners have made significant investments in Tuberculosis (TB) prevention and treatment over the last 20 years, tuberculosis remains the fourth leading cause of death in Kenya. Alcohol intake, particularly heavy consumption, is a significant risk factor for tuberculosis. This study sought to establish the association between alcohol abuse and tuberculosis prevalence in Othaya Level 4 hospital, Kenya. The study was anchored on the ecological systems theory and employed descriptive survey design. The target population of this study were patient attending TB Clinic in Othaya Level 4 hospital. The study sample targeted 47 Tuberculosis patients enrolled in Othaya Level 4 hospital clinic, one clinical officer, a nurse, a social worker and a public health officer. Both quantitative and qualitative techniques were used in data collection. Data was collected using structured questionnaires, focus group discussions and key informant interviews. Findings from this study were presented in form of tables and graphs and narration for quantitative and qualitative data respectively. The study found that that 40% of TB patients had low-risk consumption while an equal number had hazardous or harmful alcohol consumption respectively. The results showed that 20% had a score of over 15 meaning that they were alcohol dependent. Age (p=0.0013) and marital status (p=0.013) were statistically significant for alcohol abuse whereby young respondents (<40 years) were 1.484 times likely to have alcohol abuse. Married respondents were 7.2 times likely to have alcohol abuse. Participants identified lack of adequate knowledge on the part of healthcare givers, ignorance and illiteracy on the part of the patients as well as culture as the barriers to overcome alcohol dependence. FGD participants recommended health education and support in overcoming alcohol abuse in treatment of TB.

Keywords: *Alcohol, Alcohol Abuse, Tuberculosis, ecological systems theory*

Introduction

The World Health Organization (WHO) defines alcohol as a psychoactive substance with addictive properties (WHO, 2018). Studies on alcohol indicate that over the past few decades, consumption of alcohol has increased exponentially. The Global Burden of Disease (GBD) (2017) reports that about 1.4 percent of the world's population is affected by alcohol consumption disorders. WHO (2017) estimates the European Region's alcohol consumption is the largest in the world. In Russia for instance, the prevalence is 4.7%, meaning approximately 1 in twenty have a dependency on alcohol at any time. According to National Institute for Alcohol Abuse and Alcoholism, about 5.8 per cent of American adults over 18, (about 14.4 million) have alcohol consumption disorder (NIAAA, 2019). WHO (2019) estimates that around 53% of the world's 15-year-olds have ever used alcohol. In East Africa, a systematic review of youth alcohol consumption has shown that 70% of males and 54% of females have ever reported using alcohol (Osaki et al., 2018). Alcohol use disorder (AUD) a medical condition characterized by an impaired ability to stop or control alcohol use despite adverse social, occupational, or health consequences is estimated to affect 3% of Africa's population (Gowing et al., 2015). In Nigeria, Lasebikan et al., (2018) found that 44.4% of the drinking population were more likely to present with AUD. A Tanzanian study by Francis et al., (2018) found that males were more likely (11–

28%) to have AUD than females. In Kenya, study by Takahashi et al., (2017) showed that the sex-standardized prevalence of current alcohol drinkers was 31.7%. The prevalence was higher in men (54.6%) than in women.

Kenya continues to face the greatest challenge to drug misuse amid regulatory attempts to curtail drinking NACADA (2019). According to Kisilu (2020) study, 12.2% of Kenyans aged 15-65 years used alcohol, 8.3% cigarettes, 4.1% used khat and 1.0% used bhang /cannabis. Alcohol consumption saw a total volume growth and current value growth due to the better socio-economic conditions, the urbanization and a growing number of rich young adults (Kisulu, 2020). Macintyre & Bloss (2011), portrays popular and widespread tiny pubs and beer huts in many Kenyan villages and cities. Large volumes of alcohol are frequently drunk by persons with impaired immune systems who are at risk of the TB disease in these typically impoverished locations with their closely packed customers.

Studies have demonstrated that individuals who misuse drugs or alcohol are at higher risk of Tuberculosis (Laprawat et al., 2017). Tuberculosis (TB) is an infectious disease commonly associated with the lungs and caused by Mycobacterium tuberculosis (M.tb) (Ali, Karanja & Karama, 2017). TB is spread by droplets from a person with active pulmonary disease emitted into the air through cough, sneezing or speaking, and inhaled by someone else. Despite the fact that most infections have no symptoms called latent TB, latent infections in life can kill around half of those affected (Mathema et al., 2017).

Myers, et al., (2018) indicate that about ten percent of deaths from tuberculosis are due to global substance abuse such as alcohol. The adverse effects alcohol on TB have been reported both in terms of delays in obtaining care as well as non-compliance with medication (Laprawat et al., 2017). According to Laprawat et al., (2017), the fact that drugs and alcohol weaken the body's defense against diseases like tuberculosis. Mafukidze, Calnan, & Furin (2016) indicate that people with alcohol use problems typically spend some time where TB can spread more quickly, such as cramped or poorly ventilated homes or social environments where people who have TB contagious but do not know this are often spending in other areas. Studies have further demonstrated that alcohol abuse also affects treatment maintenance and alignment with routine TB therapy. Low adherence to drugs and rising TB defaults have been reported routinely in many countries in patients who drink alcohol (Myers et al., 2018; Silva, et al., 2017). Alcoholics are more likely to develop drug resistance and such patients need longer treatment regimens

Kenya is among the twenty-two (22) TB high burden countries in the world which contribute 80% of the global TB burden (Kanco.org). The National TB prevalence survey (2016) found that in 2015, 82,000 patients were screened and treated for TB. Enos et al., (2018) also revealed that two thirds of prevalent cases of TB disease in Kenya (15–44 years) are related to the youthful age classes (14–34 years of age). Nyeri County recorded an incidence of 1478 cases in 2016. Pulmonary TB cases were 1,262 accounting for 85.4% of all reported cases (Wangari, Chege, & Njogu, 2017). Othaya Level 4 hospital recorded the highest number of new TB incidences in 2018 and 2019 compared to other level 4 hospitals. The reasons for the upsurge of TB are not well known.

Alcoholism and addiction impact people differently depending on gender, age, education, environment, lifestyle, mental health, financial level, and even where they live. Alcohol use has different health consequences for different groups, particularly those determined by demographic variables such as age, race/ethnicity, and gender.

According to Delker, Brown & Hasin (2016) youth between ages 18–25 are at high risk of accidental injury due to drinking compared to overall public. Kendagor et al., (2018) found out that Heavy Episodic Drinking (HED) was 35.5% for 18–29 years' age category. The study concluded that that there is a

connection between alcohol misuse and age. In other studies, men especially in older cohorts, reported greater alcohol intake and binge drinking (Delker et al., 2016; Han et al., 2017; Kendagor et al., 2018)

Education level of an individual would be a good indicator of his economic status. This is because if an individual has vocational skills, he/she would be more likely to be engaged compared to those with no skills. A study by Vignesh, Singh, Mohan, Murthy & Joshi (2015) inspected relationship between socioeconomics and seriousness of alcohol reliance among people getting treatment. Aftereffects of the review showed huge relationship between Short Alcohol Dependence Data survey (SADD) Score and training.

Reddy et al., (2014) study concentrated on the segment factors related to alcohol reliance condition. The study established that alcohol reliance disorder was more among jobless, untalented and semi-gifted patients. Vignesh et al., (2015) showed critical relationship between Alcohol Dependence Scale (ADS) Score and yearly pay. Cook at al., (2011) researched on the connection between socio-segment components and alcohol drinking. The study did an Alcohol Use Disorders Identification Test (AUDIT) score in a populace test of working-age men in Russia. The AUDIT found out that alcohol utilization and alcohol related issues were higher in men who were jobless looking for work contrasted to those in customary paid business. These studies thus demonstrate that there is a connection between financial status and alcohol abuse with those of low financial status being generally helpless.

In Imtiaz at al., (2017); Volkmann et al., (2015); Obwoge, Sang & Wakube (2016) and Kasera, (2017) review, drug consumption, alcohol intake and alcohol-related disorders were analysed by meta-analysing of the retrospective and case-control trials as tuberculosis risk factors. These three groups have been associated with a higher risk of TB. Dosage-response meta-analyzes indicate greater attributable tuberculosis risk at the highest alcohol intake rate. The drug-attributable disease prevalence was also measured on the basis of meta-analysis of drug dose. The tuberculosis burden of the disease was greatly affected by alcohol consumption, with the most serious effects estimated for the African region.

Laprawat et al. (2016) study found a noteworthy decrease in the pervasiveness of alcohol use issue among TB patients over a 6-month time span, as likewise found in the benchmark group of a brief alcohol mediation preliminary among TB patients in South Africa. Oyugi et al. (2017) considered patient components which impact adherence to against TB treatment among TB patients at Njoro Sub County Hospital. Default were higher among alcohol users rather than non-alcoholics. The outcomes indicated that the entirety of the TB patients taking alcohol on consistent schedule (100%) missed their TB drugs.

Yonge et al., (2016) study considered the hazard factors in pneumonic tuberculosis among patients going to different facilities in Mombasa. From the information, smoking and alcohol utilization were related with TB contamination with 37.1% of the patients being smokers and 42.9% being alcohol buyers. In an investigation to decide the hazard factors that are related with the improvement of tuberculosis among the HIV negative people in Bomachoge Sub County, Kenya, Onkware (2016) found that alcohol drinking was related with contamination with TB. The chances of being a TB case among people who were at present drinking was 4.7 occasions higher than the individuals who had never taken alcohol while past drinking didn't show any affiliation.

In an appraisal of variables related with interference of treatment among patients on DOTS in Nandi County, Kenya, Wanyonyi et al., (2017) found that treatment interference was related with every day alcohol utilization of > 3 days out of each week contrasted with utilization of ≤ 3 days out of every week. Another study in Nairobi found that smoking and alcohol use were related with TB disease

with 36% of the patients being smokers and 39.5% being alcohol buyers (Ndungu et al., 2013).

This background indicates that a number of studies have been conducted in different parts of the world providing evidence of a relationship between alcohol abuse and prevalence of Tuberculosis. Nonetheless, as indicated earlier the pathways through which problem of alcohol use have an impact on prevalence of TB is not clear. Therefore, in light of the high prevalence of TB in Kenya and alcohol abuse, the current study sought to find out the link between alcohol abuse and prevalence of tuberculosis patients in Othaya Level 4 Hospital.

Methodology

This study adopted a descriptive research design. Descriptive research design was employed due to its effectiveness in analyzing non-quantifiable issues, creating the possibility of observing a phenomenon in a completely natural and unchanged natural environment and can be used to integrate qualitative and quantitative data collection methods

The study was conducted in Othaya Level 4 Hospital which is situated in Othaya town, Nyeri South Sub County in Nyeri County. The county has four (4) TB clinics in four Sub-Counties. These include Mt. Kenya level 4, Othaya level 4, Mukurwe-ini level 4 and Karatina level 4 hospitals. Othaya level 4 Hospital was selected using purposive sampling because it had the highest recorded number of new TB infections among all level 4 hospitals in Nyeri County (DHS, 2020). The hospital offers a wide range of curative and preventive medical services. The facility has a TB clinic which specializes in diagnosing and treating TB patients.

The population of this study constituted 47 patients enrolled in TB clinic including. Key informants targeted for the study included one clinical officer, a nurse, a social worker and a public health officer (Othaya Hospital, 2020). The health workers in the study were selected because they manage the TB patients on a day to day basis and therefore are resourceful persons to acquire information on mitigation strategies and barriers hampering effective response to TB. Table 1 shows the target population of the study

Table 1: Target Population

Population	Number
Active TB patients	47
Clinician	1
Nurse	1
Social Worker	1
Public Health Officer	1
Total	51

Source: Othaya Hospital, 2020

Sampling Procedure

Census method of sampling was employed in this study. This involves a complete enumeration of all subjects in the population (Bryman, 2016). Therefore, all 47 TB patients attending Othaya level 4 Hospital were targeted for the study. In addition, all 4 health workers in the chest clinic were included in the study as shown in Table 2.

Table 2: Sampling Frame

Population	Number
Active TB patients	47
Clinician	1
Nurse	1
Social Worker	1
Public Health Officer	1
Total	51

Source: Field Data, 2021

Data Collection

Data in this study was collected using self-administered questionnaires, Focus Group Discussion guide, and Key Informant guide. The questionnaire had 2 parts: A and B. Part A collected data on the socio-demographic characteristics of respondents which included gender, age, marital status, occupation and

income status. Part B collected data on factors contributing to co-occurrence between alcohol use and tuberculosis among patients in Othaya Level 4 Hospital. This section also had items focusing on identifying barriers to alcohol abuse treatment and TB as well as knowledge of treatment approaches available for both TB and alcohol abuse

A focus group discussion consisting of 10 TB patients (6 males and 4 females) attending Othaya level 4 Hospital was conducted. The focus group discussion participants were selected randomly from the 47 respondents. A key informant interview was used to collect data from the health workers in the chest clinic who include a clinical officer, a nurse, a social worker and a public health officer. Data from both FGD and Key Informant Interview was recorded using mobile phone for analysis of key themes emanating from discussions. The researcher sought informed consent from the respondents. In addition, respondents were assured of anonymity and confidentiality and also were assured that the results were for academic purposes. A pilot study was conducted in Mukurwe-ini level 4 hospital. Mukurwe-ini level 4 hospital was preferred because it is similar to Othaya level 4 hospital in terms of services provided and characteristics of the catchment population. 5 TB patients and 2 health workers in the chest clinic were used in the pilot.

Data Analysis

Data collected from questionnaires was coded using Statistical Package for Social Sciences (SPSS) version 24. It was analyzed using quantitative techniques and reported using descriptive methods such as table and pie charts. Qualitative data from open ended questions, interview and focus group discussion was analyzed through emanating major themes and presented through narratives

Results

Response Rate

Out of 47 TB patients that were targeted for the study, 45 participated. This is in addition to the 4 health workers in the chest clinic which represented a 96.1% response rate as shown in Table 3 This response rate is considered adequate for generalization of the results of the study as it is higher than the 70% recommended for descriptive studies by Mugenda & Mugenda (2013).

Table 3: Response Rate

Population	Number	Partici-pants	Response Rate
Active TB patients	47	45	95.7
Clinician	1	1	100.0
Nurse	1	1	100.0
Social Worker	1	1	100.0
Public Health Of-ficer	1	1	100.0
Total	51	49	96.1

Source: Field Data, 2021

Socio-Demographic Characteristics of TB Patients

Socio-demographic characteristics assessed in the study included gender, age, marital status and occupation of respondents. Results in Table 1.4 show that majority (82.2%, n=37) of the respondents were male. Results further shows that 37.8% (n=17) were aged over 50 years while 31.1% (n=14) were aged between 34 and 41 years. The mean age was 43 years. The youngest respondent was aged 23 years while the oldest was aged 59 years. Slightly above half (55.6%, n=25) were married, 17.8% (n=8) were single while an equal number 17.8% (n=8) were divorced or separated. Majority (66.7%, n=30) of the respondents were self-employed while 33.3% (n=15) were unemployed. So, majority of the respondents in the study were middle-aged married self-employed men.

Table 4: Socio-Demographic Characteristics of TB Patients

Demographic Characteristic	Categories	Frequency (n=45)	Percent (%)
Gender	Male	37	82.2
	Female	8	17.8
Age (years)	18-25	1	2.2
	26-33	5	11.1
	34-41	14	31.1
	42-49	8	17.8
	>50	17	37.8
Marital status	Single	8	17.8
	Married	25	55.6
	Divorced/Separated	8	17.8
	Widowed	4	8.9
Occupation	Self-employed	30	66.7
	Unemployed	15	33.3

Source: Field Data, 2021

Tuberculosis Infection in Respondents

The researcher sought to establish the morbidity of tuberculosis patients in the study. The findings are presented in Table 1.5. Majority (82.2%, n=37) of the respondents had pulmonary TB. Slightly less than half (44.4%, n=20) indicated that they suffered from TB for between 1 and 3 months while (31.1%, n=14) had had TB for less than 1 month. Majority (84.4%, n=38) indicated that they had never had TB before. Similarly, majority (75.6%, n=34) indicated that they did not have a family member who had suffered from TB. Majority (84.4%, n=38) of the respondents indicated that they had disclosed their TB status to their family. So, majority of respondents in this study were new TB patients in that they had not suffered from the condition before.

Table 5: Tuberculosis Infection among Respondents

	Categories	Frequency	Percent
Type of TB	Pulmonary TB	37	82.2
	Extra Pulmonary TB	8	17.8
Length of time with TB	<1 month	14	31.1
	1-3 months	20	44.4
	4 - 6 months	8	17.8
	7-9 months	3	6.7
Whether respondent had TB before	Yes	7	15.6
	No	38	84.4
Member of family ever had TB	Yes	11	24.4
	No	34	75.6
Whether respondent has disclosed TB to family	Yes	38	84.4
	No	7	15.6

Source: Field Data, 2021

Alcohol Abuse among TB Patients

Respondents in the study were asked to indicate if they consumed alcohol. Majority (77.8%) of the respondents in the study indicated that they did not consume alcohol while 22.2% of the respondents said they consumed alcohol. The findings are as shown in Figure 1

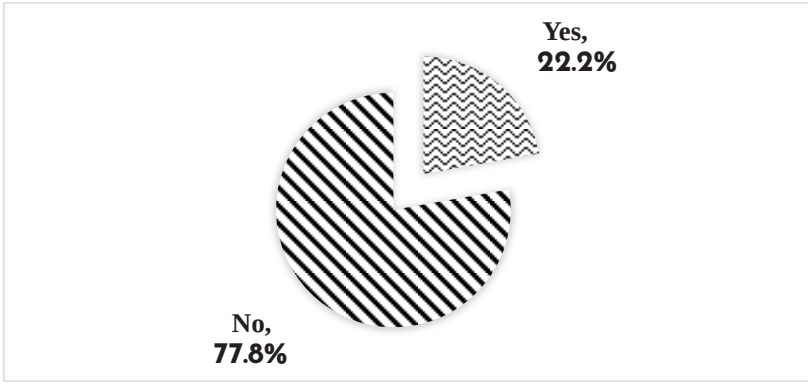

Figure 1: Alcohol use among TB Patients

Source: Field Data, 2021

Type of Alcohol Consumed among TB Patients

Among those who consumed alcohol, the researcher sought to find out the type of alcohol they consumed. Results in Table 6 show that half (50%, n=5) of those who consumed alcohol took beer, 30% (n=3) consumed spirits while 10% (n=1) consumed traditional brew. The data is presented in Table 6

Table 6: Type of Alcohol Consumed

Type of alcohol	Frequency	Percent
Beer	5	50
Spirits	3	30
Traditional brew	1	10
Total	10	100

Source: Field Data, 2021

Frequency of Alcohol Consumption of Drink containing alcohol

Respondents in the study were asked to indicate how often they had a drink containing alcohol. Results in Table 6 show that 40% (n=4) indicated that they took alcohol 2 to 4 times in a month while an equal number took alcohol 2 to 3 times in a week. The study probed further to establish out how many drinks were taken in a typical day. Majority (60%, n=6) indicated between 1 and 2 drinks while 30% (n=3) indicated 3 or 4 drinks.

Table 6: Frequency of Alcohol Consumption of drink containing alcohol

	Categories	Frequency (n=10)	Percent
Frequency of alcohol intake	Monthly or less	1	10
	2 to 4 times a month	4	40
	2 to 3 times a week	4	40
	4 or more times a week	1	10
Number of alcoholic drinks consumed in a day	1 or 2	6	60
	3 Or 4	3	30
	5 or 6	1	10

Source: Field Data, 2021

Injury because of Drinking

The researcher sought to find out from the respondents if they or someone else had been injured as a result of their drinking. As shown in Figure 2, majority (80%, n=8) indicated that neither they nor someone else had been injured as a result of their drinking.

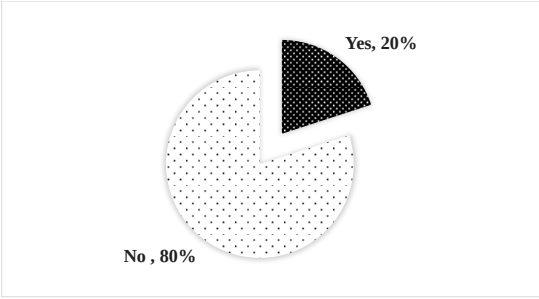

Figure 2 Injury because of Drinking

Source: Field Data, 2021

Intervention for Drinking

Respondents in the study were asked to indicate whether a relative, friend, doctor, or another health professional expressed concern about their drinking or suggested they cut down. Majority (80%, n=8) replied on the affirmative with half (40%, n=4) indicating that this happened in the previous one year while the other half (40%, n=4) indicating that it happened but not in the previous year. The findings are presented in Table 7

Table 7: Intervention for Drinking

Response	Frequency	Percent
No	2	20
Yes but not in last year	4	40
Yes during last year	4	40
Total	10	100

Source: Field Data, 2021

Summary of Alcohol Abuse

The responses in this section were summed up to assess level of alcohol abuse. The mean score was 9.3. Results in Table 8 show that (40%, n=4) scored between 1 and 7 while an equal number (40%, n=4) scored between 8 and 14. This means that 40% had low-risk consumption while an equal number had hazardous or harmful alcohol consumption respectively. The results show that 20% (n=2) had a score of over 15 meaning that they had alcohol dependence.

Table 8: Summary of Alcohol Abuse

Score ranges	Frequency	Percent
1-7 (low-risk consumption)	4	40
8-14 (hazardous)	4	40
Over 15 (alcohol dependence)	2	20
Total	10	100

Source: Field Data, 2021

Association of Socio-Demographic Characteristics and Alcohol Abuse

Chi-square tests were conducted between the socio-demographic characteristics of respondents and alcohol abuse. Results in Table 9 shows that age (p=0.0013) and marital status (p=0.013) were statistically significant. Cross tabulation showed that young respondents (<40 years) were 1.484 times more likely to have alcohol abuse. Similarly, married respondents were 7.2 times more likely to have alcohol abuse.

Table 9: Association of Demographic Characteristics and Alcohol Abuse

	Chi-square (x^2)	Degrees of freedom (df)	Significance (p)	Odds ratio (OR)
Gender	0.043	1	0.835	1.045
Age	6.178	1	0.013***	1.484
Marital status	6.178	1	0.013***	7.200
Occupation	0.474	1	0.491	1.129

****Significant at 95% Confidence Interval*

Source: Field Data, 2021

Qualitative Analysis

A Focus Group Discussion of 10 TB patients (6 males and 4 females) was conducted. The results are presented in this section. Participants were asked what they knew about alcohol. They observed that alcohol was bad as it had a lot of negative health effects. However, a few said it was acceptable as it gives one a high. Participants were asked what they knew about tuberculosis. All of them knew of tuberculosis and all recognized it as a potentially fatal disease. The respondents indicated that it has a cure and also indicated that there is stigma associated with it. One of the participants said:

Tuberculosis is dangerous and kills fast if medical attention is not sought quickly Tuberculosis can be cured if one goes to the hospital and takes the medication as advised. People fear revealing that they have tuberculosis because they think that it is because of HIV/AIDS (Focus group discussion)

The participants in focus group discussion were then asked to indicated how in their opinion, they think they got tuberculosis. Majority indicated that they did not know how they got but a few indicated that they suspect overcrowded areas such as markets, pubs and jail. Participants were further asked to indicate how alcohol abuse influences TB infection. Respondents indicated that use of alcohol negatively affects TB treatment. A participant in FGD argued that:

> *One cannot get cured from TB while using alcohol. This is because alcohol interferes with how medication is absorbed One is unable to eat well and this affects TB treatment. This is because one needs to eat well when taking Tuberculosis medication. Poor nutrition puts the body at risk of many diseases including TB due to poor immunity (Focus Group Discussion)*

Another participant said that:

> *Environment where alcohol is served has poor exchange of air. This makes it easy for one to contract or spread TB. Use of alcohol affects adherence of medication. One forgets to take drugs as instructed. This affects the treatment because cure requires consistent taking of medication as advised One fails to honor clinic appointments. This affects treatment because the doctors are not able to make required follow up (Focus Group Discussion)*

The researcher sought to find out from the participants on what information they were given about alcohol when taking TB medication. Participants indicated that they were warned against taking alcohol while on medication due to its effect on medication and food.

From the key informants' interviews, respondents indicate how alcohol abuse influenced tuberculosis in the facility. Commenting on role of alcohol in drug non-adherence default of treatment among TB patients, a respondent said:

> *An alcoholic diagnosed with TB tends to default treatment due to forgetting and lack of consistency in TB clinic visit. Alcohol abuse hinders the consumption of anti-TBs in the time and dosage. This is due to poor nutrition and alcohol absorption. Alcohol encourages patients to default treatment due to forgetfulness. This is because alcoholism affects memory (Key informant 1)*

Discussion

The objective of this study was to establish the factor contributing to co-occurrence between alcohol use and tuberculosis among Patients in Othaya Level 4 Hospital. The study established that majority (77.8%, n=35) of the respondents in the study indicated that they did not consume alcohol. This suggests that the prevalence of alcohol consumption in this sample was low. This result compares favorably with the findings of Thomas et al., (2011) in India which reported 29% of alcohol consumption among TB patients with 73% of them having a score of >8 in the AUDIT scale.

The study found that 40% had low-risk consumption while an equal number had hazardous or harmful alcohol consumption respectively. Altogether, the study showed that majority 60% (n=6) of the respondents who consumed alcohol abuse it. This prevalence in the study is markedly higher than that of Yonge et al., (2016) where 42.9% of the respondents had alcohol abuse. The prevalence of alcohol abuse is also higher than that of Suhadev et al., (2011) who found that slightly above half (52%) of the participants had an AUDIT score of >8. The level of alcohol abuse in this study is much higher than that of Laprawat et al., (2016) study in Thailand, who found that 24.4% were positive for hazardous or harmful alcohol use. It is also higher than the prevalence of alcohol abuse in Wanyonyi et al., (2017) at 39.5%.

Marital status was the main risk factor for alcohol abuse whereby married respondents were 7.2 times more likely to have alcohol abuse. This result is similar to that of Boitt et al., (2016) that found a link between the prevalence of alcohol abuse and marriage status. Married couples abused alcohol compared to singles in this study. This may be due to the source of income or stress associated with the multitasking experience and the ability to purchase alcohol as a result of stable stress. This finding is also supported by Gezahegn & Mitiku (2014), who found that married people are more likely to consume alcohol in a cross-sectional study of alcohol consumption and related factors in Ethiopian. However, this result is different from the findings of Kendler et al. (2016) that showed that the psychological and social aspects of marriage, especially the health monitoring of spouse interactions, provide strong protection against the development of alcohol use disorders. Reczek et al., (2016) results show that marriages, including remarriage, reduced alcohol use by men compared to unmarried and that divorce caused alcohol use by men.

Age (p=0.0013) and marital status (p=0.013) were statistically significant for alcohol abuse whereby young respondents (<40 years) were 1.484 times more likely to have alcohol abuse. This result is in tandem with Han et al., (2017) who reported that alcohol abuse is common among older adults. This result is however in contrast to findings of Delker, Brown and Hasin (2016) who found that young adults aged 18–25 were at particularly high risk of developing alcohol use disorder. It is also in contrast to findings of Kendagor et al., (2018) who found that the highest proportion of HED was reported in the 18–29-year age group.

Recommendations

The study recommends that any patient checking in with TB should also be screened for alcohol abuse. This is because the issues of multi-drug TB resistance may be mitigated if issues of alcohol and non-adherence to medication are addressed. Patient checking in for addiction treatment should be screened for TB. The study established that there was a link between marital status and risk of alcohol abuse whereby married respondents were more likely to have alcohol abuse. This may be due to the stress associated psychosocial aspects of marriage. This study recommends that county government should employ counsellors at the hospital to support patients who may have marital challenges. Since the study established a link between alcohol misuse at an early age (18–29), counselling sessions should target this group

The study recommends that the ministry of health ought to conduct a national health education campaign on the risks of alcohol in regards to TB infection. The current campaign is more focused on the curative aspect of TB. Preventive component of sensitizing public on dangers of alcohol use is needed. It is also recommended that free psychological support be availed for alcohol users who have tested positive for TB to enable them fight alcohol abuse and addiction. There is a need to have inter-sectoral collaboration with agencies like NACADA that conduct public education on substance abuse including alcohol and outreach programs. It is also important to employ technology by using tele health and Mhealth interventions targeting reduction in alcohol abuse. The study also recommends that county government of Nyeri ought to enforce existing alcohol control regulations to reduce alcohol abuse. For instance, the requirement that bars should only open at 5 pm is usually not observed and therefore this requirement ought to be enforced to reduce alcohol accessibility. The national government should tighten alcohol advertising and sponsorship which attracts many to indulge. Alcohol billboards should for example be banned and alcohol advertisements on TV and radio ought to be done at late hours and be very infrequent to discourage overproportion of alcoholic substances.

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Prevalence and Patterns of Alcohol and Drug Abuse among University Students

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Abstract

Globally, 29 million people face challenges on psychoactive substance abuse. Three million deaths and 132.6 million disability adjusted life years were attributed to alcohol globally in 2016. Use of psychoactive substances by the youth negatively affect cognitive development, judgement, health and academic outcomes, Kenya has 7.9 million youths aged 15-24 years, among which are University students. Individual characteristics and environmental influences from family and peers makes the youth vulnerable to psychoactive substance use. This study aimed to determine the prevalence of alcohol and substance use; factors associated with alcohol and substance use; and predictive factors for the vice among University students. The study was conducted at three purposively sampled University of Nairobi campuses. A self-administered questionnaire on psychoactive substance use was used. Respondents were registered students at the time of study residing in the three campuses. Hostels were systematically sampled and rooms randomly selected. Independent variables included commonly used psychoactive substances. Dependent variables were age, gender, campus and year of study. Data was analyzed using Stata SE 12 software. Descriptive, logistic regression and multivariate analysis were conducted. Majority of students were in the 20-24 years age bracket and the highest student proportion (29.3%) in 3rd year of study. The proportion of male respondents was 55.2%. Alcohol, marijuana and cigarettes were the most prevalent substances used at 41%, 14% and 13.5% respectively. Cocaine and heroin were the least used. Consumption of alcohol was significantly associated with male gender, higher year of study, city campuses (Main and Chiromo) and older age. Marijuana use was significantly associated with the male gender, higher year of study and older age. Use of cocaine and heroin were not significantly associated with any of the demographic factors under study. Male gender, city campuses and higher year of study were predictive factors for alcohol consumption and cigarette smoking.

Key words: *Alcohol and drug abuse, undergraduate students, drug addiction*

Introduction

About 29 million people globally substance use disorder (SUD) among whom 12 million are people who inject drugs (PWID) (Chukwuma, 2017). World drug report in 2016 indicated that 3 million deaths and 132.6 million disability-adjusted life years (DALYs), worldwide were attributable to alcohol use. Comparing with other illnesses like tuberculosis, diabetes and HIV and AIDs, alcohol use disorder has higher mortality (Kamenderi et.al, 2021). It is estimated that the global disease burden due to consumption of alcohol and illicit drugs is 5.4% while 3.7% is attributable to tobacco use alone (Chukwuma, 2017). There is some geographical variation with regard to the most commonly used psychoactive substances. In Europe and Asia, opiates are predominant While in most of Africa, cannabis is the most commonly used especially in South Africa. A national survey carried out in Nigeria revealed that alcohol and cannabis were the most common psychoactive substances in use

(Adamson et.al. 2015). In Kenya, out of the estimated population of 47.5 million people, 7.9 million (16.7%) are young people aged 15-24 years (KNBS, 2019). Most university students are in this age category with the majority aged between 17 and 24 years. This is the transitioning age to adulthood and a key period in life during which there is rapid growth in social life and new behavior is easily picked as compared to adult life. This is also the period when these young people move away from the close supervision of teachers at schools and parents at home, thereby giving them newly found freedom to make personal choices. The commonly seen consumption of alcohol and use of illicit drugs among undergraduate students is associated with this favorable environment away from regular supervision (Atwoli et al., 2011). Unfortunately, consumption of these psychoactive substances is often associated with poor academic outcomes arising from their effects on the students' memory, judgement, attention and learning skills.

This study examined the prevalence and patterns of alcohol and drug abuse among undergraduate students at selected campuses of University of Nairobi to determine the extent of the problem with an aim of instituting interventions.

Methodology

Study Sites: University of Nairobi is the oldest and largest public university in Kenya with an estimated total student population of 50,000. The university has 10 campuses, with 8 of these in Nairobi, and one each in Kisumu and Mombasa. The study was conducted in 3 of the Nairobi campuses namely: Main campus, Chiromo and Kikuyu campus.

Study Population: The study population comprised of undergraduate students residing at the University hostels.at the time of the study.

Sampling Procedures

The three campuses were purposively sampled. Systematic sampling was used to select the hostels. At the selected hostels, student rooms were randomly sampled and data collected from all students residing in the sampled rooms. A digital questionnaire was employed for students who were willing to provide their consent to participate in the study.

Sample size determination

Sample size was determined using the Cochran formula (Cochran, 1977) namely:

$$n = \frac{Z^2pq}{e^2}$$

Where;

n is estimated (desired) sample size,

Z = 1.96, the standard Z-Score for a 95% level of confidence

p=estimated proportion of young people who use alcohol or any form of substance abuse (assumed 0.5)

q = (1-p) = 0.5

e=error

Therefore

$n= (1.96^2X0.5X0.5)/ (0.05X0.05) = 385$

Thus, the desired minimum number of students from each campus was 385 giving a total of 1155 students. However, a slightly higher number of students were sampled 1864. Chiromo campus has a relatively small population and 241 students were sampled.

Data collection Procedures

Data was collected using a semi-structured self-administered questionnaire. The questionnaire was pre-tested prior to data collection to ensure questions asked were well understood. After pre-testing, the questionnaire was digitized and availed to the research assistants' smart phones. The research assistants' administered the consent and guided the study participants on how to complete the questionnaire digitally.

Before administering the questionnaires, the goal of the study and the eligibility criteria were explained to the participants and an informed consent sought from the respondents. Participants had to be University of the Nairobi students, with their registration confirmed using a student identity card. Written informed consent to participate in the study was sought and those who consented were enrolled to fill the digital questionnaire.

Data Analysis

Demographic variables collected included gender, age, year of study and University campus of residence. Use of alcohol, marijuana, shisha, kuber, cigarettes, snuff/chewed/piped tobacco, miraa, heroin and cocaine were among substances and drugs evaluated. Data was analyzed using Stata SE 12 software. Analysis included descriptive statistics, logistic regression and multivariate analysis.

Ethical Considerations

Ethical clearance to conduct the study was obtained from Kenyatta National Hospital-University of Nairobi Ethics Review Committee (KNH-UoN ERC). Research permit to carry out the study was obtained from the National Commission for Science, Technology & Innovation (NACOSTI). Permission to conduct the study at the University of Nairobi was obtained from the university administration. Written informed consent was given by all the participants prior to completing the study questionnaire. Anonymity of the respondents, privacy and confidentiality was assured to the participants. No participant's names were written in the documents and instead, unique identifiers were used.

Results

Socio demographic Characteristics of Study Population

Demographic characteristics of the students is shown in Table 1. The majority of the students 1566 (83.6%) were between 20 and 24 years old. age group. Female students were slightly higher than male students at 55.2%. The study participants were distributed among all four years of study with third year students comprising 29.3% while second year students comprised 17.2% of the total.

Prevalence of lifetime alcohol and substance use

Alcohol was the most used substance with 758 (41%) of students indicating they had ever used it at least once in their lifetime. Other substances included marijuana, cigarettes and shisha with a lifetime prevalence of 14%, 13.5% and 11.1% respectively. A small number of the students, 12 (0.7%) and 5 (0.3%) indicated to have ever used cocaine and heroin respectively. The lifetime prevalence of alcohol and substances of abuse ever use is shown in Table 2.

Substance use in the last 12 months and the last one month

Table 3 shows alcohol and substance use in the last one year and in the last one month. Alcohol, marijuana and cigarettes were the most used substances both in the last 12 months and last one month.

Substance dependency

Substance dependency was assessed by asking the students if there were any substances that they could not do without. Although used by very few students, the substances that students would not do without (indicative of addiction) were

heroine 2 (33.3%) and cocaine 3 (23.0%). Despite alcohol being the most prevalently used psychoactive substance compared to marijuana, many students, 58 (22.4%) were likely to be dependent on marijuana as compared to alcohol 142 (18.7%). (Figure 1).

Factors associated with alcohol and substance use

Analysis in this section relates to prevalence of lifetime use of alcohol and substances of abuse. Findings showed that the lifetime prevalence of alcohol consumption was higher for male students, those in year 2 to 4, students residing in two city campuses (main campus and Chiromo) and for those aged over 21 years. Inferential statistics showed that consumption of alcohol was significantly associated with male gender (Odds Ratio (OR) 1.3375 95% Confidence Interval (CI) (1.1084 -1.6139) p=0.002), higher year of study (OR 1.8358, 95% CI 1.4612 – 2.3066, p<0.001, city campus (OR 1.231, 95% CI 1.0203 – 1.4852, p=0.03 and older age. (OR 1.5460, 95% CI (1.2718 - 1.8794), p<0.001 (Table 4).

As indicated in Table 4, marijuana use was significantly associated with male gender, higher year of study and older age. Cigarette smoking was significantly associated with male gender, higher year of study, city campuses and older age. Snuff/chewed/piped tobacco was significantly associated with the male gender and older age. Shisha use was significantly associated with higher year of study, city campuses and older age while miraa use was significantly associated with male gender, higher year of study and older age. Kuber use was significantly associated with male gender, higher year of study, city campuses and older age. Use of cocaine and heroin were not significantly associated with any of the demographic factors under study.

Predictive factors

Multivariate analysis was used to identify predictive factors for alcohol and substance use. Factors associated with alcohol and substance use at P value of 0.1 were entered into the logistic regression model to identify predictive factors. Male gender, city campuses and higher year of study were predictive factors for alcohol consumption and cigarette smoking. Higher year of study and male gender were predictive for marijuana use while male gender and city campuses were predictive factors for snuff/chewed/piped tobacco use. City campuses, older age and higher year of study were predictive factors for shisha use while male gender, city campuses and older age were predictive for kuber use. (Table 5)

Discussion:

The findings show that lifetime prevalence of substance use among university students sampled from the three university of Nairobi campuses is higher than that of secondary school students (Atwoli et al., 2011; Kamenderi et al., 2019). From these studies and another study by Mbuthia et al (2020), substance use rate increases with age and education levels and this calls for interventions targeting students in the lower years of study. Aiming at first year students in prevention as they join the university may reduce the risk of psychoactive substance use among the students as they progress with their studies and also prepare them for later challenges in life. As has been seen in other studies (Kamenderi et al., 2019; Mbuthia et al., 2020; Onya et al., 2012), this study showed that alcohol was the most widely used substance followed by marijuana and cigarette smoking. Intra-personal and interpersonal factors such as age, gender, peer pressure and parental care are considered to be major factors influencing substance use. In addition, Mbuthia et al (2020) has shown that male students were more likely to abuse substances more compared to their female counterparts. This could be as a result of peer pressure, male egoism, poor parenting, excess freedom, stress and cultural factors where substances like alcohol are upheld as social drinks. Other predisposing factors are the environmental risk factors including availability of substances and free time without much of healthy recreational activities as noted in other similar studies (Onya et al., 2012). Studies conducted in Kenyan secondary and primary schools (NACADA, 2021) show that some students start abusing substances from primary

schools then proceed using the substances in secondary schools. This study indicates that some students report to the university while using psychoactive substances drugs, and the numbers of students using the substances significantly increases as the students' progress in studies. The consequences of early alcohol and drugs abuse have been shown in previous studies to include: poor social economic, psychosocial and health outcomes, poor educational gains, risky sexual behavior making them vulnerable to sexually transmitted infections, and unplanned early pregnancies (Odgers et al., 2008). It has also been shown that delaying early exposure to psychoactive substances can prevent many adult health complications (King et al., 2006; Stueve et al., 2005; Ellickson et al., 2003; Korir et al., 2013)

Non Communicable diseases like lung cancer and oral cancer are closely associated with cigarette smokers and those who orally take tobacco respectively (Nelson et al., 2017). Prolonged use of psychoactive substances leads to addiction or psychoactive substance use disorder a disease that manifests through impaired health, social function and voluntary control Tesfaye et al., 2014). A person with substance use disorder is not able to cope without using drugs and as seen in this study, some students are addicted to substance use and this therefore calls for treatment interventions. Some news articles indicate that some of these drugs like cocaine are life threatening and can cause heart attack, stroke, seizure or coma among other negative effects.https://www.medicalnewstoday.com/articles/effects-of-drug-abuse https://drugabuse.com/blog/drug-alcohol-effects/ Being the second most abused substance after alcohol, marijuana though illegal is readily accessible to students as seen from this study. This is in line with other studies (Damiri et al., 2018; Ngure et al., 2019) some of which suggested that use of marijuana is dependent and significantly associated with use of other illicit drugs due to genetic and environmental factors (Agrawal et al., 2004). There are legal consequences associated with drug use and studies have shown changes in students behavior as a result of drug influence with some of them becoming bullies, beating and raping their teachers, killing their fellow students, robbery due to financial constraints and sexual behavior disorders among others (King'endo, 2015; Elliott et al., 2012) Generally substance use majorly impact negatively not only on an individual, or the immediate family but also on the entire community and is a very costly challenge especially when treating those who get addicted (Das et al., 2016).

Conclusion

The study shows that alcohol and marijuana are the most widely used substances, and this is despite the use of marijuana being illegal. All these substances are readily accessible to students from the first year to later years of study. Although cocaine and heroin were not easily accessible, they were the most addictive substances. The study therefore recommends students centered intervention programs to prevent alcohol and drug abuse. These programs should be designed and implemented by the students for ownership. Further, these programs should target students at their entry to first year so as to mitigate progression of drug use problem in the other levels of study Finally, the university should implement screening, brief intervention and referral to treatment (SBIRT) to detect early substance use risks and related challenges among students.

Study Limitation

This study is unlikely to be generalized to inform the situation in other UoN campuses because the campuses were purposively and not randomly selected hence not given an equal chance. The findings can however be used to inform intervention programs.

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Annex:

Table1: Socio demographic Characteristics

Variable		N	%
Age category (yrs)	15-19	171	9.1
	20-24	1566	83.6
	25+	137	7.3
Year of study	1st	453	24.2
	2nd	322	17.2
	3rd	549	29.3
	4th	540	28.8
Gender	Male	1034	55.2
	Female	840	44.8
Campus	Kikuyu	834	44.5
	Main	799	42.6
	Chiromo	241	12.9
Religion	Christians	1477	78.8
	Hindu	8	0.4
	Muslim	103	5.5
	Others	286	15.3

Table 2: Lifetime prevalence of alcohol and substance use

Substance Use	No. Using	No. Not Using	Total	% Using
Alcohol Use	754	1,083	1,837	41
marijuana	255	1,564	1,819	14
Cigarettes	246	1,575	1,821	13.5
Snuff/chewed/piped tobacco	246	1,575	1,821	13.5
Shisha	203	1,623	1,826	11.1
Miraa	128	1,705	1,833	7
Kuber	71	1,750	1,821	3.9
Cocaine	12	1,821	1,833	0.7
Heroin	5	1,820	1,825	0.3

Table 3: Substance use frequency (n=1874)

Substance	Use in the last 12 months	Use in the last one month
Alcohol	661 (35.3%)	441 (23.5%)
Marijuana	194 (10.4%)	137 (7.3%)
Cigarette Smoking	143 (7.6%)	103 (5.5%)
Shisha	81 (4.3%)	41 (2.1%)
Miraa	77 (4.1%)	54 (2.9%)
Snuff, chewed piped tobacco	49 (2.6%)	35 (1.9%)
Kuber	27(1.4%)	23 (1.2%)
Cocaine	7 (0.3%)	5 (0.2%)
Heroine	2 (0.1%)	2 (0.1%)

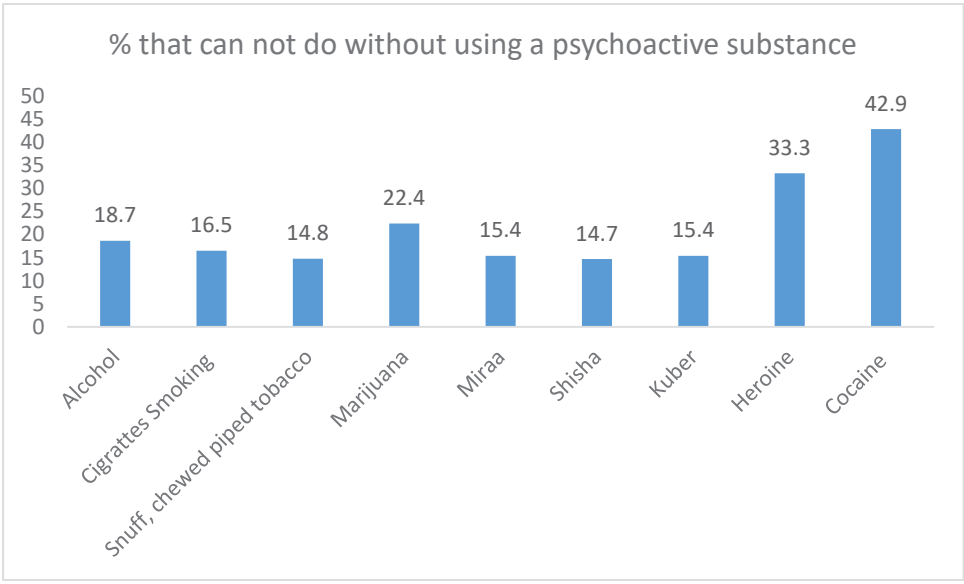

Figure 1: Level of addiction for various substances

Table 4: Association of substance use with demographic factors

Factor	Use substance	Do Not use	OR (95% CI)	P-Value
Alcohol				
Gender: Male	446	563	1.3375 (1.1084 - 1.6139)	0.002
Female	308	520		
Year of Study: Year 2,3,& 4	614	768	1.8358 (1.4612 - 2.3066)	0.000
Year 1	135	310		
Campus: Main and Chiromo	441	578	1.2310 (1.0203 - 1.4852)	0.030
Kikuyu	313	505		
Age: Over 21 yrs	515	630	1.5460 (1.2718 - 1.8794)	0.000
21 and below	239	452		
Marijuana				
Gender: Male	155	839	1.3394 (1.0221- 1.7551)	0.034
Female	100	725		
Year of Study 2,3,& 4	221	1,154	2.3387 (1.5946 - 3.4300)	0.000
Year 1	33	403		
Campus: Main and Chiromo	143	862	1.0398 (0.7964 - 1.3575)	0.774
Kikuyu	112	702		
Age: Over 21 yrs	189	952	1.8379 (1.3642 - 2.4761)	0.000
21 and below	66	611		
Cigarettes				
Gender: Male	175	822	2.2579 (1.6845 - 3.0265)	0.000
Female	71	753		
Year of Study 2,3,& 4	204	1,166	1.8079 (1.2603 --2.5933)	0.001
Year 1	39	403		
Campus: Main and Chiromo	155	850	1.4528 (1.1011 - 1.9168)	0.008
Kikuyu	91	725		
Age: Over 21 yrs	175	960	1.5764 (1.1751 - 2.1148)	0.002
21 and below	71	614		

Snuff/chewed/piped tobacco				
Gender: Male	61	941	1.9821 (1.2405 - 3.1671)	0.004
Female	26	795		
Year of Study 2,3,& 4	71	1,301	1.4530 (0.8355 - 2.5268)	0.186
Year 1	16	426		
Campus: Main and Chiromo	56	954	1.4808 (0.9453 - 2.3196)	0.086
Kikuyu	31	782		
Age: Over 21 yrs	63	1,072	1.6235 (1.0046 - 2.6237)	0.048
21 and below	24	663		
Shisha				
Gender: Male	104	896	0.8524 (0.6365 - 1.1415)	0.284
Female	99	727		
Year of Study 2,3,& 4	181	1,199	2.8476 (1.8042 - 4.4946)	0.000
Year 1	22	415		
Campus: Main and Chiromo	136	874	1.7395 (1.2779 - 2.3679)	0.000
Kikuyu	67	67		
Age: Over 21 yrs	160	980	2.4376 (1.7159 - 3.4628)	0.000
21 and below	43	642		
Miraa				
Gender: Male	95	910	2.5150 (1.6736 - 3.7794)	0.000
Female	33	795		
Year of Study 2,3,& 4	110	1,268	2.0627 (1.2384 - 3.4359)	0.005
Year 1	18	428		
Campus: Main and Chiromo	67	949	0.8750 (0.6106 - 1.2539)	0.467
Kikuyu	61	756		
Age: Over 21 yrs	97	1,041	1.9928 (1.3147 - 3.0207)	0.001
21 and below	31	663		
Kuber				
Gender: Male	53	946	2.5025 (1.4541 - 4.3067)	0.001
Female	18	804		
Year of Study 2,3,& 4	62	1,307	2.9546 (1.3423 - 6.5036)	0.007
Year 1	7	436		
Campus: Main and Chiromo	30	980	0.5749 (0.3557 - 0.9293)	0.024
Kikuyu	41	770		

Age: Over 21 yrs	59	1,073	3.0975 (1.6529 - 5.8049)	0.000
21 and below	12	676		
Cocaine				
Gender: Male	7	998	1.15451 (0.3651 - 3.6511)	0.807
Female	5	823		
Year of Study 2,3,& 4	9	1,371	0.9628 (0.2595 - 3.5720)	0.955
Year 1	3	440		
Campus: Main and Chiromo	9	1,009	2.4143 (0.6515 - 8.9469)	0.187
Kikuyu	3	812		
Age: Over 21 yrs	6	1,135	0.7253 (0.2205 - 2.3855)	0.597
21 and below	5	686		
Heroin				
Gender: Male	2	996	0.5515 (0.0919 - 3.3086)	0.515
Female	3	824		
Year of Study 2,3,& 4	5	1,369		
Year 1	0	442		
Campus: Main and Chiromo	2	1,013	0.5311 (0.0885 - 3.1860)	0.489
Kikuyu	3	807		
Age: Over 21 yrs	4	1,133	2.4219 (0.2701 - 21.7129)	0.429
21 and below	1	686		

Table 5: Predictive factors for alcohol and substance use

Factor	Odds Ratio	[95% Conf.	Interval]	P Value
Alcohol				
gender	1.310069	1.081902	1.586354	0.006
campus	1.348485	1.112161	1.635026	0.002
age	1.154365	0.8979666	1.483973	0.263
study year	1.71971	1.283454	2.304253	0.000
Marijuana				
gender	1.283468	0.9759095	1.687955	0.074
campus	1.145119	0.8733464	1.501463	0.327
age	1.301383	0.9035759	1.874329	0.157
study year	1.940207	1.216396	3.094719	0.005

Cigarette smoking				
gender	2.243091	1.666889	3.018472	0.000
campus	1.628616	1.225502	2.164328	0.001
age	1.162039	0.8023469	1.682981	0.427
study year	1.670268	1.061735	2.62758	0.026
Snuffed/ Chewed/piped tobacco				
gender	1.983842	1.237386	3.180598	0.004
campus	1.640713	1.041561	2.584524	0.033
age	1.52578	0.814781	2.857214	0.187
study year	1.102208	0.5347566	2.271804	0.792
Shisha				
gender	0.8216867	0.6098837	1.107045	0.197
campus	1.949387	1.425205	2.666361	0
age	1.887603	1.222278	2.915087	0.004
study year	2.009023	1.144122	3.527746	0.015
miraa				
gender	2.412119	1.601109	3.633929	0.000
campus	0.9944423	0.6898521	1.433518	0.976
age	1.536741	0.9160371	2.578031	0.104
study year	1.441274	0.7639571	2.719094	0.259
Kuber				
gender	2.185847	1.2616	3.787198	0.005
campus	0.6186589	0.3770225	1.015162	0.057
age	2.176881	1.01768	4.656485	0.045
study year	1.507252	0.581318	3.90803	0.399

The relationship between depressive disorders and substance use among women in addiction recovery in Kiambu County, Kenya

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Abstract

Depressive disorders have far-reaching ramifications especially to affected women since they cannot manage their lives and families well. The intent of this paper was to investigate the relationship between depressive disorders and substance use among women in addiction recovery in Kiambu County. Descriptive research design was employed to evaluate the four selected recovery centres in Kiambu with a sample of 36 participants from a population of 120 individuals. Data was collected using questionnaires, in-depth interviews and focus group discussions. Descriptive analysis was used for quantitative data while qualitative data was analysed thematically. Correlation analysis was used to establish the relationship between depressive disorders symptoms and substance use. The findings identified domestic violence, feeling guilty and feeling worthless as symptoms of depressive disorder symptoms associated with substance use. A strong relationship was established between depressive disorders and substance use with more than 60% of respondents attesting to this. Correlation analysis established strong positive (r=0.603) association between domestic violence and substance use. The study recommended the recovery centers to engage competent and experienced psychiatrists and psychologists in mental health in order to deliver their services effectively and professionally. The study will benefit both the National and County governments in coming up with effective policies to deal with depressive disorders and substance use among women. This will go a long way in reducing the number of women under substance use in Kiambu County and the country at large.

Keywords: *Substance use, depressive disorders, treatment and rehabilitation*

Introduction

Globally, depressive disorders are becoming a common risk factor for suicide worldwide. According to WHO [2017] report, depressive disorders are creating critical challenges for individuals with the illness thereby affecting their families, communities, and work place and general populations. The report further posits that 4.4% of the global population has been affected and that the Diagnostic Statistical Manual for Mental Disorders (DSM-5) classifies depressive disorders as disruptive mood deregulation disorder, major depressive disorder associated with major depressive episode, persistent depressive

disorders or dysthymia (WHO, 2017). Related study also shows depressive disorders to be premenstrual dysphonic disorder, substance/ medication-induced depressive disorder, and depressive disorder due to another medical condition. A study by Thomas & Seedat (2018), posits that depressive disorders in adults increase in prevalence of 20 to 30 years of age whereas the illness continues to increase in middle age. The study further postulate that among the depressive disorders that were introduced during the review in the changes of DSM5, were the disruptive mood dysregulation disorder (DMD) and the premenstrual dysphonic disorders (PMDD) as the two new disorders included in the manual.

A report released by WHO (2020) postulate that women are more prone to depressive disorders than men. The study further posit that at least 800,000 individuals die on yearly basis due to suicide related to depressive disorders, which is the second leading cause of death between 15 to 29 years. In India and China, WHO (2017) reported the number of depressive cases were estimated to be 322 million. A study carried out in America by Liu et al (2019), posit that the number of cases of depression worldwide increased from 17.2 million in 1990 to 25.8 million in 2017 representing an increase of 49.86%. Another study by Morin (2020) reveals that the statistical percentage of women with depression is 8.7% and 5.3% depressive issues with men. A study carried out within 26 counties in United Kingdom (U.K), postulate that depressive disorder had a high prevalence that contributed suicidal, homicidal and disability in the world (Mental Health Foundation, 2016).

The global report released in Austria – Vienna, reveals that women with depressive disorders are more likely to engage in substance use leading to bizarre behaviours (UNODC, 2018). In Switzerland, the most likely population to get depressive disorders are those faced with poverty, lack of employment, grief, divorce or separation, trauma, relocations, alcohol and drug use (WHO, 2017). In Hong Kong the number of women taking newer anti-psychotics drugs for the depressive treatment was estimated to rise by 65% (WHO, 2017). A statistical study carried out in Indian States on mental disorders showed that major depressive disorders (MDD) and anxiety disorders (AD) manifested predominantly during adulthood (WHO, 2019). The study further supported that the prevalence percentages 3·1–3·6% for depressive disorders, 3·0–3·5% for anxiety disorders and 0·2–0·3% for schizophrenia disorder. Thus, depressive disorders outnumbered other disorders varied 1·9 times among the Indian States with 45·7 million.

In Africa there are similar challenges of depressive disorders affecting women. A study carried out in Uganda by StrongMinds (2016) revealed that by year 2015 over 1800 women were diagnosed with depressive illnesses. The study further posits that an estimation of 86% of women was treated through therapy intervention. The same study projected that by year 2025 an approximate number of two million women with depressive issues will

have been treated. The studies across sub-Saharan Africa especially in Ghana and Côte d'Ivoire showed high prevalence of antenatal depression rating from 27 and 33% (Osok et al., 2018). Similar studies showed that in Ethiopia, the prevalence of antenatal depression was 24.94%, and in Tanzania it was 39.5%.

Kenya is reported to have higher number of populations with depressive issues. A study carried out by Jacob (2017) states that an estimate statistic of 1.9 million Kenyans is ailing from depression related to substance abuse. The study further posits Kenya as being ranked the sixth country in Africa with cases of depressive disorders. Another study carried out in Nairobi, Kenya by Osok et al., (2018) postulates that depression in Sub-Saharan Africa is leading to suicide. The study further revealed that mental health services in Sub-Saharan Africa have demonstrated to be mostly restricted to tertiary psychiatric facilities and therefore accessing treatment services becomes difficulty.

Close (2020) postulates that there is a relationship between depression and substance abuse. The study revealed that 33% of patients with major depressive disorders engage in substance abuse whereas 16% of women showed postpartum depressive symptoms after giving birth. A report by NIDA (2019), reveals that the mental disorders which include depression, bipolar disorder, Attention-Deficit Hyperactivity Disorder (ADHD), psychotic illness, borderline personality disorder, and antisocial personality have a high like a hood to be caused by substance use disorders. The study further noted that among the individuals above 18 years of age have one out of four who have suffered from Severe Mental Illness (SMI) also have Substance Use Disorders (SUD).

Study by Liu et al (2019), states that one to seven individuals (15%) have one or more mental or substance use disorders. The study noted that there is an overlap between major depressive disorder (MDDs) and substance use disorders (SUDs) with an estimated prevalence of co-occurring disorders ranging from 40% for the individuals with major depressive disorders (MDDs). According to Ritchie and Max (2018), the mental and substance use disorders are common.

Another study by the Editorial Staff (2019) posits a relationship between mood disorders like depression and substance abuse, with those diagnosed with depressive disorders being more likely to abuse substances than those without mood disorders. A report released by SAMHSA (2019), reveals an estimated 9.2 million adults aged 18 and above comprising 3.7 per-cents of all adults showed both mental illnesses and substance use disorder (SUD). Whereas in the year 2017, around 3.2 million adults with 1.3 per-cents of all adults demonstrated co-occurring Severe Mental Illness (SMI) and substance use disorders (SUD).

In Africa, mental disorders have been viewed as a disease brought about by the individuals themselves who engage in illegal drugs (Gberie, 2017). Further, the study noted

that the aspect of substance use may be one reason given by African governments to not prioritize mental health issues. According to Arpa (2017) when women are depressed, they tend to experience a feeling of guilt, excessive sleeping, overeating, visiting friends, and engaging in house chores substance use to overcome depression.

National Authority for the Campaign Against Alcohol and Drug Abuse (NACADA) is a body that coordinate, facilitate, educate and create awareness to fights against substance abuse in Kenya. According to the Ministry of Health drug and substance abuse- report of 2015, there is a causal relationship between harmful use of substance abuse like alcohol and a variety of mental and behavioural disorders and other non-communicable diseases (Kimbui et al., 2018).

The studies reviewed have presented contextual research gaps, since some of the studies on the relationship between depressive disorders and substance use have focused on different contexts from this study. The study by Close (2020) focused on the worldwide as well as (Gberie, 2017) focusing on the African context. Even though their contribution to the topic is relevant, the contextual focus is not necessarily Kenyan. In Kenya, studies such as that of Kimbui et al (2018) and the National Authority for the Campaign Against Alcohol Drug Abuse (NACADA) report of 2015 establishing the relationship between substance use and behavioral disorders have also presented contextual research gaps since they have not necessarily focused on women recovering from treatment centers and particularly in Kiambu County. Contextual differences are important and this study gives a different angle considering that it is not yet clear what leads people with depressive disorder to choose to abuse substance, yet substances such as alcohol, marijuana, khat, and other hard drugs are not always readily available or cheap to acquire. The researcher is therefore confronted with the question as of why women with depressive disorders choose substance use over other alternatives to overcome their depression.

Kiambu County is one of the counties in Kenya with the highest number of recovery centers with significant number of women undergoing treatment and rehabilitation. Kiambu County is a metropolis county with high population and growing economic activities. The County has many markets places where alcohol and drugs are accessible for all ages (Muriithi, 2018). There are non-governmental recovery centres renowned for the treatment of both women and men with depressive and addiction issues. The pharmacotherapy, psychotherapy, family therapy as well as Alcoholic Anonymous (A.A) and Narcotic Anonymous (N.A) support systems are offered for depressive disorders management and sobriety. This study focused on the depressive disorders of substance use among women in addiction recovery in Kiambu County. The independent variable was the depressive disorders and the dependent variable was substance use.

Ideally, the depressive disorders and substance use among women is an alarming issue today. Several cases of depressive illness

are raising concerns, and the issue is leading to hopelessness, social withdrawal as well as lack of interest in day-to-day activities. The depressive illness among women is causing mental health problems creating a worse scenario to the individual's life satisfaction and the well – being of a woman. Consequently, women encounter major challenges like marital problems leading to strained relationships including divorce, separation or even being widowed. Other women who are jobless face challenges of poverty, low self – esteem shame and guilty leading to low life satisfaction hence at high risk of depressive disorders and ultimately substance use. Strong Minds (2016), projected that by 2025 an approximate number of two million women with depressive issues will have been treated depressive disorders illness. A study by WHO (2017) postulates that the number of women taking newer anti-psychotics drugs for the depressive treatment was estimated to rise by 65%. Meanwhile, Kimbui, Kuria, Yator, & Kumar (2018) point out that depression and other mood disorders are often associated with substance use. Despite the interventions of depressive disorders on substance use in Kenya, there is a high prevalence of depressive disorders among women. Wekesah and Kigongo (2019) found that several depressive issues in Kenya remain undiagnosed and unidentified due to few trained psychiatrists within the country thus causing inadequate service delivery of mental health awareness and management. This challenge, if not effectively addressed will escalate leaving behind unattended women who are potentially productive in life. Therefore, it was against this background that the current study sought to assess the relationship between depressive disorders and substance use among women in addiction recovery in Kiambu County, Kenya.

This was done by responding to the following specific objective:

The study aimed at establishing the relationship between depressive disorders and substance use among women in addiction recovery in Kiambu County in Kenya.

Research Methodology

The study adopted correlational study design in order to systematically describe the study phenomenon from a sample drawn from a predetermined population. The population comprised of 120 women aged 18 years and above who were recovering from addiction and the staff working at the four selected treatment centres including: Retreat rehabilitation centre, Blessed Talbot rehabilitation centre, Care Tech medical and rehabilitation, and Teen Challenge rehabilitation centre in Kiambu County. The key informants were senior policy makers, psychiatrist and psychologist. A sample of 36 respondents which represents 30% of the target population was used in the study. Purposive sampling was used to select treatment and recovery centers as well as the key informants for interviews. In addition, convenience sampling was used in the selection of the focus group respondents where the researcher picked the women in the rehabilitation centre with the greatest number of female patients. Data was collected using questionnaires, interview schedule

sheets and focus group discussions. The study employed both quantitative and qualitative methods. Descriptive statistics were used for quantitative data and presented using tables, graphs; pie charts and percentages with the use of MS excel to facilitate quick reference for analysis. Qualitative data obtained from interview guides and focus group discussions was coded, interpreted and analyzed along the study objectives. Data was presented using thick descriptions and verbatim quotes. Correlation analysis was used to test the relationship between depressive disorders and substance use among women in addiction recovery in Kiambu County.

Results

Data was analysed from a sample of 36 participants with a response rate of 100%. This comprised of 36 women who were drug and substance users as well as 4 key informants in the four selected treatment and recovery centres in Kiambu County. The highest number of women in the addiction recovery and treatment centres were below the age of 45 years with majority (25.0%) being in the age category 26-35 years. Majority of the women in the centres were separated (33.8%), single (25.7%) and divorced (19.8%) with very few having other marital status (6.0%). Most of the women in the centres had one child (37.1%) and two children (30.4%), three children constituted (16.9%) while those who had more than three children and no child comprised of (7.8%) each. Majority of the women had attained secondary education (33.6%), graduate (25.0%) and tertiary education (19.8%) with very few (9.5%) having primary education. Notably, (40.5%) of women in the addiction recovery and treatment centres were manual labourers, (38.8%) were employed, and those in business constituted (17.3%) while (3.4%) did not specify their income generating activities. There were 4 key informants who included a psychiatrist, psychologists, and a senior policy maker.

Table 1: Demographic characteristics of the participants

Characteristics of the respondents	frequency	percentage	characteristics of the respondents	frequency	percentage
Age			Level of education		
15-25 years	3	9.5%	Primary	3	9.5%
26-35 years	9	25.0%	Secondary	13	33.6%
36-45 years	8	23.2%	Tertiary	7	19.8%
46-55 years	6	16.4%	Graduate	9	25.0%
56-65 years	6	15.5%	Others	4	12.10%
66 and above years	4	10.3%			
Marital status			Income Generating activities		
Single	9	25.7%	Manual labourer	15	40.5%
Separated	13	33.8%	Employed	14	38.8%
Divorced	7	19.8%	Business	6	17.3%
Widowed	5	14.7%	N/A	1	3.4%
Others	2	6.0%			
Number of children					
None	3	7.8%			
One child	13	37.1%			
Two children	11	30.4%			
Three children	6	16.9%			
More than 3 children	3	7.8%			

Demographic characteristics of the participants

The Relationship between Depressive Disorders and Substance Use

Generally, the research findings revealed that majority of the respondents' depressive disorders related with drug use among women in addiction recovery in Kiambu County with a mean of 2.61 and standard deviation of 1.215. The study findings on the relationship between specific depressive disorders and drug use among women in addiction recovery in Kiambu County are shown in table 2.

Table 2: The Relationship between Depressive Disorders and Substance Use

Relationship between Depressive Disorders and Substance Use	1	2	3	4	5	Mean	S.D
I used substances because of constant physical and emotional abuse I experienced from my husband	2.6%	14.7%	13.0%	31.0%	38.7%	2.93	1.233
Domestic violence and threats from my husband resulted in our separation and this led me to substance use	5.2%	11.2%	15.5%	27.6%	40.5%	2.73	1.281
I used substances because I had periods where I was generally dissatisfied with life due to separation with my family	6.8%	12.1%	13.0%	31.9%	36.2%	2.42	1.256
There have been periods when I felt guilty due to divorce which led to substances use	7.4%	12.1%	16.4%	31.0%	33.1%	2.70	1.224
There have been times when I really got down on myself and felt worthless and this led to substance use	4.3%	8.6%	17.3%	34.5%	35.3%	2.33	1.103
Unemployment made the future seem hopeless and things could not improve this led me to substance use	6.0%	19.3%	13.8%	32.8%	37.1%	2.56	1.192
Aggregate Score						2.61	1.215

Source: (Researcher, 2022)

These findings, the means and standard deviation clearly demonstrated that depressive disorders had a relationship with substance use among women in addiction and recovery centres within Kiambu County.

Multiple Correlation analysis

Multiple correlation analysis was employed to determine the relationship between depressive disorders aspects and substance use among women in addiction recovery in Kiambu County. The depressive disorders variable was manifested by the following symptoms:

domestic violence, feeling guilty and feeling worthless. Correlation analysis was conducted at 5% significance level with 1-tailed test to determine the outcome. This meant that the significance level was a critical value set at 0.005 and above in which the association was deemed to be significant otherwise it was insignificant. The strength of the correlation was normally measured based on the Pearson correlation scale. The correlation coefficient ranges from -10 to +10 and the closer the coefficient is to +10 or the -10. The more closely are the two are related. Table 3 below depicts the results

Table 3: Multiple Correlation Analysis

		Substance use	Domestic violence	Feeling guilty	Feeling worthless
Substance use	Pearson correlation sig. (2-tailed)				
Domestic violence	Pearson correlation sig. (2-tailed)	.603 .000	1		
Feeling guilty	Pearson correlation sig. (2-tailed)	.588 .000	.623** .000	1	
Feeling worthless	Pearson correlation sig. (2-tailed)	.575 .000	.698 .000	.645** .000	1

Source: Researcher (2022)

Table 3 reveals that there was a relationship between depressive disorders symptoms (domestic violence, feeling guilty and feeling worthless) and substance use among women in addiction recovery in Kiambu County. The correlation coefficient for association between domestic violence and Substance Use was .603 with (P=.0.000); the coefficient for association between feeling guilty and substance use was 0.588 with (P=0.000); and the coefficients for association between feeling worthless and substance use was 0.575 with (P=0.000). This implies that the association between domestic violence and feeling of guilty that was likely to lead to substance use was 0.623 with (P=0.000). The correlation coefficient between feeling guilty and feeling worthless likely to lead to substance use among women in addiction recovery was 0.645 with (P=0.000). According to these

findings, it is apparent that all the depressive disorder variables (domestic violence, feeling guilty and feeling worthless) correlated with substance use. The study established strong and positive correlation coefficients which were greater than 0.50. This depicts significant relationship between the variables. Based on these correlation coefficients, there is a significant relationship between depressive disorders and substance use among women in addiction recovery in Kiambu County with domestic violence being the most significant with the highest correlation coefficient with substance use.

Discussion

The general objective of the study was to establish the influence of depressive disorders on substance use among women in addiction recovery in Kiambu County, Kenya. The study found out that the highest number of women in addiction recovery and treatment centres in Kiambu County was 45 years and below. This means majority of the women below the age of 45 years are in their child-bearing age and are more likely to be suffering from depression associated with childbirth such as prenatal, perinatal or postpartum depression. Additionally, majority of individuals below 45 years are in their youthful stage and are more likely to experience depressive risk factors and stressors including unemployment, financial challenges and domestic violence. This concurs with the study by Close (2020) which revealed that nearly 16% of women who suffer major depressive disorder in their reproductive age show postpartum depressive symptoms after giving birth. The study also found out that majority of women in addiction and recovery Centres in Kiambu County were once married couples who later on divorced, separated or widowed. Women in these marital statuses are likely to have low life satisfaction hence at high risk of depressive disorders and ultimately substance use. This concurs with the study by Granti, et al. (2016) in the United States of America, which found out that major depressive disorders and Drug Use Disorder (DUD) was estimated to be 95% among younger and unmarried individuals. According to the study findings, more than 60% of women in addiction and recovery centres in Kiambu County had between one and two children an indication that idleness was as a result of poor parenthood. Most women in addiction and recovery centres had not attained university level of education. Manual labour category had the highest number of respondents, an indication that life's challenges can lead to women getting depressive issues (2018). Arpa (2017), reported that women who are depressed, tend to experience a feeling of guilt, excessive sleeping, overeating, visiting friends, and engaging in house chores substance use to overcome depression.

The specific objective of the study was to establish the relationship between depressive disorders and substance use among women in addiction recovery in Kiambu County. Generally, the research findings revealed that majority of the respondents' related depressive disorders with drug use among women in addiction recovery in Kiambu County with a mean of 2.61 and standard

deviation of 1.215. The study identified domestic violence, feeling guilty and feeling worthless as depressive disorders associated with substance use. According to the study findings domestic violence had a mean (M) of 2.73 and a standard deviation of 1.281, Feeling guilty had a mean (M) of 2.70 and a standard deviation of 1.224 while those who felt worthless at times and indulged in substance use had a mean (M) of 2.33 and a standard deviation of 1.103. These findings, the means and standard deviation clearly demonstrate that depressive disorders had a relationship with substance use among women in addiction and recovery centres within Kiambu County. The results concur with the study by Close (2020) who found that depression had a relationship with substance abuse. The study further revealed that 33% of patients who had major depressive disorders engage in substance abuse. Correlation analysis results established strong and positive correlation coefficients which were greater than 0.50. This depicted significant relationship between the variables. Based on correlation analysis findings, there was a significant relationship between depressive disorders and substance use among women in addiction recovery in Kiambu County with domestic violence being the most significant with the highest correlation coefficient (.603) with substance use. The study corroborates with study carried out in Ghana by Bonful and Anum (2019) which revealed significance relationship between depression and substance use. The similar study also showed that the depression had been singled out as the most important cause of mental health diseases related and disability among women in their productive life in Ghana.

The key informants in addiction recovery centers including; the psychiatrist, psychologist, senior policy maker and a staff member found:

> *(The relationship between depressive disorders and substance abuse. The depressive disorders occasioned by issues such as domestic violence, emotional abuse, financial constraints as well as strained relationship resulted in substance use among the women. Challenges resulting from joblessness, unfavorable employment conditions, low income, cases of divorce and financial challenges were found to be the cause depressive disorders which led women indulge in substance use. Additionally, distressing events and life experience such as marriage challenges, childbearing responsibilities as well as society expectation for women caused depressive disorder resulting to substance abuse).*

The results corresponded with the study by Gberie (2017) who found that individuals with depression illness results from distorted thoughts and judgments that result due to lack of sufficient coping skills on stressful

and traumatic experiences such as abuses, marriage and financial challenges.

Results from the focus group discussions indicated that domestic violence occasioned by poverty and joblessness contributed to their depressive disorders that later made them indulge in substance use. Feeling worthless and feeling guilty particularly after walking away from their marriage and the pressure from their families to reconcile with their husband further pushed them to substance use due to depression. This concurs with the study by Wekesah and Kigongo (2019) who found that depression illness among many women in Kenya were as a result of socioeconomic and financial challenges, lack of sufficient coping skills as well as traumatic life experiences.

Conclusion and recommendation

Based on study results, it is apparent that there is relationship between depressive disorder symptoms and substance use among women in addiction recovery in Kiambu County, Kenya. The study identified symptoms of depressive disorders including domestic violence, feeling guilty and feeling worthless that were associated with substance use. The correlation analysis findings, established significant relationship between domestic violence and substance use. Domestic violence depicted highest positive correlation coefficient of (.603) with substance use.

The study recommends that the national and the county governments' need to ensure that: family disputes are minimized by creating public awareness and intensifying campaigns against domestic violence; there is reduction of rehabilitation cost to enable more women to be treated to become more employable. The two levels of government should ensure that good policy is put in place that minimizes issues of depression. This would help avoiding depression that resulted from joblessness, low income, and financial challenges. The recovery centres should come up with programmes that are effective when dealing with depressive disorders. The recovery centers should engage competent and experienced psychiatrist and psychologist in mental health in order to deliver their services effectively and professionally. The National government in collaboration with the County government of Kiambu need to reinforce more existing laws and policies intended to bring down the number of women under substance use.

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The Role of Conformity to Masculinity Norms on Alcohol Use among Male Teachers in Public Secondary Schools in Murang'a County, Kenya.

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Abstract

Alcohol addiction is a problem that continues to affect the global population. Being male has been reported as higher risk to alcohol consumption compared to being female. This has been linked to many male related factors with limited studies done on the role of conformity to masculinity on alcohol consumption. Alcohol abuse is considerably rampant among teachers and has impacted negatively on teaching and learning especially in public schools where productivity of teachers is extremely low, giving rise to a worrying trend. This study sought to establish the relationship between conformity to masculinity norms and alcohol abuse among male teachers in Murang'a County, Kenya. The study adopted the correlational research design targeting 2642 male teachers employed by teacher service commission in secondary schools in Murang'a County with a sample size of 422 participants. The quantitative data was collected using standardized masculine behaviour scale (MBS) and alcohol use disorders identification test (AUDIT) self-administered questionnaires. The study found statistically significant correlation between conformity to masculinity norms and alcohol use disorders on all the domains of the Masculine Behavior Scale. This study may be significant to rehabilitation centers in developing and implementing men-centered interventions for treatment and control of alcohol consumption among patients.

Key Words: *Masculinity Norms, Alcohol Consumption, Teachers, Addiction*

Introduction

The World Health Organization (WHO, 2018) reports a rise in substance consumption in many countries accounting for about 4.5% of the global disease burden and 3.8% of all deaths worldwide. For instance, in 2012, approximately 1,700 deaths among the youths were attributed to substance use disorders in the United Kingdom out of which over 70% of the casualties were male (UNODC, 2018).

In United Kingdom, UNODC (2018) report estimates that about six million people drink above the recommended daily guidelines. Studies report mood fluctuation among al-

cohol users which is attributed to many cases of domestic violence (Owusu & Agbemafle, 2016). Miles et al. (2014), have reported male-dominant gender roles among alcohol users with the outcome being gender transformative behavior. Other studies report that alcohol drinking behavior of the husband is a risk factor of gender based violence (Shrestha, 2016). Viellas et al. (2013) found that in Brazil alcohol consumption by husbands was a risk factor for gender based violence towards women. In Ethiopia women have been reported to experience physical aggression as a result of their husbands drinking behavior (Gebrezgi et al. (2017).

Vaughan, Wong & Middendorf (2014) links endorsement of some masculine norms to the consumption of alcoholic drinks among men. Other studies link learning male culturally and socially accepted codes of conduct to alcohol use (Nascimento & Bebercomohomem, 2016).

According to Iwamoto et al., 2014 masculinity may play an important role in drug abuse among men. According to Thompson & Bennett (2015), masculinity defines the societal expectations of what it means to be a man. The Theory of Reasoned Action posits that people develop certain beliefs as to whether or not certain behaviors are acceptable (Fishbein & Ajzen, 1975). These beliefs shape one's perception of the behavior and determine one's intention to perform or not perform the behavior (Kim, Lee, & Yoon, 2015).

Heber (2017) posits that males are to a higher extend both perpetrators of violence in the society. This is because notions of masculinity, and what it means to be a man, seem to be the driving factor behind much of the risky behavior that males engage in. In many studies, young men have identified violence as an important way to display power and to prove their masculinity in their communities. Hoffmeester (2017), reports normalization of toxic masculinity among the South African population linking it to gender-based violence.

According to American Psychological Association (APA), 2018) diverse social identities among men contribute to how they experience and perform their male roles, which in turn contribute to their relationship, psychological and health outcomes. The APA acknowledges that across the world men hold privilege to power, but also have mental health challenges, substance abuse, imprisonment and earlier mortality.

A critical analysis of theoretical models presents conforming to masculine norms as both risk and protective factor in alcohol consumption (Levant &Richmond, 2007). Primacy of work has been viewed as protective factor for alcohol use as those who endorse this norm fear that it may affect their work performance (Iwamoto, 2010). Young et al., (2005) has also linked masculine norms of risk taking and to increased alcohol consumption as they may reflect the ability to withstand

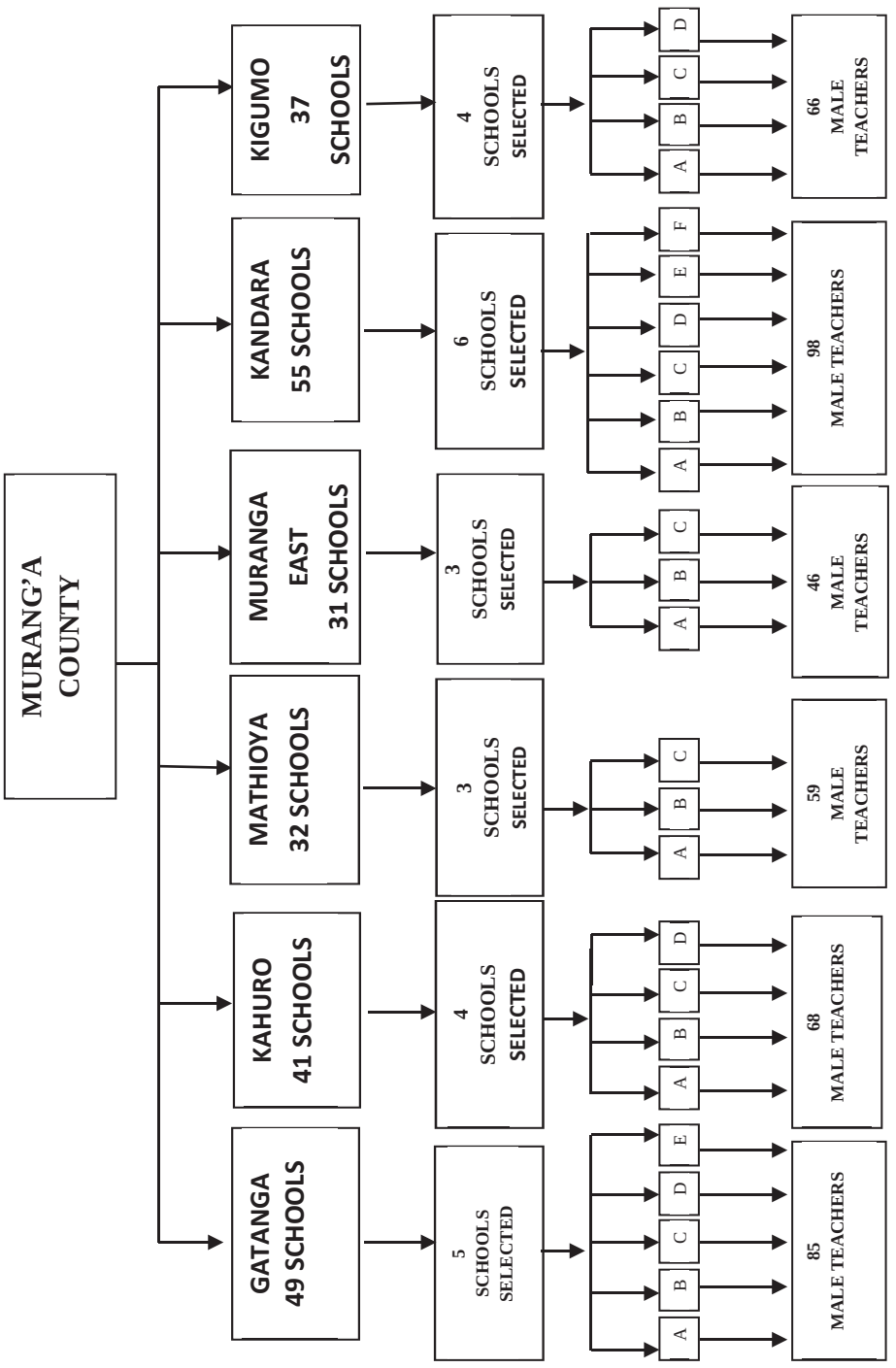
Wells et al. (2014), postulated that for young adult male college and university students, masculinity is an important factor related to both alcohol abuse and negative drinking consequences. They suggested that address-

ing male norms about masculinity may help to reduce alcohol abuse and negative drinking consequences. This study therefore sought to examine conformity to masculinity norms and its relationship with alcohol consumption among male teachers. This was to address the gap in many studies on addiction which seem to focus on students resulting to inadequate data on drug use among teachers.

Methodology

This study adopted the correlation research design to examine associations between variables. The study was conducted in Murang'a County which was purposively selected since alcohol abuse has been an area of major concern due to its far reaching impact on the individuals, families and the community (Kariuki & Oteyo, 2013).

Multistage random sampling was applied in this study. Simple random sampling method was used to select 6 out of the 8 sub counties in Murang'a County. Simple random sampling method was used to select the required number of secondary schools in each sub county. Male teachers in each of the sampled secondary schools was selected proportionately through simple random sampling. The sample size for the study was 422 male teachers which included those who use alcohol and those who did not. The sample size was determined using Krejcie and Morgan (1970) formula $S = X^2NP\ (1\text{-}P) / d^2\ (N\text{-}1) + X^2P(1\text{-}P)$


MURANG'A COUNTY
GATANGA 49 SCHOOLS
KAHURO 41 SCHOOLS
MATHIOYA 32 SCHOOLS
MURANGA EAST 31 SCHOOLS
KANDARA 55 SCHOOLS
KIGUMO 37 SCHOOLS
5 SCHOOLS SELECTED
4 SCHOOLS SELECTED
3 SCHOOLS SELECTED
3 SCHOOLS SELECTED
6 SCHOOLS SELECTED
4 SCHOOLS SELECTED
A B C D E
A B C D
A B C
A B C
A B C D E F
A B C D
85 MALE TEACHERS
68 MALE TEACHERS
59 MALE TEACHERS
46 MALE TEACHERS
98 MALE TEACHERS
66 MALE TEACHERS

Research Instruments

The study used standardized questionnaires (Masculine Behaviour Scale and Alcohol Use Disorders Identification Test) to collect data

Masculine Behavior Scale (MBS) Instrument

This is a 20 item self-report instrument measuring the extent to which people engage in behaviors that are stereotypically attributed to males (Snell, 2013). Four behavioral tendencies including restrictive emotionality, inhibited affection, success obsession and exaggerated self-reliance were assessed. Participants were asked how much they agree or disagree with various statements on the scale.

The Alcohol Use Disorders Identification Test (AUDIT)

The Alcohol Use Disorders Identification Test (AUDIT) is a 10-item screening tool developed by the World Health Organization (WHO) to assess alcohol consumption, drinking behaviors, and alcohol-related problems a self-report version of the AUDIT has 10 questions (Babor et al., 2001). The AUDIT has been validated across genders and in a wide range of racial/ethnic groups and is well suited for use, (Saunders et al., 1993).

Ethical Considerations

The researcher ensured anonymity of the participants in order to adhere to confidentiality. Participants' names and identity were not captured on the study instruments. Due to the emotional nature of the study, a Counseling Psychologist was contracted to accompany the research team in the field during data collection in order to debrief any participant who would be in need of such services as a result of participating in the study.

Data Analysis

Data was analyzed using Statistical Package for Social Sciences (SPSS). Pearson correlation analysis was used to test the association between variables. Sociodemographic data was analyzed using descriptive analysis.

Results

The results focused on sociodemographic variables, conformity to masculinity norms and alcohol use.

Demographic Information

The study considered the age of the participants crucial since it was necessary to ascertain the level of maturity of male teachers. From the findings, 39.3% of the participants fell between the ages 30-39 years, 28.7% between ages 20-29years while 10.9% were aged between 50- 60 years. The level of academic qualifications was sought because it was expected to create both intellectual and social status change which in turn could have some effect on alcohol consumption and conformity to masculinity. The findings indicate that 66.8% had attained a bachelor's degree followed by diploma at 20.1%. The number of the male teachers who had master's degree constituted 12.1% while the PhD comprised of 0.7% of the sample.

Alcohol Use Prevalence in the Sample

The findings indicated that 45.5% of the participants were non users of alcohol, 7.1% were harmful users while 47.4% presented with severe alcohol use disorder. This implies high alcohol use prevalence in the population under study.

Success obsession Norm and Alcohol Use

The study sought to examine the association between success obsession norm and alcohol use. The results are presented in Table 1.

Table 1:

Correlation between Success Obsession and Alcohol Use

		Success Obsession	Alcohol Use Severity
Success Obsession	Pearson Correlation	1	-.288**
	Sig. (2-tailed)		.000
	N	422	421
Alcohol Use Severity	Pearson Correlation	-.288**	1
	Sig. (2-tailed)	.000	
	N	422	422

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

Results indicate that the alcohol use severity had a negative correlation with success obsession ($p<.001$, $r = -.288$). This means that as the success obsession increases, alcohol severity use level decreases.

Restrictive Emotionality Norm and Alcohol Use

The study sought to examine the association between restrictive emotionality norm and alcohol use. The results are presented in Table 4.

Table 2:

Correlation between Restrictive Emotionality and Alcohol Use

		Restrictive Emotionality	Alcohol Use Severity
Restrictive Emotionality	Pearson Correlation	1	-.336**
	Sig. (2-tailed)		.000
	N	422	421
Alcohol Use Severity	Pearson Correlation	-.336**	1
	Sig. (2-tailed)	.000	
	N	422	422

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

The findings indicate that the alcohol use severity was negatively correlated with restrictive Emotionality ($p<.01$, $r = -.336$). This means that an increase in restrictive emotionality would lead to a decrease in alcohol use severity levels. Restrictive emotionality implies that one doesn't talk to others about their emotions which would inhibit self-disclose.

Inhibited Affection Norm and Alcohol Use

The study sought to examine the association between restrictive emotionality norm and alcohol use. The results are presented in Table 3.

Table 3:

Correlation between Inhibited Affection and Alcohol Use

		Inhibited Affection	Alcohol Use Severity
Inhibited Affection	Pearson Correlation	1	-.305**
	Sig. (2-tailed)		.000
	N	422	421
Alcohol Use Severity	Pearson Correlation	-.305**	1
	Sig. (2-tailed)	.000	
	N	422	422

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

Results indicate that the alcohol use severity was negatively correlated with inhibited affection ($p<.01$, $r = -.3.05$). This means that an increase in inhibited affection would lead to a corresponding decrease in alcohol use severity level. Inhibited affection may manifest in terms of restrictive expression of emotions in intimate relationships especially in public. It implies that many of these teachers seldom tell others about their feelings of love and affection for them and do not often admit that they have emotional feelings since they tend to avoid being in really close, intimate relationships.

Exaggerated Self-reliance Norm and Alcohol Use

The study sought to examine the association between restrictive emotionality norm and alcohol use. The results are presented in Table 4.

Table 4:

Correlation between Exaggerated Self-reliance Norm and Alcohol Use

		Exaggerated Self Reliance and Control	Alcohol Use Severity
Exaggerated Self Reliance and Control	Pearson Correlation	1	-.217**
	Sig. (2-tailed)		.000
	N	422	422
Alcohol Use Severity	Pearson Correlation	-.217**	1
	Sig. (2-tailed)	.000	
	N	422	422

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

Results indicate that the alcohol use severity was negatively correlated with exaggerated self-reliance and control ($p<.01$, $r = -.217$). This means that when the exaggerated self-reliance and control measure increases, alcohol use severity levels decrease. Exaggerated self- reliance may manifest through trying to be in control of everything in life. This would imply that it is a source of sustaining power and self-efficacy which would be associated with the patriarchal nature of the Kenyan society.

Discussion

The findings revealed that there was high prevalence of alcohol use among teachers in Muranga County. This is consistent with the findings of Maina (2016) that identified Murang'a County as one the counties struggling with serious problem of alcohol and substance addiction especially among men across all age groups. Leone, et al (2016) found that, when men are in the presence of male peers, the effect of social pressures discourages them from appearing weak, "un-masculine" or feminine. Men have been attributed with increased alcohol consumption to overcome societal stresses (Sacco, et al., 2014). Elsewhere, frustrations associated with work topped the list of reasons adduced for drinking (Rao, et al., 2015).

Theoretical models associate masculine norms to risk and protective actors for alcohol consumption (Levant &Richmond, 2007). This study found that conformity to masculinity norms negatively correlated with alcohol use. This implies that skewness to higher masculinity norms scores has the potential to reduce problematic alcohol use among males. However Young et al. (2005) posits that masculine norms of willingness to take risks and higher affinity to power may increase the risk of drinking because they reflect one's perceived ability to withstand high amounts of alcohol. Wells et al. (2014) postulated that for young adult male college and university students, masculinity is an important factor related to both alcohol abuse and negative drinking consequences. This is consistent with our findings which placed conformity to masculinity as an important variable that could inhibit alcohol consumption.

The issue of success obsession may lead the male teacher in two different directions. While the findings in this study show that success obsession is negatively correlated with alcohol use, other scholars have obtained contrasting results. For instance, among other masculine norms that were assessed in the study, success obsession was found to be a major driving of the need to binge-drinking to intoxication among the addicted students (Iwamoto, et al 2011; Kaya & Iwamoto, 2016). According Bushman (1997) drinking is often construed, at least according to masculine norms, seen as competitive. This highlights the crucial need to explore gender issues contributing to addiction because in the school setup, the male teachers serve as role models to their students by default. According to Darabos & Hoyt (2017) restrictive emotionality norm does not permit men to openly show their emotions,

it only allows them to express their feelings 'in a masked form' and as a result these feelings become generally unrecognised, unexpressed and misunderstood by one's self and others. The findings however are inconsistent with Vaughan, Wong & Middendorf (2014) who assert that in relation to alcohol, there is a link between the endorsement of some masculine norms, such as being aggressive, vigorous, having greater emotional control and the consumption of beverages by men. In fact, experience with alcoholic beverage is a means of learning male culturally and socially accepted codes of conduct (Nascimento & Bebercomohomem, 2016).

The exaggerated self- reliance as a means that enhance the wellness of men is also echoed by Syzdek, and Addis, (2010) who concluded that masculine role norms encouraging self-reliance among men, when endorsed in an unmitigated manner, are associated with less help-seeking and higher depression. It can however have negative consequences. Negative attitudes towards having open emotional expression have also been shown to enhance trait anxiety among men. Wong, Pituch & Rochlen (2006), contend that unlike their female counterparts, many men find it difficult identifying and expressing feelings, each of which, whether by choice or when forced by circumstances, restrictive emotionality can intensify trait anxiety among men. Brabete et al. (2013) and Sanchez-Lopez et al (2013) reliably established that conformity to self-reliance was positively correlated to consumption of alcohol and tobacco use. This can possibly be explained by the decision to show the level of independence and self-confidence by indulging in the use of alcohol and tobacco. Contrary to this finding, a research conducted among male college students illustrated that conformity to self-reliance protected them against heavy drinking for men (Iwamoto et al, 2014). These findings show a direct relationship between the increased risk of alcohol abuse and the scales for self-reliance.

The findings in this study suggest that the constant view of masculinity as a negative experience needs to be reviewed. Even though the study does not imply causality there is need to critically examine the feminist movements' philosophy implication on male identity. This paper argues that male dominated society should be fought with the aim of establishing an egalitarian society and not a female dominated society. No gender should be treated as subordinate but both should be given equal opportunities. From these findings it is important to begin addressing the rising levels of alcohol addiction among men in Kenya by reconstructing the lost identity of the man through targeted positive masculinity enhancement programs. It is important to begin empowering the boy child in order to learn to coexist with the already empowered girl child hence reducing substance use and other identity related mental health challenges.

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