PREVALENCE OF SUBSTANCE USE AND DISORDER AMONGST INPATIENTS IN KITUI COUNTY TEACHING AND REFERRAL HOSPITAL IN KENYA

DR. PRISCILLA MAKAU

DEPARTMENT OF PSYCHIATRY, UNIVERSITY OF NAIROBI

SUBMITTED IN FRACTIONAL FULFILLMENT FOR THE AWARD OF DEGREE OF MASTER OF MEDICINE (PSYCHIATRY).

MARCH 2022

DECLARATION

I declare that this research dissertation entitled **"PREVALENCE OF SUBSTANCE USE AND DISORDER AMONG INPATIENTS AT THE KITUI COUNTY TEACHING AND REFFERAL HOSPITAL IN KENYA**

Is the result of my work and that it has not been submitted either wholly or in part to this or any other university for the award of any degree. Appropriate referencing has been done when citation of other people's work has been made.

Dr. Priscilla Makau

Signed.....

Date.....7/3/2022

APPROVAL BY THE SUPERVISORS

This research dissertation is being submitted for the award of the Master of Medicine in psychiatry with our approval as the appointed supervisors

Dr Anne Mbwayo

Clinical Psychology (PHD)

Lecturer

Department of Psychiatry, University of Nairobi

Signed.....

Date....7th....Feb...2022.....

Dr Rachel Kangethe

Psychiatrist MMED (UON)

Lecturer

Department of Psychiatry, University of Nairobi

Signed.....

Date....7/3/22.....

LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
AUDIT	Alcohol Use Disorder Identification Test
DSM 5	Diagnostic and Statistical Manual of Mental Disorders 5
HCUP	Healthcare Cost and Utilization Projects
ICD9	International Classification of Diseases
ICD 10	International Classification of Diseases and Health-related Disorders version 10
KNH-UON ERC	Kenyatta National Hospital and the University of Nairobi Ethics and Research Committee
MAT	Medically Assisted Treatment
Modified ASSIST	Alcohol Smoking and Substance involvement screening test
NACADA	National Campaign Against Drug Abuse Authority
NTSA	National Transport and Safety Authority
NIAAA	National Institute for Alcohol Abuse and Alcoholism
SUD	Substance Use Disorder
SPSS	Statistical Package for the Social Sciences
TCU	Texas Christian University Drug Screen
WHO	World Health Organization

ABSTRACT

Introduction: Failure to detect the dual diagnosis of substance use disorder and medical conditions has been noted in various studies to lead to chronicity of the illness. Substance use disorder can be an underlying problem that eventually complicates the process of medical diagnosis and management leading to long hospital stays and chronicity of illness. Research is scarce regarding the screening of patients in hospitals especially inpatients for substance use, and this study aimed at filling that gap.

Background: Substance use disorder as a medical condition leads to distress and impairment (Thomas & Price, 2016). The possibility that a momentous share of patients attending general healthcare for other medical conditions also suffer from substance use disorder means that substance use and its implications must be recognized and accordingly managed.

Objectives

Broad objective: The overall objective is to establish the prevalence of substance use and disorder among inpatients at Kitui County Teaching and Referral Hospital.

Specific objectives:

1. To determine the prevalence of substance use among inpatients in the Kitui County Teaching and Referral Hospital.

2. To determine the prevalence of substance use disorder among inpatients in the Kitui County Teaching and Referral Hospital.

3. To identify the substances used by inpatients at the Kitui County Teaching and Referral Hospital.

4. To examine the associated socio-demographic characteristics of these patients.

Methodology: It was a quantitative cross-sectional study conducted among inpatients at the Kitui County Teaching and Referral Hospital. Purposive sampling was used to sample the participants. A researcher designed a sociodemographic questionnaire and modified ASSIST (Alcohol, Smoking, and

Substance Involvement Screening) was used to collect information from the respondents. The sample size was 131 respondents with 100% response rate. Relationships between the variables was determined by Pearson's Chi-square (p-value). Data from the findings was evaluated using SPSS and the results presented using charts, tables, and narratives.

Results: Out of 131 respondents, 59 (45%) reported using the substance in the past two months. Alcohol was said to be the most used substance at 42.7%. Most users had a substance use disorder at 45%

Conclusions

1. Of the 131 inpatients who participated in the study, 68 of them (51.9 %) reported lifetime substance use, and 59 (45%) of them were found to have substance use and a further 45% had substance use disorder with most of the respondents with a disorder having a moderate substance use disorder
2. Alcohol (42.7%) and tobacco (33.6%) were found to be the most used substances among the inpatients.

Recommendations

1. Almost half of the inpatients in the facility at any given time have a substance use disorder. Healthcare workers should screen for substance use and disorders as this will lead to early diagnosis and wholistic patient management

2. Further research to explain the relationship between self-employment and substance use and disorder as this finding contradicted previous study findings.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

Substance use disorder has been recently acknowledged by health organizations and practitioners globally as a mental illness (Mendenhall et al., 2018). This disease affects the brain and behavior of a person and causes the inability to control the use of illegal or legal drugs or medication (Jemberie et al., 2020). The Kenya Mental Health Policy 2015-2030 estimates that the burden of mental illness is 25% among outpatients and 40% among inpatients in different health facilities with an estimated prevalence of psychosis stated as 1% of the general population (Health, *Kenya Mental Health Policy 2015 to 2030*).

The World Health Organization indicates that individuals aged 15 years and above consumed 6.2 liters of alcohol per day in 2010 alone. This means that each person consumed 13.5 grams of alcohol (WHO 2010). The statistics approximate that over 31 million people suffer from drug use disorders (WHO, 2010). Numerous scholars have researched this Phenomenon and established that drug dependence is linked to a high rate of mortality and disease (Chesney E et al 2014). For example, compared to the general population, the mortality ratio is about 5 times higher for alcohol use disorders (Chesney E et al 2014). In the WHO 2018 Global status report on world health and alcohol, it was established that alcohol dependence results in more than 5% of the global disease burden (WHO | ATLAS 2018).

The DSM 5 or the ICD 10 diagnosing criteria diagnose patients for substance use. DSM-5 classifies these disorders as either severe, mild, or moderate, depending on the number of diagnostic criteria met (APA 2018). There are eleven DSM-5 criteria, including:

1. Abandoned key roles to use: A person does not meet their home, work, or school responsibilities due to substance use
2. Interpersonal and social issues related to using: The used substance has resulted in conflicts and problems in relationships.

3. Hazardous use: A person has used substances dangerously and risked their lives and other people's lives, i.e., drinking and driving or overdosing.
4. Tolerance: When one has developed tolerance and as such has to over-use to achieve the same effect as before.
5. Corporal or emotional difficulties associated with use: The use of a substance has led to both social, mental, and health issues.
6. Withdrawal: The feeling one has after they stop using substances.
7. Used larger amounts/longer: One has begun to use substances for longer periods and in larger amounts.
8. Plentiful time consumed using: Time spent using the substance is big.
9. Constant efforts to quit or control intake: One has attempted to quit or cut on use but has not succeeded.
10. Craving: When a person wishes they could use the substance.
11. Activities are given up to use: Someone either skips activities which they loved in the past so they can use a substance.

The diagnoses of substance use condition require that one at least meets two or more criteria in one year. If a person meets two or three of the criteria, the person has a mild substance use disorder (APA, 2018). Between four and five is ranked as moderate, and if the subject meets six or more criteria, the person has an extreme substance use disorder. The management is different depending on the severity (Warpenius et al., 2018). Mild substance use disorder is managed mainly by outpatient programs, which include brief intervention or follow-up clinical sessions (APA, 2018). Adam et al (2016) assert that moderate substance use can be managed through either outpatient or inpatient programs. Severe substance use disorder is managed through inpatient programs. Inpatient programs include short-term, e.g., the three months programs, or long-term, e.g., the 12 months programs

(Warpenius et al., 2018). Using the diagnostic criteria will help properly place the patient and initiate the correct treatment program (APA, 2018).

This study seeks to investigate the prevalence of substance use and disorder among inpatients in a general hospital who are being managed for other medical conditions. It is a perfect chance to identify inpatients with substance use conditions and intervene, leading to holistic management of the patient.

1.2 Background

Substance use disorder as a medical condition leads to distress and impairment (Thomas & Price, 2016). Other health consequences resulting from it have been established, such as gastrointestinal diseases, acute withdrawal and intoxication, soft tissue and skin infections, and injection complications such as endocarditis (Thomas & Price, 2016). The possibility that a momentous share of patients attending general healthcare for other medical conditions also suffers from substance use disorder means that substance use and its implications must be recognized and accordingly managed.

A study published in 2017 in the Journal of Hospital medicine by Englander Honora, among other scholars, depicts that there are higher re-admission and hospitalization rates, skyrocketing healthcare costs, and long length stays for individuals with substance use disorders (Englander et al., 2017). According to Englander and his fellow scholars, there is yet a tremendously imperfect model for improving care for these patients. The study performed a needs assessment report, after which the researchers convened community and academic partners to aid in designing a more informed care model for hospitalized patients that are medically complex with substance use disorder. The study concluded that between 58 and 67 percent of patients who reported substance use accepted quitting or cutting back. Further, numerous of the research participants were reported to be interested in Medically Assisted Treatment (MAT). The participants reported high re-admission costs and a longer stay in hospital times, and the desire to avoid such in the future. In this light, the researchers

recommended that hospitalization for Substance Use Disorder patients would provide teachable moments that will enable the hospitals to initiate additional care whereby medications for such addictions as alcoholism and opioid can be started promptly to promote engagement in increased MAT and inpatient Substance Use Disorder care (Englander et al., 2017). While this study seeks to engage healthcare practitioners' ineffective care of substance use disorder patients, it does not emphasize screening of patients to discover the prevalence of substance use but only relies on patients who have already exhibited signs of substance use. In this light, Patients with Substance use disorder may not receive appropriate treatment for the same because no one bothered to find out what the root cause for their problem was. Accordingly, for a better understanding of Substance use, there should be ways such as screening to establish whether a person suffers from substance use disorder even if their reason for visiting the healthcare facility is not drug-related. In this way, health practitioners can monitor, detect, and effectively assist patients with Substance use Disorder on time (Englander et al., 2017).

Ilgen et al (2012) studied the prevalence of substance use among dental school clinic patients in USA Michigan and established that more than 20 percent of patients were recently involved in challenging alcohol or illicit use of various substances. According to the study, numerous patients with the disorder exhibit oral complications. Iglen consequently recommends that there should be screening for substance use at dental clinics to flash out individuals with substance use disorder and have the appropriate assistance offered (Ilgen et al., 2012).

A different study by Ndetei et al., (2009) which sort to establish substance use prevalence among patients who visit general hospitals in Kenya, emphasized the need for screening for substance use disorder amongst inpatients for early diagnosis and intervention. According to Ndetei, most patients with SUD who visit hospitals do not get screened for the same and, as such, end up taking longer to heal, get re-admitted, and may suffer for a long since the root cause of their sickness, which is Substance use disorder, has not been discovered and dealt with. Other substances found to be

abused are tobacco, cocaine, cannabis, sedatives, and khat. The clinicians' level of awareness of the substance use disorder was found to be negligible and their identification rate nonexistent (Ndetei et al.,2009).

Findings from a study done by Choi et al. (2015) suggest that a clear comprehension of substance use and the main cause for hospitalization of patients have substantial implications for the care of patients who have the disorder and, as such, may lead to a more knowledgeable treatment and faster healing of patients. Early recognition of illnesses related to substance use disorder may motivate both the physician and the patient to address the primary substance dependency and thus ensure permanent and long-term cure. Clinicians should therefore be empowered to evaluate their patients for substance use and disorder in all facilities. The patients should, however, be specifically conscious of the association between substance dependence and their condition. The identification of substance use disorder and recommending patients to a more specific treatment plan or center would be one of the strategies that should be designed to reduce and prevent drug use morbidity and mortality (Choi. et al 2015). In this regard, hospitals could provide improved settings which may facilitate change, for instance, where patients will be required to stop smoking to receive care from the Hospital (Ariel. et al 2008)

1.3 Problem statement

Failure to detect the dual diagnosis of substance use disorder and medical conditions has been noted in various studies to lead to chronicity of the illness. As observed by Kouimtsidis et al. (2003), there is a misuse of substances coupled with the overrepresentation of substance use disorder in health settings. In some cases, substance use disorder can be an underlying problem that eventually complicates the process of medical diagnosis and management, leading to longer hospital stays and chronicity of illness (Kouimtsidis et al., 2003). Doctors were only screening a small number of patients, and treatment options were only available to the disorder's severe forms (Ndetei, 2009). Therefore, there is an urgent need to evaluate the frequency of substance use disorder on all individuals visiting a health facility. This data would help in determining what drugs are being abused and factors that relate to the abuse of drugs and plan the various interventions towards substance use disorder management in the county hospital.

Most patients in Kenya aren't specifically conscious of the relationship between the use of different substances and their current condition. The identification of substance disorders and signing up patients for better treatment and care would be one of the strategies that should be designed to reduce and prevent drug use morbidity and mortality in a health facility (Choi. et al 2015). This study, therefore, sought to stress the importance of basic screening of substance use disorder as part of history taking by the medical practitioners in Kitui County Teaching and Referral Hospital to establish a possibility of a substance use and disorder, and hospitals could provide improved settings which may facilitate change in the patients and the management of their condition as they get to care for their medical condition. There is currently no data on this matter among inpatients in the Kitui County Teaching and Referral Hospital, and this study aimed at filling this gap for holistic management of patients.

CHAPTER 2: LITERATURE REVIEW

2.1 Empirical Review

2.1.1 Prevalence of Substance Use Disorder in the World

The Phenomenon of substance use disorder has been classified as being one of the leading preventable morbidity, and mortality causes that also has considerable costs to society. Being a global pandemic, substance use steered numerous studies and researches, all of which were conducted to further comprehend the matter to either mitigate the effects, prevent further implications of the disorder or reduce it through new strategies, procedures, and policies.

Ahmed et al., et al (2020) assert that approximately 5.7 million adults will be dependent on a substance by 2020 and that substance abuse comes with non-adherence to a therapeutic treatment. The result of this is a high rate of re-admission that will normally utilize a lot of the hospital's resources since the patients refused to follow simple instructions on drug use for healing purposes (Ahmed et al., 2020). This extent of occurrence makes it important to identify substance use among patients to manage their conditions, as delays in their healing may impact their lives differently (Ahmed et al., 2020)

Choi ., et al 2015 studied medical diagnoses related to substance dependence in a hospital in the USA. To a larger extent, the main reason for admission of either heroin or alcohol-dependent patients was mental and digestive. Consequently, alcohol and heroin-dependent patients depicted a mean of 10 years younger than inpatients with other issues. Findings from this study suggest that analyzing the substance use phenomenon and the main reason for hospitalization of patients has significant consequences for patients who have substance use disorder and, as such, may lead to a more knowledgeable treatment and faster healing of patients. Early recognition of illnesses that are related to substance abuse may motivate both the physician and the patient to address the primary substance dependency and thus ensure permanent and long-term cure (Choi. et al 2015). Clinicians

should therefore be empowered to evaluate their patients for substance use in all facilities. Nevertheless, the patients should be specifically conscious of the relationship between their condition and substance use. The identification of substance disorder and recommending a more specific treatment center would be one of the approaches that should be designed to reduce and prevent drug use morbidity and mortality (Choi. et al 2015).

An article published in the Journal of Hospital Medicine in 2008 to establish concurrent substance use among patients in the hospital and their willingness to change concluded that a larger percentage of patients with substance use disorder are willing to change and quit using (KatZ et al 2008). The study was a cross-sectional survey of patients in two public hospitals in the non-intensive care unit. The study found that smoking prevalence amongst those who were substance users such as alcohol was higher than 50 percent. As such, the prevalence appeared higher for patients with drug dependence. Additionally, the focus on substance use among patients is significant for numerous other reasons. For instance, patients who users would never acquire health care from principal care physicians, and many of them with drug dependence issues refuse to enroll in any programs of treatment even after being hospitalized. In this regard, hospitals could provide improved settings that may facilitate change, for instance, where patients will be required to stop smoking to receive care from the Hospital (KatZ., et al 2008).

Since drug and alcohol use was more frequent among smokers admitted to the hospital, it is rather sad that very little to no medical trials have been carried out to inform strategies for intervention (Kavanagh et al 2004). Available trials that make up the root for intercession amongst smokers in the hospital either haven't encompassed openly patients that have reported substance use or were underpowered to carry out sub-group population analysis. Hospitals could provide improved settings that may facilitate change, for instance, patients will be required to stop smoking to receive care from the Hospital (KatZ., et al 2008).

2.1.2 Prevalence of Substance Use Disorder in Africa

Recent years in the African continent have been characterized by a major increase in substance use disorder (Mbwambo et al., 2012). Various studies have attempted to shed light on this matter with the intention to reduce and prevent the problem from spreading further. A study by Abdu et al (2019) published in the African Journal of Drug and Alcohol Studies, which was conducted in the North-Eastern part of Nigeria to establish the frequency of substance use disorder of female patients in a Hospital within five years, suggested that substance abuse was rampant among female patients as were the case with male patients. The outcomes from this study point towards the global healthcare system adapting and designing culturally apposite education programs and strategies that will ensure patients visiting hospitals are screened for substance use or interviewed in regards to substance use (Abdu et al., 2019)

A study completed in January 2017 by some students from Jimma University in Ethiopia to evaluate the intensity of substance use and other linked issues in pregnant women who seek antenatal care in facilities around Jimma town in South West Ethiopia suggested that many women seeking care from the medical facility were drug dependent and as such, if adequate studies were carried out to establish evidence of the same, then long-term solutions to the underlying substance use issues would be found (Fekadu, 2017). The study declared that the Factors Associated with substance use disorder were, among other things, the history of the family regarding substance use, the environment of the individual, and the financial status of the women, which is a sad fact since substance abuse for a pregnant woman directly affects the child in the womb and may cause long-lasting health issues for the newborn. The results from the study indicated a worrying rate of substance use among pregnant women, which was resultant from various underlying factors. In this light, the healthcare system should design strategies to reduce substance use not only among pregnant women but also the whole population (Ahmed, 2020).

2.1.3 Prevalence of Substance Use Disorder in Kenya

Ndetei et al (2009) researched the frequency of substance use among patients in general hospitals in Kenya. Results from the research exhibited an overall high intake of alcohol among the patients. This meant that, while they may have been hospitalized for different reasons, it may take them longer to heal or get cured, or they may yet return to the hospital soon with another issue because the underlying substance use issue has not been discovered. The clinicians' level of awareness of the substance use disorder and identification rate was evidently very low. These findings emphasized the necessity for screening substance use disorder amongst inpatients for early diagnosis and interventions.

Research presented by Othieno et al (2000) aimed at guesstimating the pattern and incidence of substance use amongst patients who attended various urban and rural health centers in Kenya. Results from the study concluded that the most used substances ranked as khat, cannabis, alcohol, and tobacco; among these, the most extensively abused drugs were alcohol and tobacco, and there were generational existence rates of alcohol used for the two town centers. Be that as it may, there were more males than females who reported substance use. Substance dependence rate appeared higher in tobacco and alcohol. The research emphasized the need for preventive measures and education in hospitals to create awareness of substance use and a more robust method to ensure the patients who visit hospitals get checked for substance dependence and, in this way, foster more individualized care for patients (Othieno et al., 2000).

A 2018 report by the National Protocol for Treatment of Substance Use Disorders in Kenya (2019) shows that approximately 4.9 million Kenyans in the 15-65 years age bracket abuse alcohol and at least one other drug or substance. The country's National Campaign Against Drug Abuse Authority (NACADA) made several reports in 2017 regarding the issue of drug abuse and its prevalence in the country. Some of the notable figures aired by this body include the high

concentration of drug use in the nation's urban areas such as Nairobi, Kisumu, and towns in the Eastern parts of Kenya where Kitui county is situated. NACADA ranked alcohol use as the biggest problem associated with substance use disorders (NACADA, 2017). The authority indicated that approximately 1.1 million Kenyans between ages 15-65 years were using khat while 2.2 million people in the same age bracket were using tobacco in 2017. Some illicit brands are referred to as" busaa" and "chang'aa." NACADA includes them in the list of alcoholic substances that elevate the alcoholism problem in the country (Nyassy & Ndurya 2009)9 leading to injuries on the road to drunk driving, which leads to speeding and low awareness level on Road Safety coupled with intentional flagging of road signs and rules. In a statistic issued by the NTSA, the number of road accident injuries and deaths resulting from drunk driving was increasingly higher than any other cause between September 2018 and September 2019. The injuries that result in Hospital admission are only treated as injuries and not screened for substance abuse (National Transport and Safety Authority [NTSA], 2020).

2.2 Causes of Drug Abuse

Several models seek to explain how individuals use drugs for non-medical purposes. These models present several pathways in which individuals acquire substance use disorder. People may wander from one model to another, but the distinct understanding of these models aids in comprehending substance abuse prevalence and prevention. This research will explore the Pro-drug Socialization Model and, in this context, provide a better understanding of substance use disorder.

2.3 Interaction Model

This theory assumes that drug use behavior is brought about by various patterns of both intraindividual and extra individual forces. As the realms of influences interact, they modify each other to determine the absence or presence of diverse lifestyle behaviors, including drug and alcohol abuse. The theory denotes a strong relationship between the individual, the environment where the

drug use occurs, and the drug itself. Additionally, the model takes that drunken behavior varies from one chapter to another in an addict regardless of the number of drugs or alcohol taken. Since the model relates a person's expectation, mood, properties of the drug itself, and drug use setting, intoxication may change within moments. In this light, the model considers both the experience of drug use and the drug itself as threats in trying to understand drug use disorder.

The model can be described as an epidemiological model that attempts to reduce or prevent a social problem or specific illness by establishing the risk indicators in a particular population. It emphasizes the public's general health by using the host, the agent, and the environment as threats to public health. In this matter, the host is the person, the agent is the drug, and the environment is the supportive factor that promotes the use of drugs. Interventions for this model may target any of the three factors and still improve public health. For instance, a strategy to prevent addiction may target the host (person) and, in this way, teach the youth skills for refusing to take drugs. Accordingly, the skills will reduce the vulnerability of the youth to drug addiction.

2.4 Intervention Methods for Substance Use Disorder

The treatment of substance use disorder begins with detoxification which sometimes occurs before admission. Residential treatment programs should conduct a comprehensive psychosocial evaluation of individual patients entering the treatment program to determine the extent of their needs and consider their suitability for the available intervention methods. The therapist can thereby launch a plan for treatment that matches the needs of the patient. Patients with greater physical or mental problems may require a setting that has appropriate psychiatric or medical care. Kimuyu (2017) examines the evaluation process, citing the possibility of phone-based assessments. In these assessments, the staff becomes familiar with the prospective patient, and in this step, they develop a therapeutic alliance. The initial meeting also helps in persuading the prospective patients to decide to

enter the program. Therefore, the hospital and staff should adopt a welcoming and accepting attitude that helps influence this decision.

After gaining the patient's consent, the patient should be involved in a discussion by the referring agency and with the medical practitioner, especially if they are receiving medication for the treatment of mental or physical illnesses. The World Health Organization (WHO) Alcohol, Smoking and Substance involvement screening test (ASSIST) is a questionnaire that is used to screen for substance use in adults. It has eight questions that cover various drugs such as alcohol, cannabis, hallucinogens, sedatives, amphetamine, and other drugs. It encompasses a risk score for every substance being measured. There is a rank for each score which is eventually grouped as either moderate, high, or low risk, and this is what will determine the level of recommended interventions. The ASSIST takes approximately 10 minutes to be administered. A practitioner should establish the family origin, dependent children, and intimate relations. Kellerman & Rakel, (2018) also emphasize the importance of data regarding family life, such as relationships with friends, the network of peers, negative and positive influences, and the people who are likely to support a person's long-term sobriety. Other important issues include general health, current health concerns, sensory, cognitive, and physical disabilities. The practitioner should investigate the mental health issues such as trauma history, emotional, physical, and sexual abuse, violence, suicide risks, and the current interpersonal and psychological functioning. Also essential are the details regarding work and education, including school and work history, legal and illegal income, and vocational training level and needs.

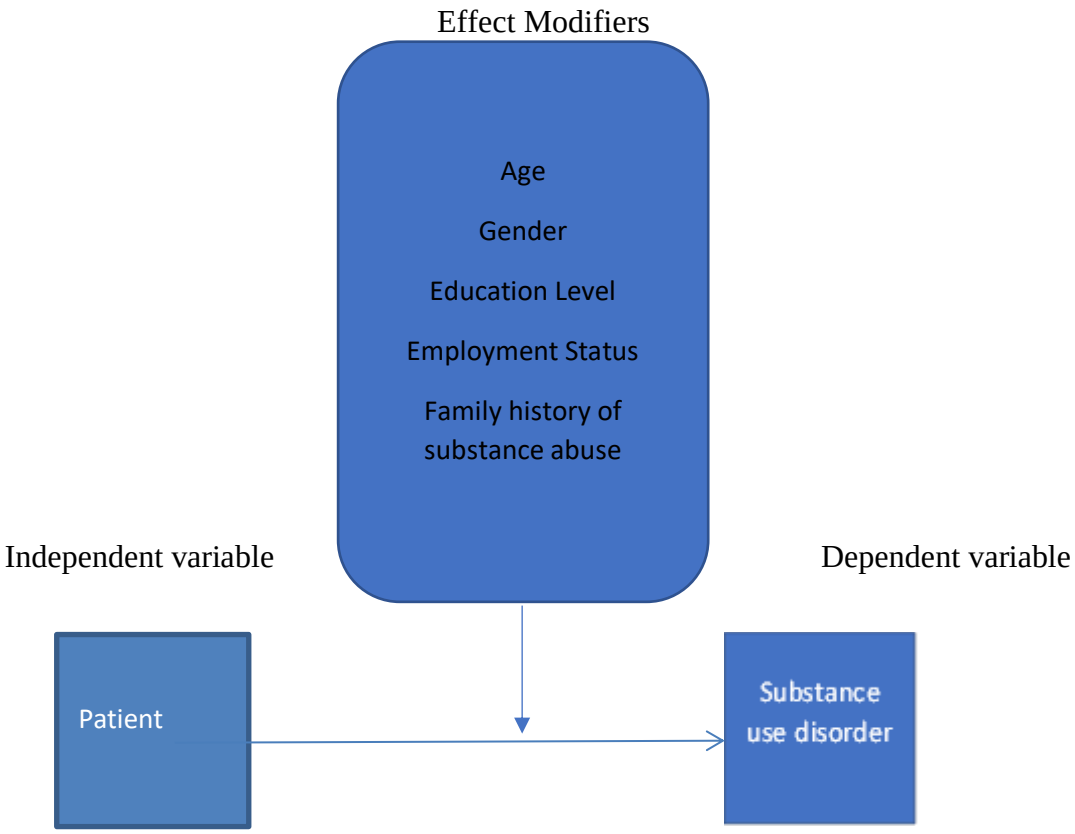
Kellerman & Rakel (2018) explain that a person should be transparent regarding legal problems such as criminal involvement and all links to illicit drugs. Finally, a person should reveal hobbies and leisure activities. Long-term inpatient treatment is unique since the patient is observed for extended periods, creating an opportunity to observe them over extended periods and perform a thorough evaluation. Extended observation is also essential since it allows for evaluation after the initial stage of abstinence from drugs. This observation ensures the evaluation of the effects of

intoxication and withdrawal. The patient understands the nature of the treatment and can consent to it fully. When patients live with peers and staff, they can be examined for temperamental, and personality qualities which are useful in helping the individualization of the treatment and ensuring others develop skills in managing relationships after they are discharged. Imkome (2018) emphasizes that every program must have a written intake policy to ensure that the admission process is voluntary and free from all forms of discrimination. All incoming residents should use a written intake and orientation procedure. During the intake process, the new patients should receive information in a written form regarding the objectives, methods, and rules of the treatment program

1.5 Conceptual framework

There is a direct link between outcome and exposure variables, which is depicted as a casual relation. Between the confounders and exposure, there is an arrow that designated that the determinant for outcome variables will be the confounder variables' current status; although similarly, the outcome may be brought about by confounders. An arrow between exposure and effect modifier denotes that outcome variables severity (substance use disorder) depended largely on the education level, employment status, family history of substance abuse disorder, and age of the respondent. Accordingly, the effect of exposure variables in data analysis will be demonstrated by controlling so that the indicator variables would be predicted by confounders. Accordingly, the outcome in the study could be caused by confounders since the confounder variables identified depict that both outcome variables and exposure are related.

Figure 1. Conceptual Framework



I hypothesized a direct link between a patient at the general ward and substance use disorder. Therefore, a patient receiving treatment in the general ward is the independent variable is assumed to be having or not having a substance use disorder which is the dependent variable.

Similarly, the age, gender, education level, employment status, family history of drug abuse disorder are effect modifiers and affect the patient and their probability of substance use disorder. In this regard, the magnitude of substance use disorder will differ depending on the education level. Similarly, the patient's family history of substance use disorder will differentiate the rate of substance use disorder for patients who have family members with substance use disorder and those who don't. In essence, the increase or decrease of the prevalence rate will depend on effect modifiers.

1.6 Study question

Therefore, this research sought to answer the question: What is the prevalence of substance use and disorder amongst inpatients at the Kitui County Teaching and Referral Hospital? This information is essential in raising awareness regarding presence of harmful use ,early recognition, the effects of a substance use disorder, and prevention methods in the target population.

2.7 Study Objectives

2.7.1 Broad objective

The overall objective is to establish the prevalence of substance use and disorder among inpatients at Kitui County Teaching and Referral Hospital.

2.7.2 Specific objectives:

1. To determine the prevalence of substance use among inpatients in the Kitui County Teaching and Referral Hospital.

2. To determine the prevalence of substance use disorder among inpatients in the Kitui County Teaching and Referral Hospital.

3. To identify the substances used by inpatients at the Kitui County Teaching and Referral Hospital.

4. To examine the associated socio-demographic characteristics of these patients.

2.8 Study justification

Globally, the statistics approximate that over 31 million people suffer from drug use disorders (WHO, 2019). There are a high mortality rate and disease linked to behavioral or mental disorders, particularly substance dependence disorder (WHO, 2018). For example, the mortality ratio, compared to the general population, is about five times higher for alcohol use disorders (Chesney. et al 2014). The WHO 2018 Global status report on health and alcohol established that alcohol causes more than 5% of the global disease burden. The mortality ratio attributed to alcohol was 1 in 20 deaths, and more than 75% of the deaths were in men (WHO, 2019). According to Ndetei et al (2009), 25.5% of inpatients have a substance use disorder. They also found out that the clinician's pick-up rate for alcohol use disorder is poor at 0.1%. This hinders the creation of holistic patient management as the hospital management does not engage the patient in solving their substance use issues. As Ahmed K. et al 2020 dictate, a holistic approach to managing patients in any healthcare setting will go a long way to enable practitioners to better understand their patients, solve a long-term issues, and facilitate faster recovery of patients with complications.

Moreover, insights from an article published in the Journal of Health and Religion in February 2016 by Jean Deborah points out that providing healthcare services encompasses recognizing both physical ailments and awareness of psychological conditions, functional status, cultural and environmental needs to facilitate a faster recovery and earlier interventions for the case of substance abuse (Jean 2016). The World Health Organization approximates that women are better at abstaining from substance use disorder than men as most patients diagnosed with substance use disorder are men (WHO, 2018). This pattern is also evident in our setting as Ndetei et al (2009) found that more male inpatients were dependent on drugs than female patients, with a prevalence rate of alcohol use to be 42.8% compared to females at 13.2%. In this light, early illness recognition resulting from a holistic approach to management will help the patient, with the help of the physical address the primary cause

of their problem, which in this case will be substance dependency, and consequently guarantee a long-term solution.

2.9 Study significance

This study undertook to show the comorbidity of SUD among inpatients with other medical conditions. The study urged medical practitioners to appreciate the importance of screening all inpatients for substance use and disorders for the holistic management of the patient.

This study also aimed to help the Ministry of Health- Kitui County to develop appropriate treatment strategies in the region. Moreover, the body of knowledge on the prevalence of substance use disorder among inpatients will benefit from the findings. Further studies can determine the causal relationship between medical diagnosis and substance use disorder.

CHAPTER THREE: METHODOLOGY

3.1 Study Design

A cross-sectional descriptive design was used in this study. Study participants were selected depending on a series of variables relevant to the study. The researcher looked at different characteristics such as age, income, length of drug usage, and prevalence of substance use disorder symptoms. Data derived from this cross-sectional study is relevant in the current trends regarding the health statuses, needs, and prevalence of substance use disorder in the Kitui County Teaching and Referral hospital and the country.

3.2 Study Area Description

This study was conducted in Kitui County Teaching and Referral Hospital, located in one of Kenya's rural counties. The Kitui County geographically sits on the country's Eastern Province. The capital of the county is Kitui town which is also the largest town. Another populous town in the county is Mwingi which relies on the Kitui County Teaching and Referral Hospital since the hospital became accredited for sophisticated services and medical procedures. As per the 2019 national census, the county has 1 136,187 people. Kitui County Teaching and Referral Hospital is the major hospital in the county and also receives patients from neighboring counties such as Meru and Tharaka-Nithi in the north, Machakos and Makueni in the west, Embu in the northwest, Taita-Taveta in the south, and Tana River in the east as well as the southeast. The hospital has a consistent flow of patients and is a level 5 facility. This elevation to level 5 was essential in increasing the inflow of patients as it opened the hospital to become accredited by medical insurance firms. The June 20th, 2019 certificate of accreditation was essential in directing a wide variety of assistance, resources, and expansion plans to the hospital under Rule 5 of the Kenya Medical Practitioners and Dentist Rules.

3.3 Study Population

The study intended to find out the prevalence of substance use and disorder among patients who have been admitted to the facility due to medical conditions. The intended population comprised 200 respondents who were inpatients hospitalized for different reasons in the general wards in Kitui County Teaching and Referral Hospital in Kenya. As per the Standard Operating Procedures of the hospital, patients in the general wards must be medically stable and those who are being admitted in the acute unit of the ward are stabilized within 48 hours of admission.

Inclusion criteria:

● Inpatients above 18years of age,

● Admitted to the hospital for more than 48 hours for a medical, surgical, or orthopedic condition,

● Gave consent for the research tool to be administered

Exclusion criteria:

● Inpatients above 18yrs admitted for orthopedic, surgical or medical reasons but are above 65 years.

● Inpatients who have been admitted for more than 48 hrs. but are acutely ill.

● Admitted to the hospital for more than 48 hours for reasons other than orthopedic, surgical or medical reasons.

3.4 Sample Size

The hospital had an average inpatient number of 100 per month, making the inpatient size during the study period to be an average of 200. Considering the exclusion criteria that were extreme age, critically ill, or lack of consent, the eligible patients were sampled with a target of 131 as calculated below.

3.5 Determination of Sample Size

The sample size was arrived at using the below formulae (Fisher 2002)

$$n = \frac{Z^2 Pq}{d^2}$$

Z – The value for corresponding confidence level (1.96 for 95% confidence)

d -The margin of error accepted in the study (i.e., 0.05 = - or +5%)

p – The estimated value for proportions of the sample that had the condition of interest in this study p was 0.5%

q = (1-p) standardized – 1.0-p =0.5

$$n = \frac{1.962 \times 0.5 \times 0.5}{0.052}$$

= 384

Meanwhile, the target population was less than 10, 000 and as such, the following formulae were used in adjusting the sample size:

$$nf = \frac{n}{1 + (n/N)}$$

Where

calculated sample size,

is desired sample size when the population is less than 10,000.

384

Total population

In this matter:

N = Total Population (200)

N = Calculated sample size = 384

nf = 384

1+ (384/200)

nf = 1+1.92

nf = 384/2.92

nf = 131

= 131 (Sample size)

3.6 Sampling Procedure

This study used purposive sampling since this kind of sampling procedure allowed the researcher to access a specific subset of individuals and select several them who fit the profile under review. In this matter, the researcher reviewed files in the wards and selected those that fit the inclusion criteria, after which I interviewed them.

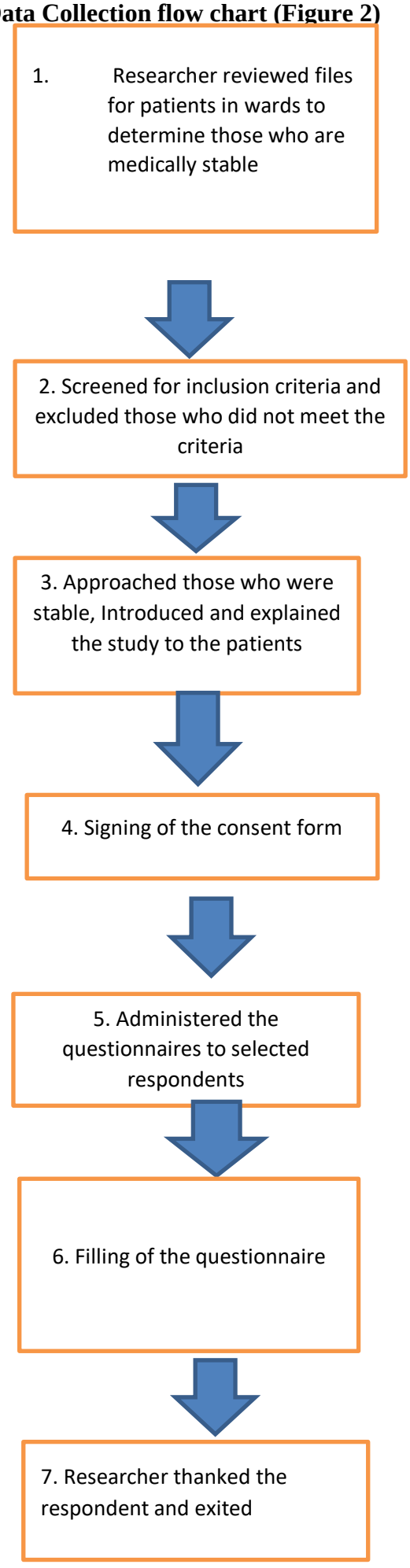
3.7 Recruitment Procedure

As my tools were researcher-administered questionnaires, I selected participants who met the study criteria, then approached those who were stable and explained the study to them, why it was being undertaken, and its importance to the hospital and participant until I attained the required sample size. I realized 100% response rate.

3.8 Data Collection Procedure

For any patient who accepts to participate, I gave them the consent document to read and those who were unable to read, I read to them. I answered any question, after which I administered the consent form for signing. After, I then administered the questionnaire. Most of the participants used either English or Kiswahili, therefore there was no language barrier experienced, The main reason for using purposive sampling in this research is because this method is time and costs effective compared to other sampling methods. In this clinical study, the researcher was able to squeeze a lot of information from the data collected.

3.8.1 Recruitment and Data Collection flow chart (Figure 2)



3.9 Study Variables and Instruments

Respondents who were medically stable and consented to participate were asked to participate and fill the study questionnaires voluntarily: - modified ASSIST and answer a researcher-designed socio-demographic questionnaire. The dependent variable was SUD, where the use and severity of each substance were measured by the modified ASSIST. The effect modifiers were educational level, marital status, employment status, environmental and cultural factors.

The researcher designed a socio-demographic questionnaire containing questions on age, gender, marital status, educational level, and employment status and modified The Alcohol, Smoking, and Substance Involvement Screening Test – ASSIST. The ASSIST was developed by WHO to be used in primary health care settings to identify people who are using substances. It has excellent reliability with a Cronbach alpha of more than 0.80 (Humeniuk, Ali, & WHO, 2006). In Kenya, it has been used by Kuria et al., (2012) in Kangemi.

The current version gave severity in line with DSM 4 criteria of substance-related disorders, which mainly gave severity as mild, moderate, and severe corresponding to DSM 4 criteria of the use, harmful use, or dependence, respectively. For DSM 5, it is assumed that mild risk is related to the mild disorder, the moderate risk to moderate disorder, and severe risk to severe disorder (Rockville MD, SAMH 2016). The Modified ASSIST used in this study had three major drugs – Tobacco, Alcohol, and Miraa -and assessed use over the last two months, which was the study period

3.10 Quality Assurance Procedures

Considering the researcher is trained on human subject research ethics and the application of all research tools used in this study by supervisors, emphasis was placed on ensuring study respondents fully understood the questions being asked and questionnaires were accurately completed. The consent form was fully explained to the respondents to minimize errors in data collection. Additionally, the committee for ethics and research had been tasked with ensuring the proposal has passed the threshold for quality and ensuring the researcher understood the study question and area fully.

Data entry followed a double-entry procedure to minimize error. At the end of each interview session, the principal investigator inspected the filled questionnaire for completeness and validity of responses before storing them safely in preparation for analysis.

3.11 Data management

Data entry was done using SPSS for windows version 24 and stored in a password-protected database. The questionnaires used for data collection were locked in a cabinet with access controlled by the principal investigator. Data entered in SPSS was protected with a password to which only the principal investigator could access. Each questionnaire had a clinic code number of the participant. The sole purpose of the code will be to enable the researcher only to provide necessary intervention like referral if need be while confidentiality is ensured.

Frequency tables represented socio-demographic data. Measures of central tendencies show the distribution of data. The associations between the variables will be determined by Pearson's Chi-square (p-value)

3.12 Reliability and Validity of the Research

Reliability informs the extent to which the research results can be reproduced if repeated at a different time under the same conditions. For this research, the consistency of the feedback from the questionnaires, the Sociodemographic and the modified ASSIS, were observed across the research period to determine if they gave the desired results. I, the researcher, was the person collecting data, and as such, the same questions were asked for each participant.

Validity measures the extent to which the results from research really measure what they are intended to measure. The researcher in this context has highlighted how well the results from the study correspond to already established theories on substance use and disorder among inpatients in other parts of Kenya and the world, especially in the literature review. Also, the researcher used a standardized questionnaire which has been used by researchers in similar research, which produced reliable and valid results.

3.13 Data Analysis Tools

The nature of the substance use as the dependent variable suggests a logit model. Consequently, the SPSS (Statistical Package for the Social Sciences) software package version 24.0 for windows was used for analyzing the data since SPSS is the best choice for social and medical science fields. In this regard, once data was collected, SPSS analysis was performed to establish the proportion of patients in the ward with a substance use disorder and was presented in terms of percentage. Secondly, the Data collected was analyzed to identify the substances being used and the frequency of usage, and this information is presented in percentage form. Finally, data, once collected, was analyzed using chi-square to establish the association between the socio-demographic factors and is be presented in table form.

3.14 Ethical Consideration

Ethical approval to conduct this study is granted by Kenyatta National Hospital and University of Nairobi Ethics and Research Committee (KNH-UON ERC) and The Kitui County Teaching and Referral Hospital. The researcher also consulted with the medical superintendent to ensure high ethical standards were maintained and to generate the necessary support required for the smooth conduct of the research.

Informed written consent was requested from each patient before absorption into the study, and respondents were at liberty to opt out of the study at any time during the process without loss of any benefits. There were no monetary gains. All information obtained from respondents was regarded as strictly confidential and was used only for the study purpose. Names were not recorded, and filled questionnaires were kept in a locked cabinet with access controlled by the principal investigator. Data inputted into the computer was protected with a password that only the principal investigator could access.

The researcher is trained in psychological first aid and was willing to offer psychological first aid should the need have been necessary. Additionally, the researcher maintained strict psychological safety for preventing psychological distress and a positive attitude, good rapport between the interviewee and the data. Accordingly, the interviewer/ researcher assumed the role of a counselor within the interviews and accorded the interviewees time to express themselves however they pleased. The interviewer/ researcher understood and acknowledged the importance of the well-being of participants during the data collection process and as such, was attentive to the signals or cues by which the interviewee may indicate distress. The researcher accepted the emotional response from the interviewee so that they feel safe to reveal the information required. Where some of the test questions were judged to be offensive, I,at the point of treatment and referral, normalized the psychological effects and any emotional disturbances. The respondents' autonomy was assured.

The respondents were not compensated to participate in this research since it was academic research and the researcher is a student who is not being funded. However, I thanked them for their willingness to participate in the study and offered psychoeducation to each on the effect of substance use disorders after collecting the data.

3.15 Potential Risks of the Research

The potential risks associated with this research were either psychological or social. Psychological risks involved producing affective states like guilt, anxiety, depression, altered behavior, and loss of self-esteem resulting from the interview. Social risks included the alteration of an existing relationship between the respondent and other people, including loss of respect, embarrassment.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION

4.1 Results from the Socio-demographic questionnaire

Table 4.1.1: Participants Characteristics

The participants were categorized according to the following features: sex, age, marital status, education level, and employment status.

		Frequency (n=131)	Percent
Sex	Male	65	49.6
	Female	66	50.4
Age	≤20	4	3.1
	21-30	44	33.6
	31-40	45	34.4
	41-50	20	15.3
	51-60	9	6.9
	61-70	9	6.9
Marital status	Single	35	26.7
	Married	75	57.3
	Divorced/Separated	10	7.6
	Widowed	11	8.4
Education level	Primary	46	35.1
	Secondary	60	45.8
	Tertiary	25	19.1
Employment status	Unemployed	50	38.2
	Business	50	38.2
	Employed	20	15.3
	Student	11	8.4

The above data were analyzed as follows, outing the characteristics presented by various respondents.

a) Sex

The males were represented by a frequency of 65 (49.6%) while the females were 66 (50.4%). As such, there was almost equal representation, with females being more by one respondent

b) Age

The highest age group represented was between 31 and 40 years (34.4%). This was followed by 44 respondents aged between 21 and 30 years (33.6%) of the sample size. The lowest represented group was aged 51 to 70, with a frequency of 18 representing 13.8 percent of the sample size.

c) Marital status

Thirty-five respondents (26.7%) were single, while 75 respondents (57.3%) were married. The remaining 21 respondents were either divorced, widowed, or separated, and this was 16.0 percent of the sample size. In this regard, more respondents who were married participated in the study as compared to the single and divorced ones.

d) Education level

Participants with secondary education level had the highest percentage at 45.8% (60 respondents), followed by those with primary education with 35.1% percent (46 respondents), while tertiary education was the lowest with 19.1 percent (25 respondents)

e) Employment status

The employment status was categorized as unemployed, business, employed, or student. From the study findings, the unemployed respondents, 50(38.2%), tallied with the number of business owners 50(38.2%) while the employed respondents were 20(15.3%). The remaining 11(8.4%) were students.

Table 4.1.1b: Substance Use, Substance use disorder and socio demographic characteristics

		Frequency (n=131, %)	**Substance use**	**Substance use disorder**	**p-value**
Sex	Male	65 (49.6)	54 (79.4)	49 (83.1)	**<0.001**
	Female	66 (50.4)	14 (20.6)	10 (16.9)	
Age	≤20	4 (3.1)	2 (2.9)	2 (3.4)	0.408
	21-30	44 (33.6)	20 (29.4)	18 (30.5)	
	31-40	45 (34.4)	28 (41.2)	26 (44.1)	
	41-50	20 (15.3)	9 (13.2)	8 (13.6)	
	51-60	9 (6.9)	3 (4.4)	2 (3.4)	
	61-70	9 (6.9)	6 (8.8)	3 (5.1)	
Marital status	Single	35 (26.7)	21 (30.9)	19 (32.2)	**0.017**
	Married	75 (57.3)	35 (51.5)	30 (50.8)	
	Divorced/Separated	10 (7.6)	9 (13.2)	9 (15.3)	
	Widowed	11 (8.4)	3 (4.4)	1 (1.7)	
Education level	Primary	46 (35.1)	16 (23.5)	13 (22.0)	**0.007**
	Secondary	60 (45.8)	34 (50.0)	31 (52.5)	
	Tertiary	25 (19.1)	18 (26.5)	15 (25.4)	
Employment status	Unemployed	50 (38.2)	16 (23.5)	13 (22.0)	**<0.001**
	Self-Employed	50 (38.2)	37 (54.4)	32 (54.2)	
	Employed	20 (15.3)	12 (17.6)	11 (18.6)	
	Student	11 (8.4)	3 (4.4)	3 (5.1)	

1. Sex

From a total of 131 respondents, 65 were male, and 66 were female. 54 males had a history of substance use while 49 (83.1%) had a disorder .14 females reported having used a substance in their lives with 10 (16.9%) found to have the disorder.

2. Age

Most of the respondents were aged between 31 and 40 years (45 respondents), 28 (41.2%)of them reported substance use and 26 (44.1%) had the disorder . The least represented ages were 51-60 years and 61-70 years, with nine respondents each. The period between 51 and 60 years had the least number of reported substance use at three respondents and 3.4% of the patients with a disorder.

3. Marital Status

In this aspect, most of the participants of the study were married (75 participants), 35 of them reported substance use representing 51.5% of the respondents and a 50.8% of those with a disorder.

4. Education Level

Sixty respondents had attained secondary education as their highest form of education, 34 of them reported substance use and made up 52.5% of those with a disorder.

5. Employment Status

The results showed the self-employed category to have more respondent reporting substance use and disorder. 54.4% of the respondents had a positive history of substance use and 52.2% of those found to have a disorder were in this category.

4.2 Modified ASSIST Questionnaire

Question 1: Lifetime substance use among inpatients

I found that 68 respondents out of 131, represented by 51.9 %, reported a history of substance use in their lives. The number of respondents who reported non-use was 63, denoted by a percentage of 48.1%.

It can therefore be presumed that half of the inpatients at the hospital within any specified time have used the various substances outlined in the questionnaire in their lives.

Table 4.2.1a: Prevalence of lifetime substance use among inpatients

	Frequency	Percent
Yes	68	51.9
No	63	48.1

The pattern of lifetime substance use

Of the substances they have ever used in their lifetime, alcohol had the highest number of respondents, as 56 (42.7%) of the respondents mentioned having ever used, followed by tobacco, where 44 (33.6%) mentioned having ever used, and lastly miraa with 21 (16.0%) of them have ever used.

Table 4.2.1b: The pattern of lifetime substance use

Substance	Frequency	Percent of respondents *(n=131)*
Tobacco	44	33.6%
Alcohol	56	42.7%
Miraa	21	16.0%

Question 2: Substance use among inpatients in the past two months

The 68 patients that have ever used a substance in their lifetime were further asked if they have used any of the substances in the past two months, and the results are as shown in Table 2a.

The results indicate that 59 (86.8%) of the 68 respondents had used a substance in the past two months.

Table 4.2.2a: Prevalence of substance use among inpatients in the past 2 months

	Frequency	**Percent**
Yes	59	86.8
No	9	13.2

Table 4.2.2b: The pattern of substance use in the past two months among those with lifetime use

Of the 68 respondents who had ever used a substance in their lifetime, a sub-analysis indicates that 44 (64.7%) of them had ever used tobacco, 56 (82.4%) had ever used alcohol. In contrast, 21 (30.9%) of them had ever used miraa.

Substance	**Frequency**	**Percent of respondents** *(n=68)*
Tobacco	44	64.7%
Alcohol	56	82.4%
Miraa	21	30.9%

Question 3: Strong desire or urge to use a drug in the past two months

The 59 patients who had indicated they have used a substance in the past two months were then asked how often they had a strong desire or urge to use any of the substances in the past two months, and the results are as shown in Table 3.

In the past two months, 34 respondents had a desire to use tobacco, .27 had a daily desire to use tobacco,2 had a monthly desire, and five desired to use either once or twice within the two months. 25 respondents reported no desire to use tobacco within the two months

35 had the urge to use alcohol. Sixteen had a weekly desire, seven reported daily, and another seven reported to desire the use once or twice within the two months. Twenty-four reported no desire to use alcohol within the two months.

Eight respondents had the urge to use Miraa/Khat daily, one weekly and 1 reported the urge to use monthly. 49 respondents had no desire to use Miraa within the past two months

Table 4.3.1: Strong desire or urge to use a drug in the past two months

Substance	Never	Once or twice	Monthly	Weekly	Daily or almost daily
Tobacco	25 (42.4)	5 (8.5)	2 (3.4)		27 (45.8)
Alcohol	24 (40.7)	7 (11.9)	5 (8.5)	16 (27.1)	7 (11.9)
Miraa	49 (83.1)		1 (1.5)	1 (1.5)	8 (13.6)

Question 4: Substance use leading to health, social, legal, or financial problems

The 59 patients who had indicated they had used a drug in the past two months were further asked how often their use led to health, social, legal, or financial problems, and the results are as shown in Table 4.

Table 4.4.1: Substance use leading to health, social, legal, or financial problems

Substance	Never	Once or twice	Monthly	Weekly	Daily or almost daily
Tobacco	49 (83.1)	3 (5.1)	2 (3.4)	1 (1.7)	4 (6.8)
Alcohol	38 (64.4)	9 (15.3)	3 (5.1)	7 (11.9)	2 (3.4)
Miraa	51 (86.4)	2 (3.4)		4 (6.8)	2 (3.4)

Out of 59 respondents, 21 Alcohol users, 10 Tobacco users had experienced social, health, legal or financial problems. Additionally, only 8 Miraa users had social, legal, health, or economic issues due to intake.

Of the 10 Tobacco users who have experienced social, legal, health, or financial problems due to their substance use, four reported experiencing the problem daily, one weekly, two monthly, and three once or twice in the past two months.

Of the 21 Alcohol users who have experienced social, legal, health, or financial problems due to their substance use, two reported experiencing the problem daily,7 weekly,10 monthly, and nine once or twice in the past two months.

Of the 8 Miraa users who have experienced social, legal, health, or financial problems due to their substance use, two reported experiencing the situation daily, four weekly, none monthly, and two once or twice in the past two months.

Accordingly, alcohol is the leading cause of social, legal, health, or financial problems, with 21 respondents reporting legal, social, health, or financial issues.

Question 5: Substance use and failure to do what is typically expected of them due to substance use

The 59 patients who had indicated they have used a substance in the past two months were then asked how often they have failed to do what was normally expected of them because of their use of drugs, and the results are as shown in Table 5.

Table 4.5.1: Use leading to failure to do what is expected

Substance	Never	Once or twice	Monthly	Weekly	Daily or almost daily
Tobacco	56 (94.9)		1 (1.7)		2 (3.4)
Alcohol	51 (86.4)	3 (5.1)	2 (3.4)	3 (5.1)	
Miraa	57 (96.6)		1 (1.7)		1 (1.7)

From the results, Alcohol use was the biggest cause of failure to do what was expected by the respondents.

Question 6: Concern by a friend, relative, or anyone else about their drug use

The 68 patients who had ever used a substance in their lifetime were asked if a friend or relative or caregiver had raised concerns on their use of the various substances outlined. The results are as shown in Table 6.

Tobacco and alcohol had the highest number of respondents who received concerns regarding their substance use, with 31 (45.6%) respondents each.

Table 4.6.1: Concern from a friend, relative, or anyone else on their substance use

Substance	Never	Yes, but not in the past 2 months	Yes, in the past 2 months
Tobacco	37 (54.4)	11 (16.2)	20 (29.4)
Alcohol	37 (54.4)	10 (14.7)	21 (30.9)
Miraa	58 (85.3)	1 (1.5)	9 (13.2)

Question 7: Who had personally ever tried to cut down substance use but failed?

The 68 patients who had ever used a substance in their lifetime were asked if during the past two months they have ever tried to cut down using the substances, and the results are as shown in Table 7.

Table 4.7.1: Personally, ever tried to cut down substance use

Substance	Never	Yes, but not in the past 2 months	Yes, in the past 2 months
Tobacco	37 (54.4)	11 (16.2)	20 (29.4)
Alcohol	36 (52.9)	11 (16.2)	21 (30.9)
Miraa	60 (88.2)	3 (4.4)	6 (8.8)

Out of 68 interviewed, Alcohol and Tobacco had the highest number of respondents trying to stop, cut down or control use as 31Alcohol users and 31 Tobacco users reported trying to cut down control or stop service. 8 Miraa users had also tried to stop, cut down, or control use.

Table 4.8 Prevalence of substance use

	Frequency (n=131)	Percent
Substance use	59	45.0
Non-use	72	55.0

Table 4.9 Pattern of Prevalence of Substance use

Substance	Frequency	Percent
Tobacco	44	33.6
Alcohol	56	42.7
Miraa	21	16.0

Table 4.10 Severity assessment score

Drug	Mild	Moderate	Severe
Tobacco	29 (42.6%)	36 (52.9%)	3 (4.4%)
Alcohol	28 (41.2%)	37 (54.4%)	3 (4.4%)
Miraa	51 (75.0%)	15 (22.1%)	2 (2.9%)

Most of the participants had a moderate risk of health and other problems with their current use

Table 4.11: Prevalence of substance use disorder

	Frequency (n=131)	Percent
Substance use	59	45.0
Non-use	72	55.0

Table 4.12:Pattern of Prevalence of substance use disorder

	Frequency (n=131)	Percent
Tobacco	44	33.6
Alcohol	56	42.7
Miraa/Khat	21	16.0

4.3 **Summary of the Findings**

There was almost equal representation with females being more than one respondent, the highest represented age group was between 31 and 40 years (45 respondents and 34.4%), and the participants were mostly married (75 respondents, 57.3 percent). Additionally, the majority of respondents had attained secondary education level (60 respondents, 45.8%), and most were unemployed (56 respondents 42.7%)

More men reported using substances at 79.4% compared to women at 20.5%. Most of the respondents who reported substance use were between 31 and 40 years (41.2%). Also, more married respondents reported substance use (51.7%). Most of the participants with a positive history of substance use had attained a secondary level of education at 50 %. Additionally, 54.4 % of the self-employed business owners had used substances in the employment status category, followed by the unemployed at 23.5 %.

Finally, analysis of the results from the modified ASSIST questionnaire revealed that out of 131 respondents, 59 (45%) reported using a substance in the past two months. The prevalence of substance use disorder was also found to be 45% with most of the patients having moderate substance use disorder. Alcohol was said to be the most used substance at 42.7%, and most users who had a disorder had alcohol use disorder 42.7%

This study adds to the already existing knowledge on the prevalence of substance use and disorder among patients in hospitals. It mainly sheds more light among inpatients at the Kitui County Teaching and Referral Hospital.

CHAPTER 5: DISCUSSION

5.1 The overall objective was to establish the prevalence of substance use and disorder among inpatients at Kitui County Teaching and Referral Hospital.

Sixty-eight respondents, represented by 51.9 %, reported lifetime substance use. Therefore, it can be presumed that half of the inpatients at the hospital have used the various substances outlined in the questionnaire within any specified time. Additionally, out of 131 respondents, 59 (45%) reported Substance use within the past two months and were found to have a substance use disorder. These findings suggest the need for screening for substance use on admission as almost half of the patients in the ward have a substance use disorder.

These results echo the findings of various other studies that have found substance use to be an ignored phenomenon among patients visiting hospitals for various illnesses.

Scheibe et al., (2019) studied characteristics of substance use among inpatients admitted in four hospitals in South Africa. They found that Moderate- to high-risk substance use was an undetected, unattended comorbidity in the hospital setting. Across the hospitals, 32% of the participants had moderate- to high-risk use of at least one substance: tobacco (28%, 111/401), alcohol (10%, 40/401), cannabis (7%, 28/401), opioids (2%, 9/401) and sedatives (2%, 9/401). Compared to this study, My study recorded a higher prevalence of substance use disorder at 45%. Most patients had a moderate substance use disorder but still higher readings per substance used: Tobacco (52.9%) Alcohol (54.4%) Khat (22.1%) suggesting more substance use in our setting.

Othieno et al 2000 in their study on substance abuse in outpatients attending rural and urban health centers in Kenya, found the prevalence of substance use to be 20% with a lifetime prevalence of alcohol use to be 54% and for tobacco 38% for the rural center. Kitui was initially considered a part of rural Kenya. My study found the overall prevalence of substance use to be 45% which is a higher

finding signifying an increase is substance use . The alcohol lifetime use was 42.7% and 33.6% for Tobacco which showed a similar pattern to Othieno et al 2000.

5.2 The substances being used by inpatients at the Kitui County Teaching and Referral Hospital.

Of the substances being used, alcohol had the highest number of respondents, as 56 (42.7%) of the respondents reported use, followed by tobacco with 44 (33.6%), and lastly, miraa with 21 (16.0%).

These results are consistent with findings from a 2018 report by the National Protocol for Treatment of Substance Use Disorders in Kenya (2019), which asserts that approximately 4.9 million Kenyans in the 15-65 years age bracket abuse alcohol and at least one other drug or substance.

Alcohol use disorder which ranks 1st in our study at 42.7%, is a deadly disease that may be fatal as is reported in 2019 WHO report which estimates that 3 million deaths represented by 5.3 percent of all deaths around the globe were resultant from harmful alcohol use (WHO, 2019). Action needs to be taken to prevent the disorder and to treat it to avoid such mortalities.

Ndetei et al 2009 did a study with the aim of establishing patterns of substance abuse in patients admitted to general medical facilities in Kenya. Out of 695 respondents,25.1% were alcohol users, and 25.5% had exhibited pathological use, which bordered from harmful use to dependence. My study had higher findings with 42.7% alcohol users and 42.7% found to have Alcohol use disorder , showing the increasing trend of alcohol use among inpatients.

Alavi, S. S. et al in their study aimed to estimate the prevalence of alcohol and substance use among Iranian patients who were admitted to operating rooms of a general hospital in Tehran, discovered that alcohol was one of the most used substances among inpatients at 25.6%. The study recommended screening of patients and early interventions to prevent or stop the harmful use of drugs and other substances of abuse.

5.3 The associated socio-demographic characteristics of these patients.

In this study,54 (79.4%) out of 68 respondents reported having used a substance, and 49(83.1%) of the people who were found to have a substance use disorder were men compared to 14 females (20.6%) and 10 (16.9%) respectively.

This was a significant finding with a p-value of <0.001, implying an association between the male gender and substance use which could be attributed to socio-cultural factors that make it more acceptable for men to indulge in substance use than women.

This is in line with Othieno et al 2000 who reported an average alcohol lifetime use of 80.8% for males compared to 30.6% for females. Ndetei et al 2009 also reported more males at 69.6% than females 30.4% to be alcohol users. My study findings had a similar trend as these two studies done in Kenyan hospitals. My study was done in a rural setup, and this could explain the lower values in the females compared to the 2 Kenyan studies that were conducted in urban centers.

Alavi, S. S. et al in their study aimed to estimate the prevalence of alcohol and substance use among Iranian patients who were admitted to operating rooms of a general hospital in Tehran, reported that among 1136 patients, 105 (28.7%) men were found to be substance users compared to women at 21 (2.7%). Substance use, especially opium, alcohol, water pipe tobacco, and cigarette smoking, were found to be significantly high, particularly among male patients. They concluded that being a man was amongst the criteria to be considered when planning preventive or therapeutic substance use disorder programs.

Out of the respondents interviewed, the self-employed businesspeople category had 37 out of 50 reporting substance use. These findings were statistically significant, with a p-value of <0.001 implying an association between substance use and self-employment. These results contradict earlier

research that reported high unemployment rates among substance users and those with disorders. Mostafa Amr et al 2004 in Egypt found 51.9% of those with substance use disorder to be unemployed. They proposed that being a young, single male, and unemployed significantly increased your risk of substance use and disorder. Shaila Khana et al in the study titled structural equation model of the effect of poverty and unemployment on alcohol abuse found that alcohol use disorder is increased by 14% among those unemployed.

My findings could be attributed to the change in the socio-economic framework. In the past, young people would wait for employment after attaining various educational certificates, and this led to more unemployed youth taking substances. According to a study done by Gladys Moraa 2013 on creating employment through Boda boda transport, the Motorcycle business in the country has picked in both rural and urban centers, and most riders are seen to be young males. Also, the availability of the youth enterprise fund empowers more youth to start various businesses hence increasing the spending power among them, as is reported by RH Kemunto in her study on the impact of the youth enterprise development fund on the performance of youth-owned enterprises in Kenya. This could explain why the self-employed reported more substance use compared to the other categories of employment.

5.4 Study limitation

1. The Study was conducted in a County Teaching and Referral Hospital in rural Kenya and may not be generalized to the normal demographics in all hospitals in the country.

2. The study is limited by self-reported data. In this regard, the researcher carried out qualitative research and collected data that respondents at the hospital gave, whether it's true or not.

3. The study tool did not assess the respondent's knowledge and understanding of the harm brought about by the different substances. Future research could consider this.

5.5 Conclusion

1. Of the 131 inpatients who participated in the study, 68 of them (51.9 %) reported lifetime substance use, and 59 (45%)of them were found to have substance use and a further 45% had substance use disorder with most of the respondents with a disorder having a moderate substance use disorder

2. Alcohol (42.7%) and tobacco (33.6%) were found to be the most used substances among the inpatients.

3. The study found an association between the male gender and substance use, with 79.4% of the males reporting having used a substance compared to (20.6%) of the female gender.

4. People who were self-employed were found to use substances more (54.4%) and had the highest disorder rate (54.2%) than the other categories of employment, with 37 out of the 68 participants who used substances being in business.

5.6 Recommendations

1. Almost half of the inpatients in the facility at any given time have a substance use disorder. Healthcare workers should screen for substance use and disorders as this will lead to early diagnosis and wholistic patient management

2. Further research to explain the relationship between self-employment and substance use and disorder as this finding contradicted previous study findings.

References

Abdu, W. I., Sadique, K. P., Falmata, B.S., Anthony, A. M., Mary, O. A., Babagana, K. M., Ogualili, P. (2018) Psychoactive substance use disorders among females in northern Nigeria: Findings of a five-year descriptive survey at the Federal Neuropsychiatric Hospital, Maiduguri, African Journal of Drug and Alcohol Studies print ISSN: 1531-4065

Adam, A., Faouzi, M., Yersin, B., Bodenmann, P., Daeppen, J. B., & Bertholet, N. (2016). Women and men admitted for alcohol intoxication at an emergency department: Alcohol use disorders, substance use, and health and social status 7 years later. *Alcohol and Alcoholism*, *51*(5), 567–575. https://doi.org/10.1093/alcalc/agw035

Ahmed, K., Arnab C., Sanah, S., Jeremiah, F., & Shirshendu, S. (2020) Substance use disorders: diagnosis and management for hospitalists, Journal of Community Hospital Internal Medicine Perspectives, 10:2, 117-126, DOI: 10.1080/20009666.2020.1742495

Alavi, S. S., Mehrdad, R., & Makarem, J. (2016). Prevalence of substance abuse/alcohol consumption and their predictors among patients admitted in operating rooms of a General Educational Hospital, Tehran, Iran. *Asian Journal of Pharmaceutical Research and Health Care*, *8*(S1), 63-71.

Alcañiz, M., Guillen, M., & Santolino, M. (2018). Prevalence of drug use among drivers based on mandatory random tests in a roadside survey. *PLOS ONE*, *13*(6), e0199302. https://doi.org/10.1371/journal.pone.0199302

Amr, M., El-Gilany, A. H., El-Mogy, A., & Fathi, W. (2014). Substance abuse and dependence among patients attending an emergency hospital in eastern Nile delta, Egypt. *Journal of Psychiatry*.

Ariel, K., David, G., Jennifer, S., William, E. T., (2008) Tobacco, alcohol, and drug use among hospital patients: Concurrent use and willingness to change https://www.journalofhospitalmedicine.com/jhospmed/article/126799/tobacco-alcohol-and-drug-use-among-hospital-patients

Arif, A., & Westermeyer, J. (2012). *Manual of Drug and Alcohol Abuse: Guidelines for Teaching in Medical and Health Institutions*. Berlin, NJ: Springer Science & Business Media.

Chasnoff, I. (2012). *Drug Use in Pregnancy: Mother and Child*. Berlin, NY: Springer Science & Business Media.

Choi, H., Krantz, A., Smith, J., Trick, W. (2015) Medical Diagnoses Associated with Substance Dependance among Inpatients at a Large Urban Hospital. PLoS ONE 10(6): e0131324. https://doi.org/10.3171/journal.pone.0131324

Deurzen, E. V., & Arnold-Baker, C. (2005). *Existential Perspectives on Human Issues: A Handbook for Therapeutic Practice*. London, NJ: Macmillan International Higher Education.

Deurzen, E. V., Craig, E., Laengle, A., Schneider, K. J., Tantam, D., & Plock, S. D. (2019). *The Wiley World Handbook of Existential Therapy*. Hoboken, NJ: Wiley-Blackwell.

Fehrman, E., Egan, V., Gorban, A. N., Levesley, J., Mirkes, E. M., & Muhammad, A. K. (2019). *Personality Traits and Drug Consumption: A Story Told by Data*. Basingstoke, NY: Springer.

Ferri, F. F. (2018). *Ferri's Clinical Advisor 2019 E-Book: 5 Books in 1*. St. Louis, MO: Elsevier Health Sciences.

Fisher, G. L., & Roget, N. A. (2009). *Encyclopedia of Substance Abuse Prevention, Treatment, and Recovery*. Thousand Oaks, CA: SAGE.

Friedman, J., & Press, C. (2014). *Treating Addiction: Is Medication the Best Way to Treat Drug Abuse?* CA.

Gallagher, G. M. (2020, January 8). *People With Substance Use Disorder are Increasingly Hospitalized for Serious Infections*. ContagionLive. https://www.contagionlive.com/news/people-with-substance-use-disorder-are-increasingly-hospitalized-for-serious-infections

Global tuberculosis program. (2018). WHO | World Health Organization. https://www.who.int/teams/mental-health-and-substance-use/alcohol-drugs-and-addictive-behaviours

GMM Nyachieo - Research Journal in Organizational …, 2013 Creating Employment through Transport; The Youth and Motorcycle (bodaboda) in Kitengela, Kajiado County-Kenya

Grant JD, Vergés A, Jackson KM, et al. Age and ethnic differences in the onset, persistence and recurrence of alcohol use disorder. Addiction 2012;107(4):756-765. https://doi.org/10.1111/j.1360- 0443.2011.03721.x

Gryczynski, J., Schwartz, R. P., O'Grady, K. E., Restivo, L., Mitchell, S. G., & Jaffe, J. H. (2016). Understanding Patterns Of High-Cost Health Care Use Across Different Substance User Groups. *Health Affairs*, *35*(1), 12–19. https://doi.org/10.1377/hlthaff.2015.0618

Haerens, M. (2012). *Alcohol*. New York, NY: Greenhaven Publishing LLC.

Hanson, G. R., University of Utah Salt Lake City Utah Glen R Hanson, Venturelli, P. J., & Fleckenstein, A. E. (2014). *Drugs and Society*. Burlington, MA: Jones & Bartlett Publishers.

Hanson, G. R., Venturelli, P. J., & Fleckenstein, A. E. (2010). *Drugs and Society*. Burlington, MA: Jones & Bartlett Learning.

Health, M., (2015) (n.d.). *Kenya Mental Health Policy 2015 to 2030*. Retrieved October 11, 2020, from http://publications.universalhealth2030.org/ref/e5ab9a205fdbd7c811bb895d09e4f81c

Heydari, S. T., Izedi, S., Sarikhani, Y., Kalani, N., Akbary, A., Miri, A., Mahmoodi, M., & Akbari, M. (2015). The Prevalence of Substance Abuse and Associated Risk Factors Among University Students in the City of Jahrom, Southern Iran. *International Journal of High-Risk Behaviours and Addiction, 4(2). https://doi.org/10.5812ijhrba.4(2)20105.2238 https:/www.researchegate.net/publication/322595322*_Magnitude_of_Substance_Use_and_Associated_Factors_among_Pregnant_Women_Attending_Jimma_Town_Public_Health.

Humeniuk, A., & WHO, 2006 –validation of the Alcohol Smoking and Substance Involvement Screening Test (ASSIST) and pilot brief intervention (electronic resource): a technical report of phase 2 findings of the WHO ASSIST project \prepared by Rachel Humeniuk and Robert Ali, on behalf of the WHO ASSIST Phase 2, study group.

Ilgen, M., Edwards, P., Kleinberg, F., Bohnert, A. S., Barry, K., & Blow, F. C. (2012). The prevalence of substance use among patients at a dental school clinic in Michigan. *The Journal of the American Dental Association, 143*(8), 890-896. doi:10.14219/Jada.archive.2012.0293

Imkome, E. (2018). Nursing Care for Persons with Drug Addiction. *Drug Addiction*. doi:10.5772/intechopen.73334

Jemberie, W. B., Stewart Williams, J., Eriksson, M., Grönlund, A.-S., Ng, N., Blom Nilsson, M., Padyab, M., Priest, K. C., Sandlund, M., Snellman, F., McCarty, D., & Lundgren, L. M. (2020). Substance Use Disorders and COVID-19: Multi-Faceted Problems Which Require Multi-Pronged Solutions. *Frontiers in Psychiatry*, *11*. https://doi.org/10.3389/fpsyt.2020.00714

Joseph, K. Muguro, Minoru, S., Kojiro, M., & Waweru, N., | Ahmed, H. D. (2020) Trend analysis and fatality causes in Kenyan roads: A review of road traffic accident data between 2015 and 2020, Cogent Engineering, 7:1, DOI: 10.1080/23311916.2020.1797981

Katz, A., Goldberg, D., Smith, J., & Trick, W. E. (2008). Tobacco, alcohol, and drug use among hospital patients: concurrent use and willingness to change. *Journal of Hospital Medicine: An Official Publication of the Society of Hospital Medicine*, *3*(5), 369-375.

Kavanagh, D. J., Young, R., White, A., Saunders, J. B., Wallis, J., Shockley, N., ... & Clair, A. (2004). A brief motivational intervention for substance misuse in recent-onset psychosis. *Drug and Alcohol Review*, *23*(2), 151-155.

Kellerman, R. D., & Rakel, D. (2018). *Conn's Current Therapy in 2019*. St. Louis, MO: Elsevier Health Sciences.

Kimuyu, P. (2017). *Treating drug addiction. Ways to Improve the success rate of rehabilitation*. Munich, NY: GRIN Verlag.

Kisilu, J., Ayuya, S., Ndolo, J., & Mwavua, S. (2019). Prevalence and Patterns of Early Drug Abuse among clients attending Ngara Medically Assisted Therapy Clinic Nairobi Kena -A Retrospective Study. Journal of *Alcohol & Drug Abuse, 2 (1); 28, 34*.

Krantz, A. J., Hershow, R. C., Prachand, N., Hayden, D. M., Franklin, C., & Hryhorczuk, D. O. (2003). Heroin insufflation as a trigger for patients with life treating asthma. Chest, 123(2), 510-517

Krill, P. R., Johnson, R., & Albert, L. (2016). The Prevalence of Substance Use and Other Mental Health Concerns Among American Attorneys. *Journal of Addiction Medicine*, *10*(1), 46–52. https://doi.org/10.1097/adm.0000000000000182

Kuria, M. W., Ndetei, D. M., Obot, I. S., Khasakhala, L. I., Bagaka, B. M., Mbugua, M. N., & Kamau, J. (2012). The association between alcohol dependence and depression before and after treatment for alcohol dependence. ISRN Psychiatry.

Marta C. Canfield, MD, Craig E. Keller, BS, Lynne M. Frydrych, MS, Lisham Ashrafioun M. A., Christopher, H., M.A., Richard, D., Blondell, M.D., Monti, P. M., Colby, S. M., & Tevyaw, T. O. (2012). *Adolescents, Alcohol, and Substance Abuse: Reaching Teens through Brief Interventions*. New York, NY: Guilford Press

Mbwambo, J., McCurdy, S. A., Myers, B., Lambdin, B., Kilonzo, G. P., & Kaduri, P. (2012). Drug trafficking, use, and HIV risk: the need for comprehensive interventions. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*, *9*(3), 154-159.

Mendenhall, E., Isaiah, G., Nelson, B., Musau, A., Koon, A. D., Smith, L., Ndetei, D. (2018). Nurses' perceptions of mental healthcare in primary-care settings in Kenya. *Global Public Health, 13*(4), 442–455. https://doi.org/10.1080/17441692.2016.1207196

Mogesie Necho, Mekonnen Tsehay, Muhammed Seid, Yosef Zenebe, Asmare Belete, Habitam Gelaye & Amare Muche Prevalence and associated factors for alcohol use disorder among tuberculosis patients: a systematic review and meta-analysis study

(n.d.). National Transport and Safety Authority (2020). https://www.ntsa.go.ke/site/wp-content/uploads/2020/09/ROAD-SAFETY-POLICY-GUIDELINES-TO-SUPPORT-ROAD-SAFETY-MAINSTREAMING-IN-MDAs-JULY-FINAL-EDT-II.pdf.

National Institute on Drug Abuse. (2018). *Addiction and the Importance of Social Connections*. NIDA for Teens. https://teens.drugabuse.gov/blog/post/addiction-and-importance-social-connections.

National Institute on Drug Abuse. (2018). Drug and Substance Abuse in Kenya: A Rapid Situation Assessment. Retrieved from https://www.drugabuse.gov/international/abstracts/drug-substance-abuse-in-kenya-rapid-situation-assessment

Ndetei D M, Khasakhala, L.I, Ongecha-Awour, F.A, Kuria, M.W, Mutiso, V, and Kakonya, D.A (2009): *Prevalence of substance abuse among patients in general medical facilities in Kenya*

Nyassy. D.. and Ndurya, M. (2009,). "How Kenya's Tost generation' threatens to bring the economy to its knees: Hope returns to 'village of zombies'" Sunday Nation (Kenyan newspaper) March 4, 2009 (Society), p 4, col 1-4.

Oluwamayowa, A. R. (2016). *Peer Pressure: A Practical Guide To Handle It Successfully*. NJ: Booktango.

Ornoy A, Ergaz Z. (2010). Alcohol abuse in pregnant women: effects on the fetus and newborn mode of action and maternal treatment. Int J Environ Res Public Health. 2010;7(2):364–79.

Othieno, C., Kathuku, D., & Ndetei, D. (2000). Substance abuse in outpatients attending rural and urban health centers in Kenya. East African Medical Journal, 77(11). doi:10.4314/eamj.v77i11.46728

Pagliaro, L. A., & Pagliaro, A. M. (2011). *Handbook of Child and Adolescent Drug and Substance Abuse: Pharmacological, Developmental, and Clinical Considerations*. Hoboken, NJ: John Wiley & Sons.

Pengpid, S., Peltzer, K., Puckpinyo, A., Viripiromgool, S., Thamma-Aphiphol, K., Suthisukhon, K., ... & Kongtapan, T. (2015). Screening and concurrent brief intervention of conjoint hazardous or harmful alcohol and tobacco use in hospital out-patients in Thailand: a randomized controlled trial. *Substance Abuse Treatment, Prevention, and Policy*, *10*(1), 1-10.

Puri, P. (2019). *Drug Abuse: Problem, Management, and Prevention*. NY: Educreation Publishing.

Rehm J, Taylor B, Room R.Global burden of disease from alcohol, illicit drugs, and tobacco.Drug Alcohol Rev.2006;25:503–513.

RH Kemunto - 2014 - erepository.uonbi.ac.ke. Impact of the youth enterprise development fund on the performance of youth owned enterprises in Kenya: The case of Ruaraka Constituency, Nairobi County

Rockville MD, SAMH 2016: *Impact of the DSM-IV to DSM-5 Changes on the National Survey on Drug Use and Health*

Rose, N. D. (2015). *The Governance of Female Drug Users: Women's Experiences of Drug Policy*. Bristol, NY: Policy Press.

Scheibe, A. P., Gloeck, N. R., Shelly, S., Marcus, T. S., & Hugo, J. (2019). The prevalence and characteristics of moderate-to high-risk regulated and unregulated substance use among patients admitted to four public hospitals in Tshwane, South Africa. *South African Medical Journal*, *109*(12), 971-977.

Scheier, L. M., & Hansen, W. B. (2014). *Parenting and Teen Drug Use: The Most Recent Findings from Research, Prevention, and Treatment*. New York, NY: Oxford University Press.

ShailaKhanaRobert PMurraybGordon EBarnesc A structural equation model of the effect of poverty and unemployment on alcohol abuse

Stimmel, B. (2014). *Alcohol and Substance Abuse in Women and Children*. London, NJ: Routledge.

Stimmel, B. (2014). *Cultural and Sociological Aspects of Alcoholism and Substance Abuse*. London, NY: Routledge.

Suchman, N. E., Pajulo, M., & Mayes, L. C. (2013). *Parenting and Substance Abuse: Developmental Approaches to Intervention*. New York, NY: Oxford University Press

The American Psychiatric Association. (2018, October 1). Diagnostic and Statistical Manual of Mental Disorders (DSM–5). Retrieved October 11, 2020, from https://www.psychiatry.org/psychiatrists/practice/dsm

The National Protocol for Treatment of Substance Use Disorders in Kenya. (2019). Retrieved from https://www.afro.who.int/publications/national-protocol-treatment-substance-use-disorders-kenya

Thomas, Y. F., & Price, L. N. (2016). *Drug Use Trajectories Among Minority Youth*. Basingstoke, IL: Springer.

Torres, V. (2019). *Reaching Your Addicted Loved One: Help and Hope for Those Battling Substance Abuse*. NY: Whitaker House.

Tran, B. X., Moir, M., Latkin, C. A., Hall, B. J., Nguyen, C. T., Ha, G. H., Nguyen, N. B., Ho, C. S. H., & Ho, R. C. M. (2019). Global research mapping of substance use disorder and treatment 1971–2017: implications for priority setting. *Substance Abuse Treatment, Prevention, and Policy*, *14*(1). https://doi.org/10.1186/s13011-019-0204-7

Turner, J. (2012). *Awakening to Race: Individualism and Social Consciousness in America*. Chicago, IL: University of Chicago Press.

Vederhus, J. K., Rysstad, O., Gallefoss, F., Clausen, T., & Kristensen, Ø. (2015). Assessing alcohol use and smoking among patients admitted to the medical ward. *Tidsskrift for Den norske legeforening*.

Warpenius, K., Holmila, M. J., & Heikkilä, A. (2018). The feasibility of alcohol screening and interventions in emergency care: a comparison of primary and specialized health care settings.

Addiction Research & Theory, *26*(6), 470–477. https://doi.org/10.1080/16066359.2017.1406481

WHO. (2010). Global status report on alcohol and health. Retrieved 2011, from https://www.who.int/substance_abuse/publications/global_alcohol_report/msbgsruprofiles.pdf

WHO. (2018, September 21). Alcohol. Retrieved July, from https://www.who.int/news-room/fact-sheets/detail/alcohol

WHO. (2020, March 11). International Standards for Drug Use Prevention – Second Edition, 2018. Retrieved July 11, 2020, from https://www.who.int/substance_abuse/publications/drugs/en/

Wu, L. T., Payne, E. H., Roseman, K., Case, A., Nelson, C., & Lindblad, R. (2020). Using a health information technology survey to explore the availability of addiction treatment data in the electronic health records: A National Drug Abuse Treatment Clinical Trials Network study. *Journal of Substance Abuse Treatment*, *112*, 56-62.

APPENDICES

APPENDIX I: INFORMED CONSENT (ENGLISH VERSION)

Dear Respondent,

Name of Study: "PREVALENCE OF SUBSTANCE USE AND DISORDER AMONG INPATIENTS IN KITUI COUNTY TEACHING AND REFERRAL HOSPITAL IN KENYA."

Principal Investigator: Dr. Priscilla Makau

A. Consent explanation (To be read and questions answered in a language in which the study subject is conversant; English or Kiswahili, and those who cannot read will be thoroughly explained to).

My name is Dr. Priscilla Makau; I am a pursuing a Masters in Psychiatry at University of Nairobi. I am doing a study entitled PREVALENCE OF SUBSTANCE USE AND DISORDER AMONG INPATIENTS IN KITUI COUNTY TEACHING AND REFERRAL HOSPITAL IN KENYA as part of my degree award fulfillment. My supervisors are Dr. Anne Mbwayo and Dr. Rachel Kangethe who are all Lecturers in the Department of Psychiatry, University of Nairobi.

The aim of this study is to determine the prevalence of substance use and disorder among inpatients at the Kitui county teaching and referral hospital. This study will be conducted by me under supervision of my supervisors. This is a medical research and you are required to understand the following which apply to all in medical research.

1. Your participation is completely voluntary and you may withdraw consent at any time in the course of the interview.
2. Refusal to participate will not in any way affect your health services which you are entitled to.
3. After reading the explanation, don't hesitate to ask any questions in case you need clarifications.
4. I will assess your reasons for use of substances by using an instrument which will take about 30 minutes of your time.
5. There is no right or wrong answer.

6. No invasive procedures such as drawing blood will be involved and no risks will be posed to you except that you may experience an emotional disturbance through asking you emotional questions.
7. All information obtained from this study will remain confidential and your privacy will be upheld. Your name will only appear on the consent form which will be signed and kept separately from the study documents for legal purposes and for identification in case you will be found with psychological problems that need follow up.
8. There will be no material gain from this study. However, the overall study may be of benefit to patients seeking medical care in hospital facilities in general in terms of policy implementation and better intervention and care of substance use disorder in patients.

9. During interviews, research participants who are found to have mental or physical problem will be provided with immediate counseling and referred for treatment and follow-up services in the appropriate departments.
10. Results of the study can be availed to you upon request.

If you have any questions related to this study, or your health you can call me on my telephone number 0725616192 or my lead supervisors at the department of psychiatry, University of Nairobi or KNH/ UON Ethics and Research Committee at Kenyatta National Hospital on telephone number **2726300 Ext 44102**or P.O BOX **20723 -00202**, Nairobi.

Consent Form (English version)

I, ……the undersigned do hereby volunteer to participate in this study. The nature and purpose have been fully explained to me by Dr. Priscilla Makau.

The role I play by participating in the interviewee is to help the investigators collect information about the prevalence of substance use and disorder among inpatients in Kitui county teaching and referral hospital. This information may or may not be useful in designing better ways to improve mental wellbeing in the future. My questions, if any, have been answered to my satisfaction. The Kenyatta National Hospital Research and Ethics Board, may be contacted by research subjects to discuss their rights on P.O Box 20723-0020 Nairobi or call on telephone number 02726300 Ext 44102

Participant's Signature

_____Date_____

Signature ……

Researcher _____Date …….

Signature ……

Investigators Statement

I (Dr. Priscilla Makau) have explained to the respondent the nature and purpose of this study as described above. I have asked the respondent if there are any questions and I have answered them to the best of my knowledge and ability.

Witness Signature _____

Date_____

Appendix II: Consent form (Swahili version)

Jina langu ni Daktari Priscilla Makau, Mimi ninasomea shahada ya uzamili katika utaalamu wa akili katika Chuo Kikuu cha Nairobi. Ninafanya utafiti kuhusu "uwepo wa unywaji wa pombe, utumiaji wa bidhaa mbalimbali za tumbako na madawa mengine ya kulevya miongoni mwa wagonjwa waliolazwa katika hospitali kuu ya Kitui kama sehemu ya kutimiza kutuzwa shahada yangu. Wasimamizi wangu ni Daktari Mbwayo na Daktari Kangethe ambao wote ni wahadhiri katika Idara ya utaalamu wa akili, Chuo Kikuu cha Nairobi.

Lengo la utafiti huu ni kutathmini nambari ya wagonjwa waliolazwa katika hospitali hii walio na ugonjwa au uwepo wa unywaji wa pombe, utumiaji wa bidhaa mbalimbali za tumbako na madawa mengine ya kulevya.Utafiti huu utafanywa nami . Huu ni utafiti wa matibabu na unatakiwa kuelewa yafuatayo ambayo hutumika kwa wote katika utafiti wa matibabu.

1. Kushiriki kwako ni kwa hiari na unaweza kuondoa ruhusa wakati wowote katika kipindi cha mahojiano.

2. Kukataa kushiriki hakuathiri kwa njia yoyote huduma yako ya afya ambayo una haki.

3. Baada ya kusoma maelezo, usisite kuuliza maswali yoyote ikiwa utahitaji ufafanuzi.

4. Nitatathmini sababu zako za matumizi ya madawa ya kulevya kwa kutumia chombo ambacho kitachukua dakika 30 za muda wako.

5. Hakuna jawabu sahihi au makosa.

6. Hakuna taratibu vamizi kama vile kuvutwa damu kutakakotumika na hakuna hatari utakayosababishiwa ila kwamba unaweza pitia masumbuko ya hisia kwa njia ya kuulizwa maswali yenye hisia.

7. Maelezo yote yatakayopatikana kutoka utafiti huu yatabaki siri na faragha yako itazingatiwa. Jina lako litaonekana tu kwenye fomu ya idhini ambayo itatiwa saini na kuhifadhiwa tofauti na nyaraka za utafiti kwa madhumuni ya kisheria na kwa ajili ya kutambua iwapo utapatikana na matatizo ya kisaikolojia ambayo yanahitaji ufuatiliaji.

8. Hakutakuwa na faida yoyote ya kifedha kutokana na utafiti huu. Hata hivyo, utafiti kwa jumla unaweza kuwa wa manufaa kwa wagonjwa kwenye viuo vya marekebisho ambao wanaweza kuwa na matatizo ya msongo wa mawazo/ PTSD na kwa ujumla katika suala la utekelezaji wa sera na kuboresha huduma ya shida za matumizi ya madawa ya kulevya katika wagonjwa walio kwenye mipango ya urekebishaji.

9. Wakati wa mahojiano, washiriki wa utafiti ambao hupatikana kuwa na matatizo ya akili au kimwili watapewa ushauri mara moja na kuelekezwa kwa ajili ya matibabu na huduma ya kufuatiliwa katika idara husika.

10. Matokeo ya utafiti yanaweza tolewa kwako kwa ombi.

Kama una maswali yoyote kuhusiana na utafiti huu, au afya yako unaweza nipigia kwenye simu yangu nambari 0725616192 au viogozi wasimamizi wangu katika idara ya utaalamu wa akili, Chuo Kikuu cha Nairobi au KNH / UON Kamati ya Maadili na Utafiti katika Hospitali ya kitaifa ya Kenyatta nambari ya simu **2726300 Ext 44102** au Sanduku la posta **20723 -00202**, Nairobi.

B. FOMU YA MARIDHIANO

Mimi, ……. Ninayesaini najitolea kwa hiari yangu kushiriki katika utafiti huu. Asili na lengo lake nimeelezwa kwa kina na daktari Priscilla Makau. Jukumu langu kushiriki katika utafiti ni kusaidia watafiti kukusanya habari kuhusu unywaji wa pombe, utumiaji wa bidhaa mbalimbali za tumbako na madawa mengine ya kulevya . Habari hii yaweza kuwa ya muhimu katika kuunda njia bora za kuboresha maslahi ya akili siku za usoni.

Tume ya maadili na utafiti ya hospitali ya kitaifa ya Kenyatta, yaweza fikiwa na washiriki wa utafiti kujadili haki zao kwenye Sanduku la Posta 20723-0020 Nairobi au simu kwenye nambari 02726300 Ext 44102

Jina……. Tarehe…….

Saini……

Mtafiti …… Tarehe…….

Saini……

Mimi (Dr. Priscilla Makau) nimemuleleze mshirika lengo la utafiti huu kikamilifu kama ilivyo elezwa hapo juu. Nimeuliza mshirika iwapo kuna maswali yoyote na kuyajibu kwa kadiri ya ufahamu na uwezo wangu.

Mbele ya shahidi ……

Saini……Tarehe…….

Appendix III: Socio-demographic Questionnaire

1. Sex

Female ☐

Male ☐

2. Age

18-25 ☐

26-30 ☐

31-35 ☐

36-40 ☐

41-50 ☐

51-60 ☐

61-70 ☐

3. Marital status

☐

Single ☐

Married ☐

Divorced/Separated ☐

Widowed

4. Education Level ☐

Primary ☐

Secondary ☐

Tertiary

5. Employment status

Unemployed ☐

Business ☐

Employed ☐

Student ☐

Appendix IV: Socio-demographic questionnaire (Swahili version)

1. Jinsia

Mwanamke ☐

Mwanaume ☐

2. Umri

18-25 ☐

26-30 ☐

31-35 ☐

36-40 ☐

41-50 ☐

51-60 ☐

61-70 ☐

3. Hali ya ndoa

Pekeyako ☐

Kwenye Ndoa ☐

Talaka / mmetengana ☐

Mjane ☐

4. Kiwango cha Elimu

Msingi ☐

Shule ya upili ☐

Chuo Kikuu ☐

5. Hali ya Ajira

Ajira ☐

Biashara ☐

Kuajiriwa ☐

Mwanafunzi ☐

APPENDIX V: WHO MODIFIED ASSIST

The Alcohol, Smoking and Substance Involvement Screening and Test (ASSIST)

This set of questions comes from a short interview in regards to tobacco products, alcohol, among other drugs. These questions inquire about your substance use experience across your lifetime and within the past two months. These substances can be swallowed, inhaled, smoked, injected, taken in the form of pills, or snorted,

Maswali yafuatayo yanatokana na mahojiano mafupi kuhusu unywaji wa pombe, utumiaji wa bidhaa mbalimbali za tumbako na madawa mengine ya kulevya. Nitaanza kukuuliza maswali yanayohusiana na maono yako kuhusu utumizi wa pombe, tumbako na madawa ya kulevya katika maisha yako au kwa muda wa miezi miwili iliyopita. Pombe, tumbako na madawa ya kulevya yanaweza kutumika kwa njia zifuatavyo: Kuvuta, kumeza, kunusa, au kutumika kama tembe.

1.	**In your life have you used any of the following substances?** **Je katika maisha yako umewahi kutumia bidhaa ifuatayo?**	NO (La)	YES (Ndiyo)
a.	Tobacco products (chewing tobacco, cigarettes, Cigara, mbaaki)	0	3
b.	Beer Products (Tusker, Tuskermalt, Guinness, Senator, Whitecap)	0	3
c.	Wines (Fighter, Kenya cane (KC)	0	3
d.	Changaa'	0	3
e.	Karubu,	0	3
f.	Miraa/irungi, Khat, kangeta, /Mugoka, kuber,	0	3
g.	Other - specify:	0	3

If "No" to all items, stop the interview.

(Kama hutumii madawa haya ya kulevya basi usiendelee kuuliza maswali.)

If "Yes" to any of these items, ask Question 2 for each substance ever used.

(Kama anatumia madawa haya basi uliza swali la pili kuhusu madawa yaliyotumika.)

2.	**In the past two months, how often have you used the substances you mentioned above** **Kwa muda wa miezi miwili iliopita umetumia bidha ifuatayo mara ngapi?**	Never (Sijawahi)	Once or twice (Mara mojo au mara mbili hivi)	Monthly (Mwezi mmoja)	Weekly (Kwa wiki)	Daily or almost daily (Karibu kila siku)
a.	Tobacco products (cigarettes, chewing tobacco, Cigara, Kiraiko)	0	2	3	4	6
b.	Beer Products (Tusker, Tusker malt, Guinness, Senator, Whitecap)	0	2	3	4	6
c.	Wines (Fighter, Kenya cane (KC)	0	2	3	4	6
d.	Changaa'	0	2	3	4	6
e.	Karubu, Muratina	0	2	3	4	6
f.	Miraa/irungi, khat, kangeta, Mugoka, Kuber,	0	2	3	4	6
g.	Other - specify:	0	2	3	4	6

"Never" to all items in Question 2, skip to Question 6. If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5.

Ikiwa hujawahi kutumia madawa haya katika swali la pili, basi nenda moja kwa moja hadi swali la sita. Kama umeshawahi kutumia madawa ya kulevya katika swali la pili kwa muda wa miezi mawili basi endelea na swali la 3, 4, na 5.

3.	**During the past two months, how often have you had a strong desire or urge to use the following drugs?** **Kwa muda wa miezi miwili, ni mara ngapi ambapo umekuwa na hamu kubwa sana ya kutumia? Madawa yafuatayo**	Never (Sijawahi)	Once or twice (Mara mojo au mara mbili hivi)	Monthly (Mwezi mmoja)	Weekly (Kwa wiki)	Daily or almost daily (Karibu kila siku)
a.	Tobacco products (cigarettes, chewing tobacco, Cigara, Kiraiko	0	3	4	5	6

b.	Beer Products Tusker, Tuskermalt, Guinness, Senator, Whitecap)	0	3	4	5	6
c.	Wines (Fighter, Kenya cane (KC)	0	3	4	5	6
d.	Changaa'	0	3	4	5	6
e.	Karubu, Muratina	0	3	4	5	6
f.	Miraa/irungi, khat, kangeta, Mugoka, Kuber,	0	3	4	5	6
g.	Other - specify:	0	3	4	5	6

4.	**During the <u>past two</u>, how often has your use of (FIRST DRUG, SECOND DRUG, ETC) led to health, social, legal, or financial problems?** **Kwa muda wa miezi miwili, ni mara ngapi au ni vipi, ambavyo (Dawa ya kulevya ya fuatayo imeweza kuathiri shida au matatizo yako kuhusu afya yako, uhusiano wako na watu, hali ya kuvunja sheria na hali yako ya kifedha?**	Never (Sijawahi)	Once or twice (Mara mojo au mara mbili hivi)	Monthly (Mwezi mmoja)	Weekly (Kwa wiki)	Daily or almost daily (Karibu kila siku)
a.	Tobacco products (cigarettes, chewing tobacco, Cigara, Kiraiko	0	4	5	6	7
b.	Beer Products Tusker, Tuskermalt, Guinness, Senator, Whitecap)	0	4	5	6	7
c.	Wines (Fighter, Kenya cane (KC)	0	4	5	6	7
d.	Changaa'	0	4	5	6	7
e.	Karubu, Muratina	0	4	5	6	7

f.	Miraa/irungi, Khat, Kangeta, Mugoka, Kuber,	0	4	5	6	7
g.	Other-Specify	0	4	5	6	7

5.	**In the <u>past two months</u>, how often have you failed to do what was normally expected of you because of your use of the following drugs?** **Kwa muda wa miezi miwili, ni mara ngapi ambapo umeshindwa kufanya yale ulitakiwa kufanya kwa sababu ya kutumia MADAWA yafuatayo?**	Never (Sijawahi)	Once or twice (Mara mojo au mara mbili hivi)	Monthly (Mwezi mmoja)	Weekly (Kwa wiki)	Daily or almost daily (Karibu kila siku)
a.	Tobacco products (cigarettes, chewing tobacco, Cigara, mbaaki	0	5	6	7	8
b.	Beer Products Tusker, Tuskermalt, Guinness, Senator, Whitecap)	0	5	6	7	8
c.	Wines (Fighter, Kenya cane (KC)	0	5	6	7	8
d.	Changaa'	0	5	6	7	8
e.	Karubu,	0	5	6	7	8
f.	Miraa/irungi, khat, kangeta, mugoka, kuber,	0	5	6	7	8
g.	Others-Specify	0	5	6	7	8

Answer Questions 6 and 7 for all substances ever used (i.e., those endorsed in Question 1)

(Jibu maswali 6 na 7 ikiwa umetumia madawa yote katika Swali la 1)

6.	**Has a friend or relative or Caregiver/group members shown concern about your use?** **Je, kuna rafiki au mtu wa jamii yako au mtu mwingine yeyote ,mhudumu wako au kundi lako amabao ako na wasi wasi kuhusu utumizi wako wa bidhaa hizi ?**	No, Never (La, Sijawahi)	Yes, In the past 2 months Ndiyo, Kwa muda wa miezi miwili iliopita	Yes, but not in the past 2 months Ndiyo, lakini siyo kwa muda wa miezi miwili iliopita
a.	Tobacco products (cigarettes, chewing tobacco, Cigara, mbaaki	0	6	3
b.	Beer Products Tusker, Tusker malt, Guinness, Senator, Whitecap)	0	6	3
c.	Wines (Fighter, Kenya cane (KC)	0	6	3
d.	Changaa'	0	6	3
e.	Karubu,	0	6	3
f.	miraa/irungi, khat, kangeta, mugoka, kuber,	0	6	3
g.	Other - specify:	0	6	3
7.	**During the past 2 months Have you <u>ever</u> tried to control, cut down or stop using the drugs mentioned below** **Kwa miezi miwili iliopita umeshawahi kujaribu au kujizuia au kupunguza ama kuwacha kutumia dawa za kulevya zilizo tajwa hapa chini**	No, Never (La, Sijawahi)	Yes, In the past 2 months Ndiyo, Kwa muda wa miezi miwili iliopita	Yes, but not in the past 2 months Ndiyo, la kini siyo kwa muda wa miezi miwili iliopita
a.	Tobacco products (cigarettes, chewing tobacco, Cigara, mbaaki	0	6	3
b.	Beer Products Tusker, Tusker malt, Guinness, Senator, Whitecap)	0	6	3
c.	Wines (Fighter, Kenya cane (KC)	0	6	3
d.	Changaa'	0	6	3

e.	Karubu,	0	6	3
f.	miraa/irungi, khat, kangeta, mugoka, kuber,	0	6	3
g.	Other - specify:	0	6	3

Appendix VI

Table: Study timeline

Activity	**Timeline**
Proposal development and defense	2020
Ethical clearance	January 2021-June 2021
Data collection	July 2021-August 2021
Data analysis	September 2021
Thesis and manuscript writing and defense	February 2022

Appendix VII

Table: Budget

ITEM DESCRIPTION	COST (KSH)
1. Transport	10000
2. Running costs	16000
3. Printing of data collection forms	10000
4. Printing and binding of manuscripts and proposal	5000
5. Statistician	50000
6. Miscellaneous	5000
7. ERC Review fee	2000
8. Communication costs	3000
Total	**101000**

Appendix VII: Budget Justification

Transport: The researcher stays in Nairobi and needed to travel to Kitui several times during the research.

Running Cost: The researcher had to seek accommodation, food and other basic things while visiting Kitui.

Printing of data collection costs: The forms for conducting the interviews were printed at a cost.

Printing and Binding of manuscripts, proposal and questionnaires : The proposal was printed for ERC review, which was roughly 70 pages and the questionnaires were printed at a cost

Statistician: The person employed by the researcher to carry out data management, analyze and interpret data was paid ksh. 50,000

Miscellaneous: During the research period, unforeseen costs were catered for by the miscellaneous cost allocation.

ERC review fee: The ethics and research Committee charges a fee for reviewing proposals and projects.

Communication costs: For the success of the research, there were various email, tele-conversations among other types of communication that required data and airtime.