

**Relationship between Substance Use Disorder and Clinical Depression among Women
in Rehabilitation Centres in Nairobi County, Kenya**

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DECLARATION

I, as its author, declare that this work is an original work created by me through reading, researching and thinking and, to the best of my knowledge, has not been submitted to another university for academic credit. All resources used in this thesis are dully acknowledged.

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DEDICATION

I dedicate this work to all my family members for their effortless support during my academic journey.

ACKNOWLEDGEMENT

I give gratitude to God for His mercy during my academic endeavors. I profited from my supervisors' feedback, criticism, and support while I wrote this project. I owe Dr. Lucy Njiru and Dr Ruth Walioli, who worked diligently and patiently to offer direction, credit for the study project's accomplishment. Also, I want to convey my sincere gratitude to Tangaza University College for creating a supportive study environment. I really appreciate the support and commitment of my supervisor throughout this academic journey. I appreciate my fellow students for the encouragement and support throughout our study period.

ABSTRACT

Globally, the prevalence of clinical depression among women is higher than that of males. Kenya is the fourth country in Africa with the highest number of people suffering from depression. Among this population in Kenya, clinical depression affects more women than men. However, few local studies have explored whether clinical depression is linked to substance use disorder among women in Kenya. The aim of this study was to determine the relationship between substance disorder and clinical depression among women in rehabilitation centres in Nairobi County, Kenya. Three specific objectives guided this study: to determine the level of clinical depression in women; to examine the level of substance use disorder in women and to evaluate the relationship between clinical depression and substance use disorder among women in rehabilitation centres. This study used a descriptive research design with 12 rehabilitation centres and 217 participants. The Patient Health Questionnaire was used to assess incidences of clinical depression. The ASSIST test was used to measure substance use disorder. The findings indicated that alcohol was the most substance used by majority of the respondents followed by cannabis and tobacco. The results further indicated that there was a strong linear correlation between clinical depression and substance use disorder. In addition, results of hypothesis testing showed that the relationship between clinical depression and substance use disorder showed positive and linear significant relationship ($\beta=0.262$, T-value =1.232, $p=0.002<0.05$). The study concluded that family instability factors were a catalyst to many women in rehabilitation centers succumbing to clinical depression. It was concluded that most of the respondents had a moderate risk of health and other problems associated with current substance use. The study recommended to health experts that early identification and treatment of women under depressive symptoms may help in preventing moderate and severe depression among women in rehabilitation centres. The study further recommends that stakeholders in mental health and substance abuse, NGOs and other stakeholders should put effort in curbing, regulating and controlling the proliferation of cheap alcoholic beverages.

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ABBREVIATIONS AND ACRONYMS

ANC:	Attending Antenatal Care
ART:	Antiretroviral therapy
BDI:	Beck Depression Inventory
CES-D:	Center for Epidemiologic Studies Depression Scale
DASS:	Depression Anxiety and Stress Scale
DSM:	Diagnostic and Statistical Manual of Mental Disorders
EPDS:	Edinburgh Postnatal Depression Scale
GBD:	Global Burden of Disease
HIV:	Human Immunodeficiency Virus
MSPSS:	Multidimensional Scale of Perceived Social Support
NACADA:	National Campaign against Drug and Substance Abuse
NACOSTI:	National Commission for Science, Technology and Innovation
NGOs:	Non-Governmental Organizations
UNODC:	United Nations Office on Drugs and Crime
WHO:	World Health Organization

OPERATIONALIZATION OF CONCEPTUAL VARIABLES

Clinical Depression: Clinical depression is defined as the frequency or degree of mood/affective disorders, which is defined by feelings of sadness, diminished energy, interest, or enjoyment. Typical symptoms include diminished self-worth, remorse sentiments, and death-related thoughts. The cut point of the Patient Health Questionnaires (PHQ-9) was as follows: scores less than 5 always indicate absence of depressive disorder; scores of 5 to 9 predominantly represented patients with either no depression or sub-threshold (i.e. other) depression; scores of 10 to 14 showed a spectrum of patients; and scores of above 15 indicated major depression (Wallerblad et al., 2022).

Substance Use Disorder: A mental illness that impairs a user's mind and actions and makes it difficult for them to regulate their usage of drugs, liquor, or other narcotics, whether they are illicit or not. Long-term or chronic use of any drug to alter states of mind or body for reasons that are not medically essential has the potential to negatively impact a person's psychological or physical well-being or the wellbeing of others. Substance use disorder, in this study, was measured using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). The cut of point in this study was essentially ranked as moderate, high or low risk.

CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter presents the background of the study, the statement of the problem, objectives of the study, research questions and hypothesis, scope of the study and a summary of the chapter

1.2 Background to the Study

Clinical depression is a common mental health disorder, defined as a severe mood condition that lasts for at least two weeks and disrupts how a person thinks, feels, and manages daily tasks (Duko et al., 2018). Among the major symptoms of clinical depression are depressed mood, loss of interest, feeling of hopelessness, helplessness or worthlessness (van den Heuvel et al., 2020). Suicide, psychological suffering and a higher chance of developing medical co-morbidities are also connected to clinical depression (Secor, 2020).

The symptoms can be extremely upsetting for the patient and lead to psychological and professional disabilities, which interfere with their daily lives and hurt both the sufferer and the people caring for them (Wang et al., 2019). Clinical depression is amongst the most crucial health issues facing the society due to the social and financial consequences it places on the community. By the year 2020, clinical depression was the second most significant contributing factor in the burden of disease worldwide (World Health Organization (WHO), 2021).

Globally, World Health Organization (WHO) (2021) estimated that about 15% of people had experienced depression at some point in their life. In addition, WHO (2020) estimated 53.2 million cases of clinical depression in 2019, an increase of 27.6% from the previous year to make an overall incidences of 3152.9 cases (2722.5 to 3654.5) per 100 000 population. According to a WHO (2021) report, the United States and France have the greatest incidence

rates (19.2% and 21%, respectively), while the lowest percentages were found in Israel, Italy, Japan, and Germany among high-income nations, spanning from under seven to ten percent.

About 29.19 million people in Africa (9% of 322 million) were diagnosed with clinical depression in 2019 with lifetime prevalence of clinical depression estimated at 9.8% (Esan & Esan, 2021). Almost 7 million of them, that is 3.9% of the 322 million people, live in Nigeria. Similar to the United States, South Africa has high rates of clinical depression, with depressive symptoms present in 13.5% of males and 20.5% of females. The prevalence was likewise higher in Uganda (11,5%), while it was about 30% in Botswana, Sudan, and Zambia (Opondo et al., 2018; Stein et al., 2018; van den Heuvel, 2020). Depending on the population of focus, the prevalence of clinical depression in Ethiopia alone ranges from 11% to 38% (Duko, 2018; Bitew, 2019).

There are many ways that clinical depression has been found to seriously harm mental health, such as by increasing the likelihood of substance use disorder (Assil & Zeidan, 2019). Drug use disorders present serious global public health concerns and are linked to a variety of adverse health effects (Okoro, 2018). This is especially true in the case of drug injection, which according to WHO (2022) is among the leading causes of the Human Immunodeficiency Virus (HIV). This is supported by the Global Drug Report (2020) of the United Nations Office of Drugs and Crime (UNODC), which estimates that approximately 11 million persons worldwide use injectable pharmaceuticals. The increased risk of mortality and morbidity linked with drug addiction overdose is also significant. The non-medical use of numerous medications that are outlawed by international law is included in substance abuse.

Data from 28 European Union member states, including Turkey and Norway, revealed that in Europe, people under 35 years used amphetamines two to three times more frequently than

people over 35 years (UNODC, 2018). Yet, compared to those aged 45–54, those aged 15–24 used "ecstasy" at a rate that was over 20 times greater. In contrast, UNODC (2019) reports that lifetime cannabis usage was substantially more common in people below 35 years old in Europe compared to rates of cocaine use among those aged 15 to 24 and 45 to 54.

In Egypt, where almost 6% of secondary school pupils have attempted to engage in drugs, drug use, especially heroin use, is becoming a severe issue (Kavutha, 2020). Teenagers in Ethiopia were found to be using drugs significantly more often (Tesfaye et al., 2020). In at least sixteen nations, people aged 15 and older misused opiates with prevalence rates varying from 0.01 to 0.8%. Based on the amount spent and the number of people involved, South Africa was one of the top 10 countries in the world for alcohol and drug misuse (Christian Addiction Support, 2019). In South Africa, marijuana, cocaine, heroin, and methamphetamine were the most commonly abused substances.

Although drug use disorder is linked to poor health outcomes in both men and women, there are disparities in the prevalence and effects of problem substance use on physical health among men and women (Rabinovitz et al., 2019). Yet, women are more likely to use recommended psychoactive medicines than males, and the majority of these substances have a high potential for addiction and long-term detrimental effects on health (Deal, 2018). Moreover, women are more likely than males to develop liver cirrhosis after taking less alcohol for a shorter amount of time (Mezey et al., 2019). These findings also relate to brain atrophy and dysfunction (Lishman et al., 2017); breast cancer, (Dorgan et al., 2021) gastric ulcers (Rabinovitz et al., 2019) and alcoholic hepatitis (Mann et al., 2020). As such, although having lower rates of alcohol and illegal drug use than men, women's use has a substantial, and in some circumstances even worse, health impact.

Also, these variations can be seen in the mental health and traumatic experiences linked to substance use (Wang et al., 2019). Accordingly, up to two thirds of women who struggle with substance abuse may also be dealing with a mental health issue, such as depression, panic disorder, post-traumatic stress disorder or disordered eating behavior (Harkness et al., 2020). Women are particularly more prone to experience depression, compared to men. The use of drugs and externalizing behavioral issues like conduct, attention deficit hyperactivity and oppositional defiant disorders have been clearly linked in numerous research (Armstrong & Costello, 2022; King et al., 2020).

Yet, there is minimal evidence linking substance abuse to internalizing issues like sadness and anxiety (King et al., 2020). The risk of substance abuse is implicit in business literature, though, as chemical intoxicants can be utilized as a method of self-treatment to dull feelings of despair (Young et al., 2019). This chemical intoxication can exacerbate depressive episodes, aggravating harmful behaviors like substance abuse (Lillehoj et al., 2021). Similar to this, Fergusson et al. (2018) note that some persons may turn to substance abuse so as to address the symptoms of depression.

In Kenya, substance use disorders are a significant issue. According to NACADA report (2021), drug usage and substance use disorder have increased dramatically over the past 20 years, affecting all facets of the society. According to the report, substance use is common and disturbing because so many young people are becoming addicted to drugs every day, and even school-age children use beer, tobacco and bhang. The most affected are those between the ages of 16 and 30, a crucial developmental phase. According to NACADA (2020), the two most widely used substances overall are khat and cannabis, with people aged 25 to 35 having the greatest lifetime and recent use rates. In contrast, persons between the ages of 18 and 24 had

nearly three times the lifetime use of cocaine, heroin, and prescription drugs as those 36 years and older did (NACADA, 2020). However, it is notable that the association between clinical depression and substance use disorder is not well researched in Nairobi County, Kenya.

In Nairobi County, substance abuse is the highest yet, Nairobi County has the largest number of accredited treatment and rehabilitation centres in the country. There are 12 rehabilitation centres which are NACADA accredited in Nairobi County (NACADA, 2022). The most commonly abused substances in the county are alcohol, tobacco and khat (locally called miraa-a stimulant). However, an increased use of illicit drugs such as heroin, cocaine and methamphetamine has also been on the rise (Mwangi, 2021). The high prevalence of substance use disorder has led to a significant number of individuals in Nairobi County struggling with addiction. According to NACADA (2022), the prevalence of alcohol and drug abuse is 13.9% and 4.4% respectively.

Due to the prevailing high rate of substance use disorder in Nairobi County, there are severe and dire consequences such as increased crime rates, domestic violence, and health-related issues such as liver disease, cancer and mental health disorders. Substance use disorder pervades all genders with women constituting a significant percentage. According to the data from World Health Organization (WHO) (2021), women accounts for 30% of the total population of people seeking treatment for substance use disorder in rehabilitation centres in Nairobi County. Women are particularly vulnerable to substance abuse due to various factors such as gender-based violence, poverty, and social stigma. The most commonly abused substances among women in Nairobi County include alcohol, tobacco, and prescription drugs (Jaguga & Kwobah, 2020).

There are severe consequences of substance use disorder among women in Nairobi County such as increased risk of HIV/AIDs, clinical depression, domestic violence and mental health disorders. This has witnessed rehabilitation centres in the county implementing various programs to address these issues (Mwanyika, 2020). Some of the programs include vocational training, group therapy, counseling for the purpose of enabling the women to integrate into the society after treatment. Clinical depression is one of the major consequences associated with women who have undergone treatment in the various rehabilitation centres (Jaguga & Kwobah, 2020; Musyoka et al., 2020). However, the association between clinical depression and substance use disorder in Nairobi County has not well been documented. As such, this study sought to assess this relationship.

1.3 Statement of the Problem

Reports indicate that the prevalence of clinical depression among women is 32% globally (WHO, 2021). The WHO (2021) report indicated that the United States and France have the greatest incidence rates (19.2% and 21%, respectively), while the lowest percentages were found in Israel, Italy, Japan, and Germany. In Africa, about 29.19 million people (9% of 322 million) were diagnosed with clinical depression in 2019 with lifetime prevalence of clinical depression is estimated at 9.8% (Esan & Esan, 2021).

A recent study carried out by WHO (2020) shows that Kenya is the fourth country in Africa with the highest number of people suffering depression, with 1.9 million diagnosed cases. Among these, depression affects more women than men (WHO, 2021). At the same time, a report by WHO (2018) shows that in Kenya, women are being exposed to addictive substances, law enforcement-related harms, and the possibility of jail due to substance abuse disorder. While the report found that men aged 18 and older had over twice as much of substance addiction as adult women, the rate among youngsters aged 12 to 17 was the same for both

genders, that is, 6.9%. In general, a tenth (0.1%) of women in Kenya, representing 2.4 million women in the country and 222,438 in Nairobi County as per the 2019 national population census (KNBS, 2019; Mburu et al., 2018) are prone to substance abuse disorder.

However, few local studies have explored whether clinical depression is linked to substance use disorder among women in Kenya. Despite the fact that numerous studies have previously been conducted in relation to clinical depression (Njiru et al., 2018; Mwanyika, 2020) and substance use disorder (Mwangi, 2021; Okita, 2020), the studies either explored one of the concepts in relation to other variables (Mwanyika, 2020; Okita, 2020; Mwangi, 2021) or focused on a different population other than adult women (Mwanyika, 2020; Okita, 2020). However, these studies have not fully established association between clinical depression and substance use disorder and specifically in Nairobi County. This is the backdrop that motivated the current study to explore the relationship between clinical depression and substance use disorder in Nairobi County.

1.4 Purpose of the Study

The purpose of the study was to assess the relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County, Kenya.

1.5 Objectives of the Study

This study was guided by a general objective and specific objectives.

1.5.1 General Objective

To determine the relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County.

1.5.2 Specific Objectives

1. To establish the level of clinical depression among women in rehabilitation centres in Nairobi County.
2. To examine the level of substance use disorder among women in rehabilitation centres in Nairobi County.
3. To evaluate the relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County.

1.6 Research Questions

1. What is the level of clinical depression among women in rehabilitation centres in Nairobi County?
2. What is the level of substance use disorder among women in rehabilitation centres in Nairobi County?
3. What is the relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County?

1.7 Research Hypotheses

H₀: There is no significant relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County.

1.8 Significance of the Study

The findings are anticipated to be valuable to many stakeholders. These include the following:

1.8.1 Policymakers

This study may be beneficial to policy makers as it could provide an insight on levels of clinical depression and level of substance use disorder in women. This may help in the development of policies aimed at providing help to the affected individuals.

1.8.2 NGOs

Stakeholders like NGOs fighting against drug addiction and substance use disorders may find the data useful as it provides insight on level of substance use disorder and clinical depression among women in Nairobi County. Awareness could be created by these stakeholders to enhance on policies for addressing levels of substance use disorder among women in rehabilitation centres in Nairobi County.

1.8.3 Society

This study may prove beneficial to the society at large as care-givers, employers, parents and family members will be made to understand the relationship between substance use disorder and clinical depression. This may enable close family members to help the depression afflicted individuals cope with challenges related to levels of substance use disorder.

1.8.4 NACADA

The study may prove beneficial to NACADA as it could share light on the level of substance abuse by women in the rehabilitation centres in Kenya. NACADA may have more insight on the relationship between clinical depression and substance use disorder and create interventions and support for rehabilitation centres to deal with women patients.

1.8.5 Health Care Givers

The study may also be of importance to the therapists, psychologists, health workers and mental health providers. They could gain awareness on the relationship between clinical depression and substance use disorder and thus gain insight on modalities for tackling levels of substance abuse and clinical depression among women recovering from this addiction.

1.8.6 Research and Academicians in Field of Psychology

The research findings may be useful to academicians and scholars in the field of psychology as it could provide comprehensive insights and generate new knowledge in the field of

counselling psychology. These findings contribute to the body of knowledge on the relationship between clinical depression and substance use disorder by providing reference material to future scholars and academicians.

1.9 Scope and Delimitations

Scope of a study is the delineation of what was and was not covered in a research study. It enables the researcher to focus on usage of time and ensures goals and outcomes are attained as planned (Kumar, 2011). The study was limited to 12 rehabilitation centres in Nairobi County and was conducted over a period of one (1) month. A sample of respondents was drawn from 12 rehabilitation centres which are NACADA accredited facilities located within Nairobi County, Kenya. The respondents used were women aged from 16-70 years.

Delimitation of a study refers to the boundaries set in a research study that enable the researcher to narrow down the study making it more manageable and relevant (Creswell, 2013). Measurement of clinical depression was delimited to feelings of sadness, diminished energy, diminished self-worth, remorse sentiments and death-related thoughts. Measurement of substance use disorder was, on the other hand, delimited to Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) tool and measured using questions examining the severity of drug use disorder.

1.10. Assumptions of the Study

1. The study assumed that the research would be conducted on the basis of the willingness of the sample participants to participate in the research.
2. The study assumed that there would be a correlation of clinical depression and substance abuse disorder among women in rehabilitation centres.
3. The participants would give honest answers to the items of the questionnaire and enough data would be obtained to meet the purpose of the research.

1.11. Summary of Chapter

This chapter has described the background of the study, and the statement of the problem. This chapter has also presented the objectives of the study, the research questions, the assumptions and the significance of this study detailing the beneficiaries who may benefit from the findings of this study. The next chapter presents a literature review.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents a critical analysis of empirical research, conceptual framework and theoretical foundations of this study. Based on a theoretical analysis, this section explores the analysis of the relationship between clinical depression and substance use disorder among women in Nairobi County, Kenya. The empirical literature, on the other hand, delves into the critical analysis of related researches that have been done in this field. The conceptual framework then provides a descriptive picture of the relationship between the variables used in this study.

2.2 Conceptualization of Constructs

This section explores the concepts underlying this study, including clinical depression and substance use disorder. These variables are hereby conceptualized and discussed in relation to the women in rehabilitation centres.

2.2.1 Clinical Depression

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines depression, otherwise known as major depressive disorder or clinical depression, as a common and serious mood disorder (Wallerblad et al., 2022). Individuals suffering from depression experience persistent feelings of sadness and hopelessness (Charlson et al., 2020). They also suffer from loss of interest in various activities that they once enjoyed. Aside from the emotional problems, individuals may present symptoms such as digestive issues or chronic pain. For one to be diagnosed with depression, symptoms must be present for a minimum of two weeks.

Spitzer, Williams, Kroenke, and colleagues created the Patient Health Questionnaire-9 (PHQ-9) in 2001, with nine questions (Osborn et al., 2020). Scoring is based on the total number of

boxes on the PHQ-9 questionnaire (not at all = 0, many days = 1, more than half of the days = 2, nearly every day = 3). To interpret the total score, depression Severity levels are as follows: (1) minimal depression (1-4), (2) mild depression (5-9), (3) moderate depression (10-14), (4) moderately severe depression (15-19), and (5) severe depression (20-27). The 9-item PHQ-9 was found to be diagnostically valid in investigations involving 8 primary care and 7 obstetrical clinics (Mwangi et al., 2020).

In South Africa, PHQ-9 was shown to be useful for determining severity and is ideal for clinical and research application. The tool was used in depression screening in a high HIV load and low literacy PHC group in Johannesburg, South Africa. The findings shed light on how we might screen for and prioritize commonly ignored and extremely frequent depression symptoms in low-resource PHC settings in Sub-Saharan Africa.

PHQ-9 has also been used in studies to detect depressed symptoms across various Kenyan groups. Osborn et al. (2020) study of depression and anxiety symptoms, social support, and demographic characteristics among Kenyan high school students found significant levels of depressive symptoms (45.9% over the clinical limit). Another study done in Kenya among HIV-positive teenagers attending Kenyatta National Hospital in 2019 found that one in every two adolescents had depression symptoms on the PHQ-9 scale (Mwangi et al., 2020).

2.2.2 Substance Use Disorder

According to Diagnostic and Statistical Manual of Mental Disorder (DSM-5), substance use disorder (SUD) is a treatable mental disorder that affects an individual's brain and behaviour (Stenbacka et al., 2020). The effects of SUD lead to considerable inability of an individual to control their use of substances such as legal and illegal drugs, alcohol and even medications (Rice & Dolgin, 2018).

The World Health Organization (WHO) developed the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) to screen substance use in adults. It is comprised of eight questions that cover various drugs like alcohol, cannabis, hallucinogens, sedatives, amphetamine and other related drugs. It has a risk score for each of the substances that is being measured. The scores are ranked as moderate, high or low risk to determine the level of the recommended interventions. The ASSIST tool takes approximately 10 minutes to administer. WHO created the ASSIST to be used in primary health care settings to detect individuals who use drugs. It is highly reliable, having a Cronbach alpha of higher than 0.80 (Humeniuk, Ali, & WHO, 2006; Kuria et al., 2012).

In determining drug and substance use disorder, Kellerman and Rakel (2018) highlight the importance of family life data, such as friendships, peer networks, negative and positive influences, and those who are likely to support a person's long-term sobriety. Other critical considerations include overall health, current health concerns, sensory, cognitive, and physical limitations. The practitioner should look at mental health issues such trauma history, emotional, physical, and sexual abuse, violence, suicide risk, and present interpersonal and psychological function. Employment and education facts are also required, including school and employment history, legal and illegal income and occupational training level and needs.

2.3 Empirical Literature Review

This section presents literature review pertinent to assessing the association between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County, Kenya. More particularly, it reviews literature relevant to prevalence of clinical depression among women in rehabilitation centres, level of substance use disorder among women in rehabilitation centres and the association between clinical depression and substance use disorder among women in rehabilitation centres.

2.3.1 Level of Clinical Depression among Women

In rural Thiruvananthapuram, India, Lijin (2020) investigated the predictors of level of clinical depression and substance use disorder among women. The PHQ-9 was used and those who passed the test were either classed as depressed or not, using a cut-off score of ten. The findings revealed that depression had a prevalence of 24.9 percent. Women over the age of 30 years had odds of screening positive for depression that were more than twice as high. Women with education beyond the primary level had odds that were half as high; women with gynaecological morbidity had odds that were almost three times as high; women who had experienced partner violence in the previous month had odds that were almost twice as high; and women whose partners used drugs had odds that were more than twice as high. However, the study did not establish linkages between depression and substance use as is of the case in this present study.

In order to identify the factors that predispose women, in Karachi- Pakistan, to clinical depression and substance use disorder, Vimla (2017) used a quantitative and cross-sectional study. As a framework, the Transactional Model of Stress and Coping was applied. Additionally, 234 women were selected in a purposive convenience sample from the outpatient clinics of a tertiary care hospital in Karachi. The study found that women with clinical depression had tendency to engage in substance use that was significantly harmful to their health when compared to women without clinical depression. In addition, unemployed women or those with low-paying jobs had a higher prevalence to clinical depression compared with those in stable employment. Finally, the results indicated that women with many children had a higher predisposition to clinical depression compared to those with small families. The study was in Pakistan and focused only on women that may have peculiar attributes. This current

study included all women regardless of other factors to establish a relationship between substance use and clinical depression.

Wegbom et al. (2023) attempted to determine the levels of clinical depression and substance use disorder among expectant mothers in Port Harcourt, Nigeria, as well as the causes of these conditions. Two tertiary hospitals undertook a facility-based cross-sectional survey utilizing the DASS-21. The study included 413 respondents, of whom 9.5% reported having at least moderate depression. Marital status, educational attainment, and work position, all had a strong correlation with depression. The findings established significant association between clinical depression and substance use disorder among expectant mothers. The results further indicated that separated and divorced women have higher prevalence to clinical depression. The study however also focused on pregnant women who may have predisposed conditions in comparison to the general population among women, and therefore the findings may not be generalizable to the present context.

Similarly, Abebe et al. (2022) conducted a cross-sectional survey study in Ethiopia to ascertain the link between levels of clinical depression and substance use disorder among expectant HIV-positive mothers. A convenient sample of participants came from 12 healthcare facilities. The findings established that clinical depression was twice as likely to affect expectant mothers with substance use disorder and who had poor incomes compared to women with more advanced cancer. The findings further revealed that expectant mothers with lower education levels had a higher predisposition to clinical depression. The study however also focused on HIV-positive pregnant women who may have predisposed conditions in comparison to the general population among women leaving the number of women who did not have HIV who have been exposed to depression. Thus, this study left out other women that suffer from depression making it a significant research gap.

Masila (2019) investigated levels of clinical depression and post-traumatic stress disorder in clinical settings in and around Nairobi, Kenya. This study was a cross-sectional study with a sample size of 222 hospitalized patients using the Beck Depression Inventory (BDI-II), DSM-5 Post Traumatic Stress Disorder Checklist (PCL-5). The results showed that 34.2 percent of women with big families had PTSD and clinical depression, compared to those with small families. In addition, PTSD rates and clinical depression were higher in unemployed women or those with unstable jobs. The study however is a comparative analysis of level of clinical depression, substance use disorder and post-traumatic stress disorder among women and men.

Most of the studies reviewed above focused on depression and not the most severe form of depression which is clinical depression. Other studies have linked level of clinical depression with other factors that might be related or that might contribute to clinical depression like substance use disorder where other studies have only focused on one or two substances and not a variety of substances use. This study examined the levels of clinical depression and the relation it has with substance use disorder.

2.3.2 Levels of Substance Use Disorder among Women in Rehabilitation Centres

Meyer et al. (2019) in Montreal, Canada, assessed the levels of substance use disorder and clinical depression among women. The findings showed that in order to treat clinical depression among women afflicted by drug use disorder problems, contextual confounders related to initiation to substance abuse must be addressed. The study revealed a partial relationship between substance use disorder among women and health and social problems among users. The study however did not fully show how substance use might contribute to clinical depression, hence presenting a gap in Kenya that the current research sought to fill.

In a study in Pakistan, Ghazal (2019) researched on rising levels of substance abuse disorder among patients admitted in rehabilitation centres. The focus of the study was to investigate the socio-demographic variables common in patients with substance use disorder addiction for the purpose of identifying vulnerable cohorts and risk factors. The design adopted was multiple cross sectional survey and a sample size of 103 participants. Data was gathered using a structured questionnaire. The results showed that patients were initiated into substance use disorder in the teenage years. Heroin was the most abused drug followed by cannabis with most of the male patients registering a mean duration of substance abuse disorder of 1-5 years. The initiation to substance abuse disorder was mostly triggered by family disputes and peer pressure that led to a significant population of patients suffering from clinical depression. The context of the study was in Pakistan, a country with different socio-economic context from Kenya. The study was based on male patients which is also a contextual gap as the current study is focusing on women in rehabilitation centres.

In South Africa, Tshitangano and Tosin (2016) studied the levels of substance use disorder among secondary school students in terms of prevalence and possible contributing factors. This was a quantitative study that adopted descriptive research design. Self-administered questionnaires were used for data collection with a sample size of 338 randomly selected secondary school-going learners aged 14-18 years. Results established that for the majority of the respondents (63%), the initiation age for commencement of substance use was 15-20 years of age with male learners being more affected. The results showed that rural secondary school learners in South Africa had low prevalence of substance use disorder compared to urban school learners. In addition, alcohol was the most abused substance that led to the respondents failing to participate in school activities. The contextual gap is that the study was in South Africa among secondary school learners- the country has cultural variations from Kenya and

also that the study failed to link substance use disorder and clinical depression. This current study sought to link substance use disorder and clinical depression.

Maimuna (2019) examined levels of substance use disorder among women in Nigeria. It was discovered that substance abusing women thought using drugs would make them feel good right away; they used drugs as a way to feel good and forget about their troubles. A high number had attempted to quit the practice of substance abuse with varying results. Drug-using women are more likely to have health issues that may result to clinical depression. Yet, the study was only on social and health repercussions and did not go beyond that to establish the long term effects which might lead women to being admitted to rehabilitation centres. The contextual gap is that since the study was in Nigeria, a country with different environmental factors triggering clinical depression and substance use disorder, there was necessity to carry out the current study.

Mureithi (2021), a researcher in Kenya, examined the impact of peer-led treatments on level of substance use disorder and associated clinical disorder in Nairobi County institutions' female undergraduate students. A sample of 351 women were chosen for the study. The study's findings showed that colleges promoted peer-to-peer counseling overseen by peer leaders that had significant success in reducing clinical depression and substance use disorder. The study however focused on female undergraduate students and peer-led drug use disorder which excluded other reasons that might lead to substance use disorder as well as the effects of drug abuse disorder which necessitated conducting this current study.

Another study conducted in Kenya by Owino (2017), in the Soweto-Kayole Sub-County of Nairobi County, aimed to evaluate the level of substance use disorder and its effect on clinical depression among female teenagers. This study discovered that clinical depression among female teenagers had significant association to substance use disorder. The study however

focused on female teenagers, who may have different attributes in comparison to adult women in the general population which made it necessary to conduct a general study on all women irrespective of their ages.

The previous studies reviewed above have majorly focused on levels of single substance use disorder or on a particular segment of the gender, for instance young/older women. This only gives partial information and findings as it excludes the inclusion of all women. This current study included all women without exclusion in terms of demographic factors in order to establish substance use disorder among women in rehabilitation centres.

2.3.3 Relationship between Clinical Depression and Substance Use Disorder

In the USA, McHugh et al. (2020) investigated the relationship between perceived clinical depression and substance use disorder among women who had completed rehabilitation. The study was a secondary analysis of data from the Women's Development Research Group, which sampled 100 men and 58 women. The study collected data for six months after completing treatment, including drug use, perceived stress, and symptoms of depression. The study used a mixed-methods model to assess whether clinical depression was related to substance use disorder. The findings showed that substance use disorder was positively and significantly associated with subsequent clinical depressive symptoms. The study was conducted in the United States which has a big difference in economic, social and cultural practices compared to those of the Kenya. The study also concentrated on respondents who had completed treatment while the current study focused on people currently in treatment in various rehabilitation centres.

In a related study in the United States, Malval (2020) studied the impact of substance use disorders and clinical depression, and on the high frequency of mental health problems among

impoverished women. The results established that presence of significant and positive effect of clinical depression as a result of substance use disorder among women. Over 58% of impoverished women interviewed confirmed that they engaged in substance use disorder and this contributed significantly to clinical depression. The study however was conducted in United States, a developed country.

Shim et al. (2020) investigated the association between individual symptoms of substance use disorder and major clinical depressive behaviours in Korea. The study incorporated analysis of data gathered from Korea Epidemiological Catchment Area Study report. The assessment of the various variables was conducted using the Composite International Diagnostic Interview. The sample size was 907 respondents. The results established that in women, there was no significant relationship between substance use disorder and major clinical depressive disorder behaviours. The conceptual gap was the focus of association between individual symptoms of substance use disorder and major clinical depressive disorder behaviours which excluded other substances used and only focused on alcohol. This study investigated the different substances used and how they relate with clinical depression.

In Turkey, Rao et al. (2020) investigated the association between substance use disorders, demographic factors and clinical depression in adolescent women as they entered adulthood. A sample of 155 women, aged 17 to 19 years, were selected from 3 secondary schools and were followed yearly for 5 years. Results showed that there was a strong association between major clinical depression and substance use disorders. In addition, there was a positive correlation between demographic factors and substance use disorders. The study however focused on adolescent women, who may have different attributes in comparison to adult women which were the focus of this present study.

In Kenya, Iheanacho et al. (2022) evaluated the prevalence and associations of clinical depression and substance abuse disorder in adults in the emergency department of Kenyatta referral hospital. This study used the WHO Step-by-Step Surveillance Approach (WHO-STEPS) tool and the Health Questionnaire (PHQ-9) to conduct a cross-sectional survey and obtain relevant information. Socio-demographic data on smoking and alcohol consumption and the prevalence of depression were collected in a sample of adult women. To analyze the data, bivariate and multivariate analysis were performed for each outcome of interest and socio-demographic data. The results showed that significant association existed between clinical depression and substance use disorder in adult women. However, there were differences in levels of substance use disorder among adults in the emergency departments of referral hospitals in Kenyatta. The current study focused on women in rehabilitation facilities and incorporated other substances that are being used.

In a related study in Kenya, Mwangi (2021) researched on the relationships between substance use disorder, certain psychosocial situations, and clinical depression among drug-using females in unofficial urban settlements in Nairobi County. The study employed a mixed technique approach and a cross sectional study design. Using targeted mobilizer-driven sampling, 306 females who had injected heroin in the year prior and were under the age of 18 were identified. The findings indicated that substance use disorder had a strong correlation with both clinical depression and hazardous sexual conduct. However, the study also focused on drug-using females who resided in shantytowns in Nairobi County, Kenya, which is different from the current study which focused on rehabilitation centres.

The various studies reviewed were conducted in foreign countries like United States, Turkey and Korea (Malval, 2020; Shim et al., 2020; Rao et al., 2020). This presented a contextual gap. Other reviewed studies have covered various demographics eg. Malval (2020) focused on

impoverished women while Iheanacho et al. (2022) focused on adult women in the emergency department of Kenyatta referral hospital. However, the current research focused on women in rehabilitation centres in Nairobi County, Kenya.

2.4 Theoretical Framework

The study was guided by both Wendy Treynor's (2009) Depression Theory and Behavioral decision theory developed by Einhorn (1981). The theories are discussed below.

2.4.1 Depression Theory

The theory was developed by Wendy Treynor's in 2009 (Wendy, 2009). The theory states that depression occurs when an individual is stuck in a social situation that rejects the person's self for a long period of time. The rejection occurs both internally and externally, and with time it becomes self-rejection, where an individual goes through rejection from both the group and the self (Segal & Teasdale, 2018). The rejection becomes inescapable and depression sets in. In this case, depression is understood as a consequence of continued conflict- both external and internal. If such a person does not get any social group that offers acceptance, they should create an environment that gives them peace of mind. Because lack of peace of mind also brings about some internal pain and discomfort, they may resort to substance use to relief the pain and discomfort albeit temporarily (Tandon & Solomon, 2009).

The substance use behavior allures people to join a peer social group which gives comfort and acceptability. The substance is then becomes both a self-medication to alleviate not only pain and discomfort but also gives them social belonging in fellow substance users. With time, the acceptance found in such a group will slowly internalize leading to self-acceptance, removing personal conflict, and eradicating an individual's depression state (Hetrick et al., 2011). Depending on the social environment, the social group may act as a substance use agent and

initiator into substance use, which ultimately causes addiction which is another mental disorder. In this case, depressive disorder becomes a precursor to substance use disorder.

The main tenet of the theory is depression emanating from self and social rejection owing to some internal and external conflict which leads one to find an environment that provides peace of mind (Clark et al., 2011). It states that substance use may be the easiest way to find peace of mind, get some comfort and social acceptance. The theory is premised on the notion that depression is caused by lack of self-love and self-acceptance, from which the researcher gets the dependent variable, the causative factor of the study. The hypothesis is pertinent to the current study because it will be utilized to clarify how clinical depression and drug abuse disorders among women in rehabilitation centres in Nairobi County, Kenya, are related. The theory is particularly useful since it enables the researcher to assess the level of depression among women and the degree to which the same leads to substance use disorder.

However, Treynor's theory oversimplifies the complex nature of depression. Depression is a multifaceted condition that can be caused by a range of factors, including genetics, environmental factors, and life events. Treynor's theory fails to account for these other factors. This weakness is complemented by the use of Behavioural Decision theory developed by Einhorn (1981).

2.4.2 Behavioural Decision Theory

Behavioural Decision theory was developed by Einhorn (1981). Behavioral decision theory is a psychological theory that explains how individuals make decisions based on their cognitive and emotional processes (Einhorn, 1981). The theory suggests that individuals do not always make rational decisions, but instead are influenced by various biases and heuristics. According to the theory, individuals gather information, evaluate options, and make choices based on their

cognitive and emotional processes. These processes can be influenced by various factors, including emotions, social norms, and cognitive biases.

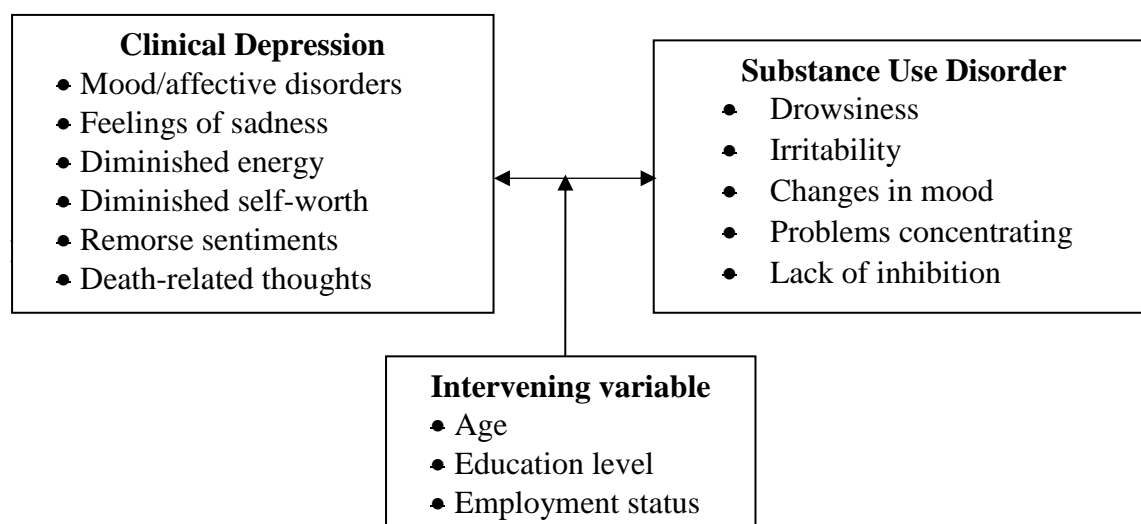
One of the key concepts in behavioral decision theory is the idea of bounded rationality. This suggests that individuals have limited cognitive resources and cannot always make fully rational decisions. Instead, individuals use heuristics, or mental shortcuts, to simplify the decision-making process. Another important concept in behavioral decision theory is the idea of prospect. This theory suggests that individuals evaluate potential losses and gains differently, and are more likely to take risks to avoid losses than to achieve gains (Sainz et al., 2016). Behavioral decision theory has real-world applications in a variety of contexts, such as healthcare. By understanding the cognitive and emotional processes that influence decision-making behavior, individuals can make more informed decisions and develop strategies to overcome biases and heuristics (Secor, 2020). Overall, behavioral decision theory provides valuable insights into the decision-making processes of individuals and can be used to improve decision-making in a variety of contexts.

The theory has several strengths, including: it has real-world applicability, as it can be used to explain and predict decision-making behavior in a variety of contexts, including business, healthcare, and public policy. Unlike traditional decision-making models, behavioral decision theory incorporates emotions into the decision-making process. This is important because emotions can have a significant impact on decision-making behavior. Behavioral decision theory considers the various biases that can affect decision-making behavior, such as confirmation bias, anchoring bias, and availability bias. By understanding these biases, individuals can make more informed decisions (Sainz et al., 2016). The theory is relevant in the present study, as it espouses how substance use disorder is associated with clinical depression.

2.5 Conceptual Framework

A conceptual framework is a diagrammatical representation of variables in a research study.

This study basically used the conceptual framework shown in Figure 2.1 below to investigate the relationship between clinical depression and substance use disorder.



2.5.1 Figure 2. 1 Conceptual framework

Source: Researcher (2023)

As illustrated in the conceptual framework above, the study attempted to establish a relationship between clinical depression and substance use disorder among women in NACADA registered rehabilitation centres in Nairobi County.

2.6 Chapter Summary

This chapter presented an evaluation of empirical studies and the theoretical framework. This chapter discussed the relevant theories on the basis of theoretical analysis. The framework also provided a descriptive representation of the relationship between the variables used in this study. The next chapter presents the research methodology.

CHAPTER 3: METHOD

3.1 Introduction

The chapter outlines the methodology adopted in the study. It articulates the research philosophy, research design, and study location, target population, sampling design and sample size. It also outlines the research instruments, procedure for data collection, data analysis and ethical considerations.

3.2 Research Philosophy

Ontology and Epistemology are the two main divisions of philosophy in literature. Ontology means the study of being. Therefore, the ontological perspective focuses on the reality of reality, or rather what reality is (DePoy & Gitlin, 2019). Epistemology, on the other hand, deals with the nature and source of knowledge, meaning "to know". Therefore, the epistemological perspective focuses on how knowledge is created, received and transmitted (Walliman, 2021). From an epistemological point of view, this study is based on the concept of positivism and uses objective and scientific data collection methods. In addition, every event or situation examined according to the positivist ontology is composed of unilateral reality of independent objectives based on the personal understanding of the researcher.

Positivist approach denotes presence of one unilateral reality or truth for each particular scientific situation irrespective of any other held reality based on science or religion (Gravetter & Forzano, 2018). Positivist approach is justifiable since it makes application of numerous sampling measurements and techniques, varieties of data and data analysis methods (Saunders et al., 2016). As suggested, this research uses sampling design to improve the objectivity and reliability of data collected. A developed questionnaire was also used to provide valuable information and add positive feedback. Moreover, the adoption of descriptive analysis and

skepticism as tools for analyzing data is consistent with positivism. This allows for emotional assessment and rejection based on test results.

3.3 Research Design

In this study, correlation research design was employed. This is supported by the assertion by Saunders et al. (2016) that the design is instrumental as it provides room for examination of related constructs without direct manipulation by the researcher. This design allow researchers to understand the direction of the relationship between variables in the study. Correlation research design was therefore appropriate in examining the relationship between the variables in this study. The design was chosen since it enabled the researcher to detect the presence and strength of relationship between the clinical depression and substance use disorder.

3.4 Location of the Study

DePoy and Gitlin (2019) stipulate that the location of the study is the exact site from which the study is conducted. The location of this study was the rehabilitation centres in Nairobi County. Nairobi County hosts the greatest number of accredited treatment and rehabilitation centres in the country, which makes the County the most suitable study area as it provides the widest pool of the study population. The specific site was all the 12 rehabilitation centres which are NACADA accredited facilities in Nairobi County (NACADA, 2022).

3.5 Target Population

According to Gravetter and Forzano (2018), target population as the complete set of items or cases from which a suitable sample is engaged to study and from which inferences are made. For this study, the target population comprised of 16-70 years old recovering female patients in 12 rehabilitation centres which are NACADA accredited facilities located within Nairobi County, Kenya.

The rationale for selecting women patients is based on the fact that, a tenth (0.1%) of women in Kenya, representing 2.4 million women in the country and 222,438 in Nairobi County as per the 2019 national population census (KNBS, 2019; Mburu et al., 2018; NACADA, 2022) between age 16-70 years is prone to substance abuse disorder. The unit of analysis was the 12 rehabilitation centres that are NACADA accredited facilities and located within Nairobi County. The unit of observation was the 476 recovering in and out-patient women from the 12 rehabilitation centres.

3.6 Sampling Design

A given number of samples are selected to represent the population, such that any statement made about the sample is also true of the population (Gravetter & Forzano, 2018). A sample size is a subset of the population to which researcher intends to generalize the results. Any statements made about the sample should also be true of the population (Walliman, 2021). According to DePoy and Gitlin (2019), a sample is a group of people from which research data was collected. This section presents the sampling frame, sampling technique and the Yamane (1967) formula of sample size determination that was adopted.

3.6.1 Sampling Frame

In statistics, a sampling frame is the source material or device from which a sample is drawn. It is a list of all those within a population who can be sampled, and may include individuals, households or institutions (Walliman, 2021). A sampling frame is described by Vehovar and Manfreda (2017) as the device or source from which a sample is taken. It is a list of every possible sample candidate inside a population, which could be a person, a home, or an organization.

The sampling frame was 568 respondents drawn from the list of all the 12 rehabilitation centres which are NACADA accredited facilities located within Nairobi County, Kenya. The sampling frame included; Premier Rehabilitation Centre, Life bridge Cottage Hospital, Mustakim Rehabilitation Center, Nairobi Outreach Service Trust, Silwan Fountain Treatment & Recovery Center, Shekow Rehabilitation Center, Serenity Rehabilitation Center, New life Rehabilitation Center, Joseph Kang’ethe Rehabilitation Center, Brightside Rehabilitation Center, Odurn Rehabilitation Center and Eden Rehabilitation Center.

Table 3. 1 Target population

Rehabilitation centres	Population
1. Premier Rehabilitation Center	35
2. Lifebridge Cottage Hospital	38
3. Mustakim Rehabilitation Center	40
4. Nairobi Outreach Service Trust	70
5. Silwan Fountain Treatment & Recovery Center	55
6. Shekow Rehabilitation Center	45
7. Serenity Rehabilitation Center	65
8. New life Rehabilitation Center	40
9. Joseph Kang’ethe Rehabilitation Center	55
10. Brightside Rehabilitation Center	48
11. Odurn Rehabilitation Center	40
12. Eden Rehabilitation Center	37
Total	568

3.6.2 Sampling Technique

Sampling technique is the process of studying the population by gathering information and analyzing that data. There are several different sampling techniques available, and they can be subdivided into two groups. To sample the women respondents in rehabilitation centres, stratified proportional sampling was conducted. Stratified proportional sampling involves taking random samples from stratified groups, in proportion to the population (LoBiondo-

Wood & Haber, 2021). The researcher created a stratum of the 12 rehabilitation centres from which proportionate sample size was calculated using Yamane (1967) formula and 234 participants was selected from the 12 centres. The 234 participants were picked randomly from the selected rehabilitation centres until the desired total was attained.

3.6.3 Sampling Size Determination

Sample size determination is the process of choosing the right number of observations or people from a larger group to use in a sample. The goal of figuring out the sample size is to ensure that the sample is big enough to give statistically valid results and accurate estimates of population parameters but small enough to be manageable and cost-effective. Gravetter and Forzano (2018) define sample size as a word in research that refers to the number of subjects utilized in a study to represent a population. To arrive at a desirable sample size, researcher computed the desired sample using with the adoption of Yamane (1967) formula of sample size determination. This formula is considered appropriate for use for a population less than 500 (Yamane, 1967) and since the population of this study was less than 500, it was adopted.

The formula is outlined below;

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

Where;

N= total population

n= sample required

e- Error margin (0.05)

$$n = 568 / [1 + 568 (0.05)^2]$$

$$= 234 \text{ (sample)}$$

The minimum required sample size was 217 respondents. However, for the purpose of allowing for 10% (17) attrition for non-response, the final sample size was adjusted to 234 respondents. The researcher used a sample of 234 female patients across the 12 sampled rehabilitation centres across Nairobi County as shown in Table 3.2.

Table 3. 2 Sample

Rehabilitation centres	Population	Sample size
1. Premier Rehabilitation Center	35	16
2. Lifebridge Cottage Hospital	38	18
3. Mustakim Rehabilitation Center	40	18
4. Nairobi Outreach Service Trust	70	25
5. Silwan Fountain Treatment & Recovery Center	55	18
6. Shekow Rehabilitation Center	45	16
7. Serenity Rehabilitation Center	65	27
8. New life Rehabilitation Center	40	16
9. Joseph Kang'ethe Rehabilitation Center	55	16
10 Brightside Rehabilitation Center	48	16
11 Odurn Rehabilitation Center	40	25
12 Eden Rehabilitation Center	37	13
13 10% attrition (17)		17
Total	568	234

3.7 Research Instruments

According to Walliman (2021), research instruments may include interviews, tests, surveys, or checklists. The research instrument is usually determined by researcher and is tied to the study methodology. A research instrument is also defined as any tool that is used by a researcher to obtain, measure, and analyze data that will help a researcher conduct quantitative, qualitative, and mixed studies.

The first variable is clinical depression and was measured through the Patient Health Questionnaires (PHQ-9) for questions on Clinical Depression (Kroenke et al., 2001). This instrument was self-administered by the researcher to the participants and clarification was done in Kiswahili to those with issues understanding the English format of the tool. Kroenke et al. (2001) created the Patient Health Questionnaires (PHQ-9) to establish a tentative diagnosis and quantify depressed complaints dimensional characters. Each symptom has been reported by interviewees as within the previous two weeks, with possible responses varying from zero for no symptoms at all to 3 for almost daily. The tool was administered in 5 to 10 minutes for each participant.

The tool has been used in previous studies (Ongeri, 2011) related to clinical depression and substance use disorder in Kenya and had attained appropriate validity and reliability measures. As such, since the tool was validated from previous studies, validity and reliability was not tested in this study. The scoring of PHQ-9 is as follows: scores less than 5 almost and always indicate absence of depressive disorder; scores of 5 to 9 predominantly represented patients with either no depression or sub-threshold (i.e. other) depression; scores of 10 to 14 showed a spectrum of patients; and scores of above 15 indicated major depression. As such, clinical depression occurs from the scores of 5 and above. The Patient Health Questionnaires (PHQ-9) questionnaire is attached in Appendix I.

The second variable is level of substance use disorder and was measured using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). Skinner (1982) created the ASSIST to identify problems connected to the use of intoxicants in patients receiving primary care (Skinner, 1982). The tool has been employed by other scholars in related studies in Kenya and particularly in Nairobi County (Masila, 2019). In these studies, it attained the desirable validity and reliability of above 0.7 and hence no need for repeat testing in this study. In this

study, the ASSIST tool was essentially ranked as moderate, high or low risk. The ASSIST tool consisted of questions on examining the severity of drug use disorder. The ASSIST questionnaire is attached in Appendix II.

3.8 Validity and Reliability of Research Instruments

According to Heale and Twycross (2015), validity is the accuracy and meaningfulness of inferences, which are based on the research results. It is the degree to which results obtained from the analysis of the data actually represent the phenomenon under investigations. The validity of the questionnaires was achieved through counterchecking the PHQ-9 questionnaire that was used in obtaining relevant data from previous studies (Ongeri, 2011) that attained desirable validity and reliability of Cronbach Alpha of above 0.7 score. The PHQ-9 adopted was self-administered.

At the initial visit for depression care, the PHQ-9 was used to assist with diagnosis and identification of problem symptoms from the respondents. According to Wood et al (2006), a research instrument's reliability is specified as the degree to which the instrument produces the same result on repeated measures. Internal reliability for the PHQ-9 was reported as “excellent” with a Cronbach's α of 0.89 and 0.86 in the primary care and obstetrical clinical studies, respectively. Kroenke, Spitzer, and Williams (2001) also report test– retest reliability to be excellent with a kappa of 0.84 over the time span of 48 hr.

The ASSIST tool was also validated from previous studies (Mwanyika, 2020) that attained desired Cronbach Alpha reliability of above 0.7 scores. The tool is a brief, easily administered, valid and reliable screening instrument for all psychoactive substances in drug treatment and primary care settings. Mwanyika (2020) in a study on relationship between levels of depression and substance use confirmed the reliability of above 0.7 score of ASSIST in Taita Taveta County. In this study, the ASSIST tool has desired adequacy in measuring the scores of

substance use disorder using the scale of Cronbach Alpha value of above 0.8 or 80% (World Health Organization, 2020). This was also ascertained by Okoyo et al. (2022) in a study on prevalence, types, patterns and risk factors associated with drugs and substance abuse in selected counties in Kenya that scored Cronbach Alpha of 0.87.

3.9 Pre-testing of Instruments

The pre-test involved the 24 patients answering the PHQ-9 checklist of nine items that measures the severity of depression and modified MASSIST check lists of 7-items on substance currently in use by patients and 7-item checklist on frequency of substance use disorder from rehabilitation centres outside Nairobi County who had similar characteristics to the ones in Nairobi. This was done through expert opinions of the supervisors. Research tools were pretested and adjustments made to ensure accuracy before the main data collection. The adjustment was done on the demographic information part of the tool.

3.10 Data Collection Procedures

Prior to the collection of data, the study objectives were explained to the participants by the researcher. Only those participants who gave an informed consent of signature or thumb print participated in the study. The researcher administered the questionnaires, where; Part A collected demographic data, Part B used the PHQ-9 and Part C used ASSIST. The study participants were recruited consecutively for a period of two weeks from August 14-23, 2023. Invitations and screening for exclusion criteria were conducted to determine suitability for the study. By signing the consent form, the participants were also subjected to confirm that they would give answers in their utmost honest opinion and that they would not be biased or lie in the answering of the questionnaires that were issued to them.

3.11 Data Analysis

Once data was gathered, the study assessed the questionnaires for completeness after which coding and entry of the data followed. Data analysis was then conducted using SPSS version 26. Both inferential and descriptive analyses were utilized in this regard. Descriptive analysis involved use of means, frequency counts, and percentages as measures of central tendency of data; while inferential analytics included both regression analysis and Pearson correlation. Regression computation was used to determine the linear relationship between the substance use disorder and clinical depression.

Table 3. 3 Data

Analysis of PHQ-9 data- Depression		Signifies	Analysis
1. Demographic information (for both variables)			SPSS Descriptive statistics (Frequencies and Percentages)
2. Objective 1		Mean, frequency counts and percentages	Descriptive statistics
3. Objective 2		Mean, frequency counts and percentages	Descriptive statistics
4. Objective 3		Correlation and regression analysis	
5. Hypothesis		t-test	Inferential Statistics

3.12 Ethical Considerations

An introduction letter and a research approval were requested and obtained from Tangaza University before information gathering. This was then used to apply for a license for gathering data from the NACOSTI. Before the questionnaires were administered, the researcher asked for permission to collect data from the management of each rehabilitation centres. The license

from NACOSTI was presented to the directors at each rehabilitation centre to ensure authenticity, ethical standards and consideration for support during the data collection exercise.

The study particularly ensured that information given by participants was exclusively utilized for addressing the research objectives and for academic purposes. The researcher respected participants' rights to refrain to respond to the questionnaire. The researcher exercised extreme caution to avoid pressuring participants to provide information that they did not want. In cases when respondents were unwilling to disclose information that could identify them, the researcher respected their wishes in order to avoid violating their privacy.

Also, respondents were guaranteed that their personal details would be considered as confidential. The researcher took care in this regard to avoid publishing any information given in confidence or sufficient personal information to reveal the respondents' identities. To ensure this, the researcher stayed away from personal identifiers like names, addresses, and dates of birth, among other things. The protection of confidentiality was further upheld through effective data management and security where data was stored in password protected folders in the researcher's computer. By reporting techniques, methods, results, data, and publishing status as honestly as possible, the study assured objectivity. There were no false, or misrepresented data. By appropriately crediting sources using in-text citations and referencing, the investigation further avoided plagiarism.

3.13 Summary of the Chapter

This chapter outlined the research methodology that guided the study. It conclusively presented the research philosophy, research design, and study location, target population, sampling design and sample size. It also discussed the research instruments, procedure for data collection, data analysis and ethical considerations. The next chapter presents the results of data analysis.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents the results of data analysis based on the study objectives. The results of the analyzed data are presented in detail using statistical charts and tables.

4.2 Response Rate

A total of 234 questionnaires were distributed to respondents for filling. Out of the 234 questionnaires, 183 were deemed completely filled and fit for use for analysis of data. This represented a 72% response rate. A response rate of 50 percent is adequate for data analysis and reporting; a rate of 60 percent is good and a response rate of 70 percent and over is excellent (Mugenda & Mugenda, 2003). The results are shown in Table 4.1.

Table 4. 1 Response rate

Data Collection Instrument	Target	Number returned	Return Rate (%)
Questionnaire	234	183	72

4.3 Demographic Characteristics of Respondents

Information on the demographic information of respondents is discussed in this section. The following demographics were included; age, marital status, number of children, education level and source of income.

Table 4. 2 Demographic characteristics

	Frequency	Percentage
Age		
16-25	50	27.3
26-35	45	24.6
36-45	61	33.3
46-55	17	9.3
56-65	6	3.3
above 65	4	2.2

Marital Status

Single	69	37.7
Separated	33	18.0
Divorced	24	13.1
Widowed	26	14.2
Others	31	16.9

Number of Children

None	26	14.2
One	74	40.4
Two	33	18.0
Three	32	17.5
More than Three	18	9.8

Education Level

Primary	4	2.2
Secondary	75	41.0
Tertiary	59	32.2
Graduate	45	24.6

Source of Income

self employed	50	26.8
Employed	106	57.4
Others	27	14.8
Total	183	100

Results indicated that most of respondents in the rehabilitation centers are between the ages 36 to 45 and this was shown by a 33.3% representation of the total population. This was followed by respondents aged between 16 to 25 years with this getting a representation of 27.3%. Respondents aged between 26 to 35 years were represented by 24.6% of the total population. Respondents aged 46 to 55 were represented by 9.3%, while those who were aged between 56 to 65 years were represented by 3.3% and the least representation were respondents aged above 65 years and this only was 2.2% of the total population.

The overall the study showed a lot of the teenagers and youths (16-35) and middle-aged people (36-45) being present in the rehabilitation centres. This means that young people are more exposed to drugs and substance use as they may get from peer pressure and the nature of some environments where drugs are abused either at home or in schools. The results show that most of the respondents are single and this was at 37.7% of the total population. In addition, 18% of the respondents in rehabilitation centres were separated and another 16.9% were married (others).

Further, 14.2% of the population was widowed and only 13.1% were divorced. This shows that substance use disorder pervaded the marital status of respondents and both married and single individuals were engaged in substance use disorder. The study established that most respondents in the rehabilitation centres had one child. This represented almost half of the population with 40.4% being in this category. Additionally, 18% had two children, 17.5% had three children, 14.2% of the population had no children at all and only 9.8% of the population had more than 3 children. The results indicate a low number of children among respondents in rehabilitation centres with a total of 55% having one or less children. This shows that substance use disorder was prevalent mostly among parents with one or two children.

Results also indicated that 41% had at least secondary education. Only 2% of those surveyed had less than primary school education. Participants with tertiary education constituted 32.2% of the total population while university graduates made up 24.6% of the total population. This indicates that the majority of respondents with a high level of education and awareness of the dangers of drug use still participate in this vice and this may be necessitated by the conditions that they find themselves in like environments where drugs are being used. The study lastly found it notable that most respondents in the rehabilitation centres were employed. This was represented by a total of 57.4% of the total population. Only 26.8% were self-employed and

14.8% of the total population were jobless and got their income from other sources like financing from family, friend and well-wishers. Employed people have the financial resources to buy drugs hence majority of the people in the rehabilitation centres are employed.

4.4 Level of Clinical Depression among Women in Rehabilitation Centres

The study investigated the level of depression among patients in the rehabilitation centres. This was done through analysis of PHQ-9 data. Respondents were asked to answer how often they had been bothered by certain listed problems in the questionnaire over the previous two weeks. The patients would tick and a total score was calculated. This was based on the various level of depression ranging from minimal depression 1-4, mild depression (5-9), moderate depression (10-14), moderate severe depression (15-19), severe depression (20-27). The cut-off point for clinical depression was the score of 5 and above. Results were indicated in Table 4.3 below.

Table 4.3 Level of clinical depression

	Frequency	Percentage	Level of depression
1-4	3	2	Minimal
5 – 9	15	8	Mild
10 – 14	13	7	Moderate
15 – 19	49	27	Moderate Severe
20 – 27	103	56	Severe
Total	183	100	

Results from the study showed that majority of the women in rehabilitation centres 103 which totaled to 56% had severe depression, another 49 women representing 27% had moderate severe depression, and 13 women who represented 7% showed moderate depression. In addition, 8% exhibited mild depression. This means that most of the women in the rehabilitation centres are there because they exhibit severe depression hence the need for close attention by medical professionals. This implies that to be able to control clinical depression a

rehabilitation centre is among the best places one can achieve and manage to control the severe levels. This means that patients who seek treatment for their depression may recover more quickly when they receive treatment.

4.4.1 Level of Clinical Depression as per the Socio-Demographic Characteristics

The analysis of the level of clinical depression as per the socio-demographic characteristics of the respondents was conducted. The results are shown in Table 4.4 below.

Table 4. 4 Level of clinical depression and social demographics

Socio-demographics	Items	Frequency (n=183)	Clinical depression	p-value
Age	16-25	50	15(30%)	<0.001
	26-35	45	33(73%)	
	36-45	61	36(59%)	
	46-55	17	8(47%)	
	56-65	6	3(50%)	
	Above 65	4	1(25%)	
Marital status	Single	69	39(57%)	<0.002
	Separated	33	23(70%)	
	Divorced	24	12(50%)	
	Widow	26	11(42%)	
	Others	31	11(36%)	
Number of children	None	26	12(46%)	<0.000
	One	74	35(47%)	
	Two	33	14(42%)	
	Three	32	16(50%)	
	Over three	18	12(67%)	
Level of education	Primary	4	2(50%)	<0.002
	Secondary	75	40(53%)	
	Tertiary	59	26(44%)	
	Graduate	45	18(40%)	

Income	Self-	50	32(64%)	<0.001
	employed	106	57(54%)	
	Employees	27	11(41%)	
	Others			

Age

From a total of 183 respondents, 33 (73%) at the age bracket of 26-35 years had a history of clinical depression. Another 36 (59%) at the age bracket of 36-45 years also had clinical depression. Finally, 3 (50%) respondents at the age bracket of 56-65 had clinical depression.

Marital status

In this aspect, 23 (70%) separated respondents and another 39 (57%) single respondents had a history of clinical depression. Additionally, 12(50%) divorced respondents also reported having clinical depression.

Number of children

The results showed that 12 (67%) respondents with more than three children reported history of clinical depression. This was followed by 16(50%) with three children who also reported having clinical depression.

Level of education

In this aspect, 40 (53%) of the respondents who had attained secondary education reported clinical depression. This was followed by 2(50%) respondents with primary education and who reported clinical depression.

Income

The results indicated that 32(64%) of self-employed respondents reported clinical depression. In addition, 57(54%) of employed respondents also had clinical depression.

4.5 Level of Substance Use Disorder

Substance use disorder is defined as a mental illness that impairs a user's mind and actions which makes it difficult for them to regulate their usage of drugs, liquor, or other narcotics, whether they are illicit or not. The Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) were used to determine the level of substance use disorder. This was done using the levels of moderate, high or low risk.

4.5.1 Question 1: Prevalence of lifetime substance use among patients

Respondents were requested to indicate use of various substances in their lives. The results are shown in Table 4.5.

Table 4. 5 Prevalence of lifetime substance use

Response	Frequency	Percentage
Yes	141	77
No	42	23
Total	183	100

The results established that 141 respondents representing 77% of total population reported a history of substance use. Those who reported non-use of substances were 42 representing 23% of the total population. This implies that majority of the respondents in rehabilitation centres had used the various substances outlined in the questionnaire in their lifetimes.

4.5.1.1 Question: Patterns of lifetime substance use among patients

Respondents were requested to indicate patterns of use of various substances in the last three months. The results are shown in Table 4.6.

Table 4. 6 Patterns of lifetime substance use

Response	Frequency	Percentage (n=141)
Alcohol	75	53
Tobacco	44	31
Cannabis	22	16
Total	141	100

The results established that 75 respondents representing 53% of total population reported alcohol use in last three months. Another, 44 representing 31% of total population used tobacco while the other 22 representing 16% used cannabis.

4.5.2 Question 2: Prevalence of substance use among patients in last three months

Respondents were requested to indicate prevalence of use of various substances in the last three months. The results are shown in Table 4.7.

Table 4. 7 Prevalence of substance use among patients

	Frequency	Percentage (n=141)
Yes	115	82
No	26	18
Total	141	100

The results established that 115 respondents, representing 82% of total population, reported substance use in the last three months. In addition, 26 reported non-use of substance, representing 18% of total population. This implies that majority of the respondents in rehabilitation centres had used the various substances outlined in the questionnaire in the last three months.

4.5.2.1 Question 2: Patterns of substance use among patients with lifetime use

Respondents were requested to indicate patterns of use of various substances in the last three months. The results are shown in Table 4.8.

Table 4. 8 Patterns of substance use

Response	Frequency	Percentage (n=141)
Alcohol	75	53
Tobacco	44	31
Cannabis	22	16
Total	141	100

The results established that 75 respondents, representing 53% of total population, reported alcohol use in last three months. Another, 44 representing 31% of total population used tobacco while the other 22 representing 16% used cannabis.

4.5.3 Question 3 Strong desire to use drugs in the past three months

The 141 respondents who had indicated use of substance use in the past two months were then asked the frequency of strong desire or urge to use those substances in the past three months.

Table 4.9 shows the results.

Table 4. 9 Desire to use substances

Substance	Never	Once/twice	Monthly	Weekly	Daily/almost daily
Alcohol	5/4%	23/16%	18/13%	60/43%	35/25%
Tobacco	14/17%	42/30%	37/26%	12/9%	46/33%
Cannabis	9/6%	16/11%	20/14%	54/38%	41/22%

In the past three months, 60 (43%) respondents had a weekly desire to use alcohol, 35 (25%) had a daily/almost daily desire to use alcohol while 23 had used alcohol once or twice. Finally, five respondents had no desire to use alcohol. In addition, 42 respondents desired to use tobacco once or twice, 37 had monthly desire, 46 had daily/almost daily desire while 24 had no desire to use tobacco. On the desire to use cannabis, 54 respondents had weekly desire, 41 had daily/almost daily desire, 20 had monthly desire, 16 had desire once or twice while 9 never showed any desire.

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

The 141 respondents who had indicated use of substance use in the past three months were then asked the frequency of substance used leading to health, social, legal/financial problems. Table 4.10 shows the results.

Table 4. 10 Substance use problems

Substance	Never	Once/twice	Monthly	Weekly	Daily/almost daily
Alcohol	5/4%	11/8%	5/4%	75/53%	45/32%

Tobacco	57/40%	3/2%	8/5%	12/9%	61/43%
Cannabis	24/17%	5(4%)	13/9%	33/23%	66/47%

The results established that 5 alcohol users had never experienced health, social, legal/financial problems. However, 75 alcohol users had experienced these problems weekly, 45 had daily problems, 11 had experienced problems once/twice while 5 on monthly basis. On problems related to tobacco, 57 respondents had never experienced such problems. Meanwhile, 12 had problems on weekly basis while 61 had daily/almost daily problems. On cannabis related challenges, 24 had no such problems, 5 had problems once/twice, 13 had weekly problems, 33 had monthly problems while 66 had daily problems.

4.5.5 Question 5: Substance use and failure to do the expected

The 141 respondents who had indicated use of substance use in the past three months were then asked how often they had failed to do what was normally expected because of use of those substances. Table 4.11 shows the results.

Table 4. 11 Substance use and failure

Substance	Never	Once/twice	Monthly	Weekly	Daily/almost daily
Alcohol	65/46%	23/16%	12/9%	16/11%	25/18%
Tobacco	94/60%	42/30%	0/0%	2/1%	2/1%
Cannabis	89/70%	23/16%	20/14%	5/4%	4/2%

The results established that alcohol use was the biggest cause of failure to do what was expected. This is since a total of 76 respondents had failed to do what expected, 23 once/twice, 12 monthly, 16 weekly while 25 on daily/almost daily basis. This was followed by cannabis where a total of 52 respondents failed to do what was expected with 23 once/twice, 20 monthly, 5 weekly and 4 daily/almost daily. Finally, a total of 42 tobacco users failed to do what was expected with 42 once/twice, 2 weekly and 2 daily/almost daily.

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

The 141 respondents who had ever used a substance in their lifetime were requested to state if a friend or relative/caregiver had concerns on their use of the various substances outlined. The results are shown in Table 4.12.

Table 4. 12 Concern over substance use

Substance	Never	Yes, but not in the last three months	Yes, but in the last three months
Alcohol	5/4%	20/14%	116/82%
Tobacco	28/20%	42/30%	71/50%
Cannabis	31/22%	33/23%	77/55%

Alcohol had the highest number of respondents (136) who received concerns over substance use. This was followed by tobacco with 113 respondents while cannabis had 100 respondents.

4.5.7 Question 7: Who had personally attempted to cut down substance use but failed

The 141 respondents who had ever used a substance in their lifetime were requested to state if in the past three months they had tried to cut down on substance use. The results are shown in Table 4.13.

Table 4. 13 Cutting down on substance use

Substance	Never	Yes, but not in the last three months	Yes, but in the last three months
Alcohol	39/28%	46/33%	56/40%
Tobacco	71/50%	15/11%	51/36%
Cannabis	75/53%	22/16%	48/34%

The results indicate that alcohol and cannabis had the highest number of respondents trying to cut down. Alcohol had 102 users while cannabis had 70 users trying to control use. Meanwhile, tobacco had 62 users attempting to stop its usage.

4.5.8 Prevalence of substance use

The respondents were requested to indicate their prevalence of substance use. The results are shown in Table 4.14.

Table 4. 14 Prevalence of substance used

Substance Used	Frequency	Percentage
Substance use	141	77
Non-use	42	23
Total	183	100

It was established that there was high affinity to alcoholic beverage like beer, wine spirits and home brews.

4.5.9 Severity Assessment Score

The severity of substance use was calculated. The results are shown in Table 4.15 below.

Table 4. 15 Severity of substance use

Response	Mild	Moderate	Severe
Alcohol	36	72	33
Tobacco	44	71	26
Cannabis	46	56	39

The results show that most of the respondents had a moderate risk of health and other problems associated with their current substance use.

4.6 Relationship between Clinical Depression and Substance Use Disorder

To establish the relationship between clinical depression and substance use disorder, correlation test was conducted. The results are shown in Table 4.16 below.

Table 4. 16 Relationship between clinical depression and SUD

	Clinical depression	Substance use disorder
Pearson Correlation	.415**	.368**
Sig. (2-tailed)	.000	.000
N	183	183

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

The results indicated that there was a strong linear correlation between clinical depression and substance use disorder (0.415). This means that a positive and moderate relationship exists between clinical depression and substance use disorder.

4.6.1 Correlation between Substance Use Disorder and Demographic Characteristics

Pearson Correlation test was done to test the relationship of substance use disorder and different demographic characteristics. The results are shown in Table 4.17 below.

Table 4. 17 Correlation between substance use and demographic characteristics

		Substance Use Disorder
Age	Pearson Correlation	.195**
	Sig. (2-tailed)	.000
	N	183
Marital Status	Pearson Correlation	.045
	Sig. (2-tailed)	.545
	N	183
Number of Children	Pearson Correlation	.119
	Sig. (2-tailed)	.109
	N	183
Level of Education	Pearson Correlation	-.026
	Sig. (2-tailed)	.731
	N	183
Income	Pearson Correlation	.129**
	Sig. (2-tailed)	.000
	N	183

Results from a Pearson Correlation test done to test the relationship of different demographic characteristics showed that income has a positive correlation value of 0.129 and the value of p was less than 0.05. Age also had a positive correlation value of 0.195 and the p value was also less than 0.05. This showed that Age and Income had a significant relationship with substance use disorder. Number of children ($p > 0.05$), Marital Status ($p > 0.05$) and level of education ($p > 0.05$) from the results obtained meant that they didn't have any relationship with substance use disorder. The researcher recommends that more financial knowledge on how to use funds from income to be conducted so as to enlighten people on other ways of using money and sustaining their incomes rather than engaging the funds in buying drugs. The study would also

recommend that drug and substance users be advised and enlightened on the long term effects of using drugs, especially the young people. This would help in ensuring youths do not engage in substance use.

4.6.2 Hypothesis Test

H₀: There is no significant relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County.

The relationship between clinical depression and substance use disorder is bi-directional, meaning that people who misuse substances are more likely to suffer from depression, and vice versa. This is shown in Table 4.18.

Table 4. 18 Regression testing

	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error B			
(Constant)	0.163	.223		8.603	.000
Level of clinical depression	.651	.054	.344	1.577	.000
1 Level of substance used	.454	.041	.551	2.541	.000
Substance use disorder× clinical depression	.262	.072	.404	1.232	.002

a. Dependent variable: Substance use disorder

b. Predictors: (Constant), Clinical depression (level of clinical depression, level of substance used)

In this case, level of clinical depression showed positive and linear significant relationship with substance use disorder ($\beta=0.651$, T-value =1.577, $p=0.000$: a significance value of less than 0.05 implies that the variable is significant in its relationship and impact on the other variable). This implies that one unit change in level of clinical depression resulted in 65.1% increase in SUD among women in rehabilitation centres. In addition, level of substance used showed positive and linear significant relationship with substance use disorder ($\beta=0.454$, T-value

=2.491, $p=0.000<0.05$). This implies that one unit change in level of substance used resulted in 45.4% increase in SUD among women in rehabilitation centres.

Finally, in order to test the hypothesis, the relationship between clinical depression and substance use disorder showed positive and linear significant relationship ($\beta=0.262$, T-value =1.232, $p=0.002<0.05$). This implies that one unit change in this relationship resulted in 26.2% increase in SUD among women in rehabilitation centres. The results therefore indicated that the null hypothesis was rejected because results showed that there was a significant relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County.

4.7 Summary of the Chapter

The chapter has presented the results of the analysis of the data collected. This was done as per the three specific objectives of the study. These were to determine the level of clinical depression among women; to evaluate the level of substance use disorder among women and to establish the association between clinical depression and substance use disorder among women in rehabilitation centres. The chapter also presented the results of the hypothesis testing. The next chapter presents a discussion of the findings.

CHAPTER 5: DISCUSSIONS

5.1 Introduction

This chapter presents the discussion of the findings of this study. The chapter summarizes the discussion of findings based on the objectives of the study.

5.2 Demographic Characteristics of Respondents

The aim of this study was to evaluate the association between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County, Kenya. This study was designed with three specific objectives: to determine the level of clinical depression among women; to evaluate the level of substance use disorder among women and to establish the association between clinical depression and substance use disorder among women in rehabilitation centres. The study found out that most of the respondents in the rehabilitation centers are between the ages 36 to 45 and this was shown by a 33.3% representation of the total population. This was followed by respondents aged from 16 to 25 years with this getting a representation of 27.3%.

Respondents aged between 26 to 35 years were represented by 24.6% of the total population. Respondents aged 46 to 55 were represented by 9.3%, while those who were aged between 56 to 65 years were represented by 3.3% and the least representation were respondents aged above 65 years and this only was 2.2% of the total population. The results are congruent with findings by National Institute on Drug Abuse (2022) that young people are the most exposed to risk of developing addiction or substance use disorder. This is because their brains are still in progress of developing and any drugs introduced during this period increases their chance of mental problems.

The results showed that most of the respondents are single and this was at 37.7% of the total population. In addition, 18% of the respondents in rehabilitation centres were separated and another 16.9% were married (others). Further, 14.2% of the population was widowed and only 13.1% were divorced. This shows that both married and single individuals were engaged in substance use disorder. The results agreed with Okoyo *et al* (2022) in Kenya that most of the people in rehabilitation centres are single, widowed or divorced. This is because most people either prefer substance use instead of other activities and this limits interaction between them and other people. Also if one's partner finds out that they are misusing substances the partner tends to leave the respondent. In some cases others are widowed because they lost their partner to substance misuse or problems related to substance misuse

The study established that most respondents in the rehabilitation centres had one child. This represented almost half of the population with 40.4% being in this category. Additionally, 18% had two children, 17.5% had three children, 14.2% of the population had no children at all and only 9.8% of the population had more than 3 children. The results indicate a low number of children among respondents in rehabilitation centres with a total of 55% having one or less children. This shows that substance use disorder was prevalent mostly among parents with one or two children. The results support the findings in USA by Salk, Hyde and Abramson (2017) that mostly, individuals with one child or no child engage in substance use disorder. This is because raising children is a very demanding responsibility. Children in particular can suffer mentally, emotionally and even physically when they have or more parents battling a substance use disorder. Some individuals have lost children due to health problems related to substance use disorder and other problems that are related to substance use disorder thus elevating the probability of involvement in the vice.

Results also indicated that 41% had at least secondary education. Only 2% of those surveyed had less than primary school education. Participants with tertiary education constituted 32.2% of the total population while university graduates made up 24.6% of the total population. The results support Wegbom et al. (2023) results in a study in Nigeria on determinants of depression among pregnant women that suggested that higher educational attainment had a strong correlation with depression. This is because striving to acquire higher education usually elevates the stress levels of individuals and may enhance prevalence of substance abuse.

The study lastly found that most respondents in the rehabilitation centres were employed. This was represented by a total of 57.4% of the total population. Only 26.8% were self-employed and 14.8% of the total population were jobless and got their income from other sources like financing from family, friend and well-wishers. The results agreed with WHO (2021) report that substance use is increasing among populations with regular income and is no longer a preserve of the jobless people. The results further compliments the assertion by NACADA report (2021) that drug usage and substance use disorder have increased dramatically over the past 20 years due to increased level of disposable income among the population thus affecting all facets of society. This implies that substance use problem is still common and disturbing especially on people with assured income.

5.3 Level of Clinical Depression among Women in Rehabilitation Centres

The analysis of the level of clinical depression as per the socio-demographic characteristics of the respondents indicated that in terms of age, 33 (73%) at the age bracket of 26-35 years had a history of clinical depression. Another 36 (59%) at the age bracket of 36-45 years also had clinical depression. Finally, 3 (50%) respondents at the age bracket of 56-65 had clinical depression. The results agreed with Lijin (2020) study, in India, that women over the age of 30

had odds for depression that were more than twice as high. This shows that women below the age of 35 years and who are classified as youths in Kenya had a higher levels of clinical depression compared to the other age groups.

In terms of marital status, 23 (70%) separated respondents and another 39 (57%) single respondents had a history of clinical depression. Additionally, 12(50%) divorced respondents also reported having clinical depression. The results agreed with Lijin (2020) study, in India, that women who had experienced partner violence or separated in the previous month had odds that were almost twice as high. The results supported Wegbom et al. (2023) who indicated that separated and divorced women have higher prevalence to clinical depression than their married counterparts. This shows that family instability was a catalyst to many women in rehabilitation centers succumbing to clinical depression.

In reference to number of children, 12 (67%) respondents with more than three children reported history of clinical depression. This was followed by 16(50%) with three children who also reported having clinical depression. The results concur with Masila's (2019) findings that women with big families have higher rates of clinical depression, compared to those with small families. The results further supports Vimla (2017) who established those unemployed women or those with low-paying jobs had a higher prevalence to clinical depression compared with those in stable employment. Finally, the results indicated that women with many children had a higher predisposition to clinical depression compared with those with small families. This implies that size of the family in terms of many children was a stressor to women in rehabilitation centers and contributed significantly to suffering from clinical depression.

In terms of level of education, 40 (53%) of the respondents who had attained secondary education reported clinical depression. This was followed by 2(50%) respondents with primary

education and who reported clinical depression. The results agreed with Lijin (2020) study in India that women with education beyond the primary level had higher odds of clinical depression. The results agreed with Agwogie, Kliewer and Ibrahim (2023) in a study in Nigeria that found women with higher levels of education and positive relationship with parents reported lower levels of substance use disorder at 17.4%. The results complement Abebe et al. (2022) that established that expectant mothers with lower education levels had a higher predisposition to clinical depression. This shows that low levels of education sometimes led women to succumb to clinical depression as they did not possess the requisite knowledge to deal effectively with substance use.

In reference to income 32(64%) of self-employed respondents reported having clinical depression. In addition, 57(54%) of employed respondents also had clinical depression. The findings support Masila (2019) that clinical depression was higher in unemployed women or those with unstable jobs. The results further support Vimla (2017) that indicated that women with many children had a higher predisposition to clinical depression compared with those with small families. Similarly, the results support Bowen (2019) in a study in Canada who found that women with lower income had a clinical depression prevalence of 49.5%, which is comparable to other international studies of minority, low-income, and inner-city women. This implies that women without secure employment or those in unstable employment had a higher tendency to succumb to clinical depression. As such, scarcity of provision of stability in terms of security of finances to deal with basic needs is a major catalyst for women to suffer from clinical depression.

5.4 Level of Substance Use among Women in Rehabilitation Centres

With regard to prevalence of lifetime substance use among patients, 141 respondents representing 77% of total population reported a history of substance use. Those who reported

non-use of substance were 42 representing 23% of total population. These results agreed with Maimuna's (2019) study that levels of substance use disorder among women in Nigeria were at 54.3%. Similarly Mureithi (2021) established that the level of substance use disorder among female undergraduate students was at 43.2%. This implies that majority of the respondents in rehabilitation centres had used the various substances outlined in the questionnaire in their lifetimes.

In terms of patterns of lifetime specific substance use among patients, 75 respondents representing 53% of total population reported alcohol use in last three months. Another, 44 representing 31% of total population used tobacco while the other 22 representing 16% used cannabis. The results are consistent with those of Hunt et al. (2020) study in Australia that found that the most common form of substance use was alcohol, followed by illicit drug use and cannabis use. This indicated that alcohol is the most abused substance by most of the women in rehabilitation centres in Nairobi County. The results support Jaguga and Kwobah (2020) that the most commonly abused substances among women in Nairobi County include alcohol, tobacco, and prescription drugs. The results are also congruent with a study conducted in Kenya by Owino (2017), where alcohol (petrol spray, glue, aerosol, and gasoline) and tobacco were the two mostly abused substances. This implies that alcohol, tobacco and cannabis as the three substances that are highly abused by women in rehabilitation centres in Nairobi County.

With regard to a strong desire to use drugs in the past three months, 60 respondents had a weekly desire to use alcohol, 35 had a daily/almost daily desire to use alcohol while 23 had used alcohol once or twice. Finally, five respondents had no desire to use alcohol. In addition, 42 respondents desired to use tobacco once or twice, 37 had monthly desire, 46 had

daily/almost daily desire while 24 had no desire to use tobacco. On the desire to use cannabis, 54 respondents had weekly desire, 41 had daily/almost daily desire, 20 had monthly desire, 16 had desire once or twice while 9 never showed any desire.

In terms of substance use leading to health, social, legal/financial problems, 10 alcohol users had never experienced health, social, legal/financial problems. However, 45 alcohol users had experienced these problems weekly, 35 had daily problems, 31 had experienced problems once/twice while 20 on monthly basis. On problems related to tobacco, 57 respondents had never experienced such problems. Meanwhile, 33 had problems once/twice, 28 monthly, 12 on weekly basis while 11 had daily/almost daily problems. On cannabis related challenges, 24 had no such problems, 66 had problems once/twice, 33 had weekly problems, 13 had monthly problems while 5 had daily problems. The results supported that findings of Meyer et al. (2019), in Montreal, Canada, that alcohol users experience the highest health and social problems in the society.

In relation to substance use and failure to do the expected, a total of 76 respondents had failed to do what expected, 23 once/twice, 12 monthly, 16 weekly while 25 on daily/almost daily basis. This was followed by cannabis where a total of 52 respondents failed to do what was expected with 23 once/twice, 20 monthly, 5 weekly and 4 daily/almost daily. Finally, a total of 42 tobacco users failed to do what was expected with 42 once/twice, 2 weekly and 2 daily/almost daily. The results complements the study by Ghazal (2019), in Pakistan, which found that substance abuse lead to failure of the users to participate in personal and self-economic activities.

In terms of the concern by a friend, relative or anyone else about drug use, alcohol had the highest number of respondents (66) who received concerns over substance use. This was

followed by tobacco with 40 respondents while cannabis had 34 respondents. The results complement Tshitangano and Tosin (2016) in a study in South Africa that established that alcohol was the most abused substance that led to the respondents failing to participate in school activities thus enhancing concern from parents and guardians.

With regard to who had personally attempted to stop substance use but failed, alcohol and cannabis had the highest number of respondents trying to stop. Alcohol had 102 users while cannabis had 70 users trying to control use. Meanwhile, tobacco had 62 users attempting to cut down. The findings complement Maimuna's (2019) study which examined the levels of substance use disorder among women in Nigeria. It was established that a high number of women had attempted to quit the practice of substance abuse with varying results.

Finally, on the context of severity assessment score, the results show that most of the respondents had a moderate risk of health and other problems associated with their current substance use. The results agreed with Makau (2022) study on prevalence of substance use and disorder in Kitui County. The findings revealed that prevalence of substance disorder was at 45% with most patients having moderate substance use disorder.

5.5 Relationship between Clinical Depression and Substance Use Disorder

The third specific objective was to establish the relationship between clinical depression and substance use disorder, correlation test was conducted. The results indicated that there was a strong linear correlation between clinical depression and substance use disorder (0.415). This means that a positive and moderate relationship exists between clinical depression and substance use disorder. The results agreed with Mwangi's (2021) findings in Kenya which indicated that substance use disorder had a strong correlation with both clinical depression in women.

Additionally, results from a Pearson Correlation test done to test the relationship of different demographic characteristics showed that age had a positive correlation value of 0.215 and the p value was less than 0.05. In addition, marital status had 0.221, number of children had 0.219, and level of education had 0.183 while income had 0.301. All these demographic aspects had p value of less than 0.05. This shows that all the demographic aspects had a positive correlation with substance abuse. The results agreed with Rao et al. (2020) findings in Turkey that there was a positive correlation between demographic factors and substance use disorders. The results also agreed with findings in a related study in Kenya by Mwangi (2021) that clinical depression had a strong correlation with both substance abuse among drug-using females and live in unofficial urban settlements in Nairobi County. This shows that a strong nexus exists between clinical depression and substance use disorder among women.

Further, the results showed that the relationship between clinical depression and substance use disorder showed positive and linear significant relationship ($\beta=0.262$, T-value =1.232, $p=0.002<0.05$). This implies that one unit change in this relationship resulted in 26.2% increase in substance use disorder among women in rehabilitation centres. The results therefore indicated that the null hypothesis was rejected because results showed that there was a significant relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County.

These results support the findings by McHugh et al. (2020) in USA that established that substance use disorder was positively and significantly associated with subsequent clinical depressive symptoms. The results support Malval (2020) in a study in USA that revealed that presence of significant and positive effect of clinical depression as a result of substance use disorder among women. The results complemented Iheanacho et al. (2022) findings in Kenya

that showed that significant association existed between clinical depression and substance use disorder in adult women.

However, the results were divergent with findings by Shim et al. (2020) in a study in Korea that established that there was no significant relationship between substance use disorder and major clinical depressive disorder behaviours among women. These results complement McHugh et al. (2020) findings among women in USA that both substance use disorder and perceived stress among women in USA had strong association with subsequent depressive symptoms. The results also support the findings by Rao et al. (2020) in a study in USA using women, aged 17 to 19 years, that major depression and substance use disorders during follow-up period was mostly common in people with a history of previous major depressive disorder or substance abuse disorders. This implies that clinical depression among women in rehabilitation centres is a signature to substance abuse.

5.6 Revisiting of Conceptual Framework

The study tried to establish a relationship between clinical depression and substance use disorder among women in the Nairobi County rehabilitation centres. The findings of this research indicate a relationship between clinical depression and substance use disorder. This implies that clinical depression will have an effect on substance use disorder and substance use disorder will also cause an effect on clinical depression. With the findings, it is possible to say that our two variables in the study are in a relationship as shown by the conceptual framework below.

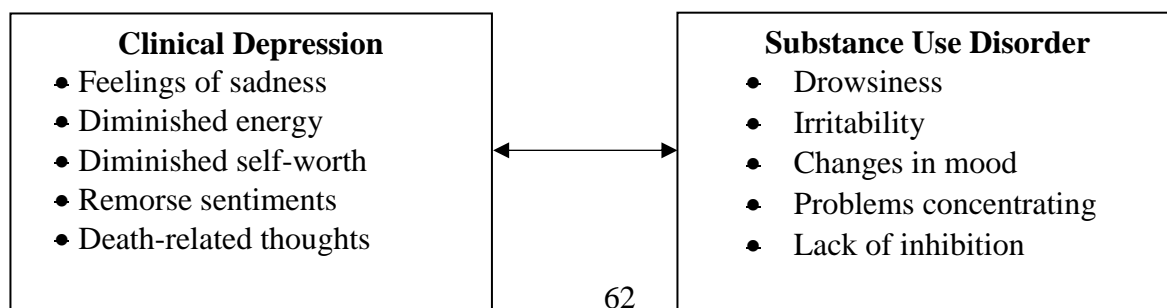


Figure 5. 1 New conceptual framework

5.7 Summary of the Chapter

The chapter has presented a discussion on the results of the data collected. This was done as per the three specific objectives of the study. These were to determine the level of clinical depression among women; to evaluate the level of substance use disorder among women and to establish the association between clinical depression and substance use disorder among women in rehabilitation centres. The chapter has also presented the results of the hypothesis testing. The next chapter presents a summary and conclusions of the study.

CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the conclusions, recommendations and limitations of the study. The conclusions are based on research findings.

6.2 Summary

6.2.1 Level of Clinical Depression among Women in Rehabilitation Centres

The analysis of the level of clinical depression as per the socio-demographic characteristics of the respondents indicated that in terms of age, 73% at the age bracket of 26-35 years had a history of clinical depression. Another 59% at the age bracket of 36-45 years also had clinical depression. This shows that women below 35 years had higher levels of clinical depression compared to the other age groups. In terms of marital status, 70% separated respondents and another 57% single respondents had a history of clinical depression. This shows that family instability was a catalyst to many women in rehabilitation centers succumbing to clinical depression.

In addition, 67% respondents with more than three children reported history of clinical depression. This shows that family size was a stressor to women in rehabilitation centers and contributed significantly to clinical depression. Further, 53% of the respondents who had attained secondary education reported clinical depression. This showed that low levels of education sometimes led women to succumb to clinical depression as they did not possess the requisite knowledge to deal effectively with substance use. A total of 64% of self-employed respondents reported having clinical depression while 54% of employed respondents also had clinical depression. This means that women without secure employment or those in unstable employment had a higher tendency to succumb to clinical depression.

6.2.2 Level of Substance Use among Women in Rehabilitation Centres

A total of 77% of the respondents reported a history of substance use while 82% reported substance use in the last three months. In addition, 43% of respondents had a weekly desire to use alcohol, 33% had daily/almost daily desire to use tobacco while 38% had the desire to use cannabis. Further, 53% alcohol users had experienced these problems weekly, 43% had tobacco problems on daily/almost daily basis while 47% had cannabis related challenges on daily/almost daily basis.

Alcohol had the highest number of respondents (136) who received concerns over substance use. This was followed by tobacco with 113 respondents while cannabis had 100 respondents. In addition, alcohol and cannabis had the highest number of respondents trying to cut down. Alcohol had 102 users while cannabis had 70 users trying to control use. Meanwhile, tobacco had 62 users attempting to cut down. On the severity assessment score, the results show that most of the respondents had a moderate risk of health and other problems associated with their current substance use.

6.2.3 Relationship between Clinical Depression and Substance Use Disorder

The results indicated that there was a strong linear correlation between clinical depression and substance use disorder (0.415). This means that a positive and moderate relationship exists between clinical depression and substance use disorder. Results from a Pearson Correlation test done to test the relationship of different demographic characteristics showed that all the demographic aspects had a positive correlation with substance abuse. The results of hypothesis testing showed that the relationship between clinical depression and substance use disorder showed positive and linear significant relationship ($\beta=0.262$, T-value =1.232, $p=0.002<0.05$). The results therefore indicated that the null hypothesis was rejected because results showed

that there was a significant relationship between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County.

6.3 Conclusions

6.3.1 Level of Clinical Depression among Women in Rehabilitation Centres

The findings indicated that women below 35 years had higher levels of clinical depression compared to the other age groups. In addition, demographic factors such as marital status, age, level of education, income levels among others highly predisposed women to clinical depression. This led to the conclusion that family instability factors were a catalyst to many women in rehabilitation centers succumbing to clinical depression.

6.3.2 Level of Substances Use among Women in Rehabilitation Centres

The findings indicated that alcohol was the most substance used by the majority of the respondents followed by cannabis and tobacco. Alcohol was the substance that led majority of users to have societal problems and also concern from family and friends. Alcohol and cannabis had the highest number of respondents trying to stop their usage. This led to the conclusion that alcohol and cannabis are the most substances used by women in rehabilitation centers. It is also concluded that most of the respondents had a moderate risk of health and other problems associated with current substance use.

6.3.3 Relationship between Clinical Depression and Substance Use Disorder

The results showed that there was a strong linear correlation between clinical depression and substance use disorder. In addition, results of hypothesis testing showed that the relationship between clinical depression and substance use disorder is positive and a linear significant relationship. This led to the conclusion that there was a positive significant relationship

between clinical depression and substance use disorder among women in rehabilitation centres in Nairobi County.

6.4 Recommendations

6.4.1 Level of Clinical Depression among Women in Rehabilitation Centres

Majority of the women in rehabilitation centres had moderate clinical depression levels. The study recommends that early identification and treatment of women under depressive symptoms may help in preventing moderate and severe depression among women in rehabilitation centres. This is because early identification and treatment has more potential chances for recovery.

6.4.2 Level of Substances Use among Women in Rehabilitation Centres

Most of the respondents abused alcohol. This is because the most consumed product in Kenya is alcohol. This is in line with previous findings that alcohol, tobacco and cannabis are the most harmful drugs according to Kenyan health care participants. The study recommends that stakeholders in mental health and substance abuse, NGOs and other stakeholders should put effort in curbing, regulating and controlling the proliferation of cheap alcoholic beverages.

6.4.3 Relationship between Clinical Depression and Substance Use Disorder

The relationship between clinical depression and substance use disorder showed positive and linear significant relationship. This study recommends to the society the necessity for understanding the existence of the association between clinical depression, and substance use especially in stressful and unprecedented situations such as COVID-19. Maintaining social contact and fostering social relationships during incarceration can reduce the psychological impact of drug use and facilitate decision-making regarding drug use.

6.5 Areas for Further Research

For comparison, the researcher suggests that a study should be conducted in other Kenyan counties as this study focused only on the relationship between clinical depression and substance use disorder in Nairobi County. Again the researcher suggests a similar study to be conducted on the integrated treatment of clinical depression and substance abuse in men in other centres in Nairobi County or other counties in Kenya.

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APPENDICES
APPENDIX I: CONSENT FORM

**TOPIC: Relationship between Clinical Depression and Substance Use Disorder among
Women in Rehabilitation Centres in Nairobi County, Kenya**

Researcher: Karen Mwangi (Reg. No. YS79/00007/2021)

Introduction

This consent form is aimed at providing you with the necessary information you require to participate in this study. It enables you to have the freedom to ask questions related to the purpose of the study, the need for your participation in terms of potential risks and benefits, your right for voluntary participation and related information. The moment you are satisfied in our answers to your queries, you hold the right to decision on your participation in participating in the study. For the authenticity of your participation, kindly sign this consent form. Your voluntary participation should be guided by the following;

1. It is voluntary to participate in the study
2. It is lawful for you to withdraw from the study at any juncture without providing reasons for this step.

Participant's signature

Yours,

Researcher,

Karen Mwangi

0721803569

**APPENDIX II: QUESTIONNAIRE ON PARTICIPANTS' DEMOGRAPHIC
PROFILES**

Please respond to the following questions as best you can by checking the appropriate response.

Section A: General Information

1. Age of participant (please put a tick)

16-25 26-35 36-45

46 – 55 56 – 65 Above 65

2. Marital status

Single Separated Divorced

Widow Other

3. Number of children

None One Two Three

Specify Other

4. Level of education

Primary Secondary Tertiary

Graduate Specify other.....

5. What do you do to earn your income?

Self-employed Employee Others.....

**Section B: The Patient Healthcare Questionnaire (PHQ-9) (Kroenke et al., 2001)
(Depression)**

(Use √ to indicate your answer)

Over the last two weeks, how often have you been bothered by any of the following problems		Not all	Several days	More than half the days	Nearly every day
a)	Little interest or pressure in doing things	0	1	2	3
b)	Feeling down, depressed or hopelessness	0	1	2	3
c)	Trouble falling or staying asleep/ sleeping too much	0	1	2	3
d)	Feeling tired or having little energy	0	1	2	3
e)	Poor appetite or over-eating	0	1	2	3
f)	Feeling bad about yourself/ you are a failure/ have let your family down	0	1	2	3
g)	Trouble in concentrating on things such as reading newspaper or watching TV	0	1	2	3
h)	Moving or speaking too slowly for others to notice/ being fidgety and moving rapidly than usual	0	1	2	3
i)	Thoughts that you are better dead or hurting yourself in some ways	0	1	2	3
Column totals					
Total scores					

SECTION C: ASSIST (WHO V3.0)

Thank you for agreeing to take part in this brief interview about alcohol, tobacco products and other drugs. I am going to ask you some questions about your experience of using these substances across your lifetime and in the past three months. These substances can be smoked, swallowed, snorted, inhaled, injected or taken in the form of pills (show drug card). Some of the substances listed may be prescribed by a doctor (like amphetamines, sedatives, pain medications). For this interview, we will not record medications that are used as prescribed by your doctor. However, if you have taken such medications for reasons other than prescription, or taken them more frequently or at higher doses than prescribed, please let me know. While we are also interested in knowing about your use of various illicit drugs, please be assured that information on such use will be treated as strictly confidential.

Question 1

(If completing follow- up please cross check the patient’s answers with the answers given for Q 1 at baseline. Any differences on this question should be queried)

In your life, which of the following substances have you ever used? (NON-MEDICAL USE ONLY)	No	Yes
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3
d. Cocaine (coke, crack, etc.)	0	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3
j. Other - specify:	0	3

Question 2

If "No" to all items, stop interview If "Yes" to any of these items, ask Question 2 for each substance ever used.

In the past three months, how often have you used the substances you mentioned (FIRST DRUG, SECOND DRUG, ETC)?	Never	Once or Twice	Weekly	Monthly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6

d.	Cocaine (coke, crack, etc.)	0	2	3	4	6
e.	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	2	3	4	6
f.	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
g.	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	2	3	4	6
h.	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	2	3	4	6
i.	Opioids (heroin, morphine, methadone, codeine, etc.)	0	2	3	4	6
j.	Other - specify:	0	2	3	4	6

If "Never" to all items in Question 2, skip to Question 6.

Question 3

During the <u>past three months</u> , how often have you had a strong desire or urge to use (<i>FIRST DRUG, SECOND DRUG, ETC</i>)?		Never	Once or Twice	Weekly	Monthly	Daily or Almost Daily
a.	Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3	4	5	6
b.	Alcoholic beverages (beer, wine, spirits, etc.)	0	3	4	5	6
c.	Cannabis (marijuana, pot, grass, hash, etc.)	0	3	4	5	6
d.	Cocaine (coke, crack, etc.)	0	3	4	5	6
e.	Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3	4	5	6
f.	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3	4	5	6
g.	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3	4	5	6
h.	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3	4	5	6
i.	Opioids (heroin, morphine, methadone, codeine, etc.)	0	3	4	5	6
j.	Other - specify:	0	3	4	5	6

Question 4

During the <u>past three months</u> , how often has your use of (<i>FIRST DRUG, SECOND DRUG, ETC</i>) led to health, social, legal or financial problems?		Never	Once or Twice	Weekly	Monthly	Daily or Almost Daily
a.	Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	4	5	6	7
b.	Alcoholic beverages (beer, wine, spirits, etc.)	0	4	5	6	7
c.	Cannabis (marijuana, pot, grass, hash, etc.)	0	4	5	6	7

d. Cocaine (coke, crack, etc.)	0	4	5	6	7
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	4	5	6	7
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	4	5	6	7
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	4	5	6	7
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	4	5	6	7
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	4	5	6	7
j. Other - specify:	0	4	5	6	7

Question 5

During the <u>past three months</u> , how often have you failed to do what was normally expected of you because of your use of (FIRST DRUG, SECOND DRUG, ETC)?	Never	Once or Twice	Weekly	Monthly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	5	6	7	8
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	5	6	7	8
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	5	6	7	8
d. Cocaine (coke, crack, etc.)	0	5	6	7	8
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	5	6	7	8
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	5	6	7	8
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	5	6	7	8
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	5	6	7	8
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	5	6	7	8
j. Other - specify:	0	5	6	7	8

Ask Questions 6 & 7 for all substances ever used (i. e. those endorsed in Question 1)

Question 6

Has a friend or relative or anyone else <u>ever</u> expressed concern about your use of (FIRST DRUG, SECOND DRUG, ETC.)?	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months

a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, h ash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

Question 7

Has a friend or relative or anyone else <u>ever</u> expressed concern about your use of (FIRST DRUG, SECOND DRUG, ETC.)?	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, h ash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

How to calculate a specific substance involvement score

For each substance (labeled a. to j.) add up the scores received for questions 2 through 7 inclusive. Do not include the results from either Q 1 or Q 8 in this score. For example, a score for cannabis would be calculated as: Q 2c + Q 3c + Q 4c + Q 5c + Q 6c + Q 7c

Note that Q 5 for tobacco is not coded, and is calculate d as: Q 2 a + Q 3 a + Q 4 a + Q 6 a + Q 7 a

The type of intervention is determined by the patient's specific substance involvement score

	Record specific substance score	no intervention	receive brief intervention	more intensive treatment *
a . tobacco		0 – 3	4 – 26	27 +
b. alcohol		0 – 10	11 – 26	27 +
c. cannabis		0 – 3	4 – 26	27 +
d. cocaine		0 – 3	4 – 26	27 +
e. amphetamine		0 – 3	4 – 26	27 +
f. inhalants		0 – 3	4 – 26	27 +
g. sedatives		0 – 3	4 – 26	27 +
h. hallucinogens		0 – 3	4 – 26	27 +
i. opioids		0 – 3	4 – 26	27 +
j. other drugs		0 – 3	4 – 26	27 +

Thank you

APPENDIX V: ORIGINALITY REPORT

Association between Clinical Depression and Substance Use Disorder among Women in Rehabilitation Centres in Nairobi, Kenya

ORIGINALITY REPORT

15%	13%	6%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	erepository.uonbi.ac.ke Internet Source	1%
2	nacada.go.ke Internet Source	1%
3	Submitted to Mount Kenya University Student Paper	1%
4	Submitted to Kenyatta University Student Paper	<1%
5	ajernet.net Internet Source	<1%

Appendix VI

LIFEBRIDGE REHABILITATION CENTRE

LOCATED AT NORTH BYPASS MARURUI

P.O. BOX 1079-00600- NAIROBI
TEL: +254 725 133 444/ +254 732 313 173
EMAIL: lifebridgeke@gmail.com

DATE; 18TH JANUARY, 2024

TO WHOM IT MAY CONCERN

Dear Sir/ Madam,

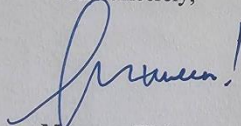
RE: RECOMMENDATION FOR KAREN MUTHONI MWANGI

We recommend that the above named student did research at our institution on her topic “**association between clinical depression and substance use disorder among women**” she was professional with her work and she received good support from our staff during her research.

I recommend her as a good upcoming professional in the field of psychology.

Kindly assist her in any way to achieve her goal.

Yours sincerely,



Maureen Thinwa
Head of Counseling



**JOSEPH KANGETHE REHABILITATION
CENTRE**

Located in Kilimani – Nairobi/ P.o. Box - private Bag
Tel: +254 735 550000

DATE; 18TH JANUARY, 2024

TO WHOM IT MAY CONCERN

Dear Sir/ Madam,

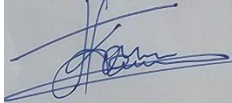
RE: **RECOMMENDATION FOR KAREN MUTHONI MWANGI**

We recommend that the above named student did research at our institution on her topic “**association between clinical depression and substance use disorder among women**” she was professional with her work and she received good support from our staff during her research.

I recommend her as a good upcoming professional in the field of psychology.

Kindly assist her in any way to achieve her goal.

Yours sincerely



John Kamau
Head of Psychologists



EDEN HOUSE REHABILITATION CENTRE

P.O. BOX 5524-00100 NAIROBI
TEL: 0726 552476

DATE: 12TH JANUARY, 2024

TO WHOM IT MAY CONCERN

Dear Sir/ Madam,

RE: **RECOMMENDATION FOR KAREN MUTHONI MWANGI**

The above named student did research at our institution on her topic "**association between clinical depression and substance use disorder among women**" she was professional with her work and she received good support from our staff during her research.

I recommend her as a good upcoming professional in the field of psychology.

Kindly assist her in any way to achieve her goal.

Yours sincerely



BERNARD KARUNGARU
TREATMENT CO-ORDINATOR
TE: 0755410004



A Choice to Live and Live Abundantly

P O BOX 1207, 00502,
NAIROBI, KENYA
Tel: +254 20 529 5166
Email: nairobioutreach@yahoo.co.uk

December 6, 2023

To Whom It May Concern

Dear Sir/Madam,

RE: RECOMMENDATION FOR KAREN MUTHONI MWANGI

It is my pleasure to recommend Ms. Karen Muthoni Mwangi of Admission number **YS79/00007/2021** from Tangaza University College that she did research at our Institution for the fulfilment of her Master of Arts in counselling psychology. She conducted her research in the topic of **Association between clinical Depression and Substance use Disorder among Women** in our institution. She received good support from our staff, and she carried her research well without any problems.

I recommend that any further assistance for her may be considered and if you need any more information, please do not hesitate to reach out to us. Thank you for your consideration.

Yours Sincerely,

Stephen Horace Angira

Executive Director – NOSET

0725796306





**SHEKOW TREATMENT &
REHABILITATION CENTRE**

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Eastleigh- Nairobi

hokowrehabilitationcentre@gmail.com

Date: 18/01/2024

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

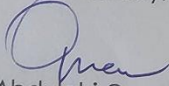
Re: RECOMMENDATION FOR KAREN MUTHONI MWANGI

It is our pleasure to recommend Ms. Karen Muthoni Mwangi from Tangaza University College that she did her research at our institution for the fulfillment of her Masters of Arts in counseling Psychology. She did her research in the topic of **association between clinical depression and substance use disorder among women.**

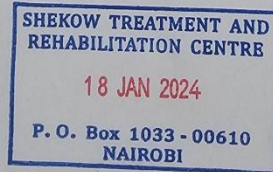
She received good support from our staff, and she carried her research well without any problems.

I recommend that any further assistance for her may be considered.

Yours sincerely,



Abdulahi Omar
Psychologist Manager





Mustakim
Rehabilitation Center
Eastleigh Section 4, Mama Fatuma Strt., Near Oromo Masjid
P.O. Box 8726 - 00610

07/12/2023

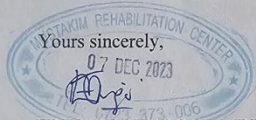
TO WHOM IT MAY CONCERN

Dear sir/madam,

RE: RECOMMENDATION FOR: KAREN MUTHONI MWANGI ADM NO. YS79/00007/2021

The above named student did research at our institution on her topic "**association between clinical depression and substance use disorder among women**". She was professional in every aspect and helped our staff and clients by shedding some light on the topic.

I recommend her as a good upcoming professional in the field of psychology. Kindly assist her in any way to achieve her goal.



EDWARD NJOROGE MBURU

TEAM LEADER, TREATMENT AND COUNSELING.

**NEW LIFE REHABILITATION & COUNSELING
CENTRE**

TEL: + 254 722 965722
EMAIL: newliferehabs@yahoo.com
newliferehab2015@gmail.com

DATE: 18TH JANUARY, 2024

TO WHOM IT MAY CONCERN

Dear Sir/ Madam,

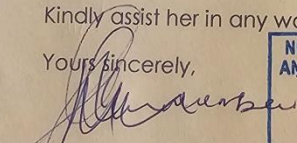
RE: **RECOMMENDATION FOR KAREN MUTHONI MWANGI**

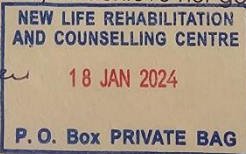
The above named student did research at our institution on her topic "**association between clinical depression and substance use disorder among women**" she was professional with her work and she received good support from our staff during her research.

I recommend her as a good upcoming professional in the field of psychology.

Kindly assist her in any way to achieve her goal.

Yours sincerely,


Misheck Mutembei
Head of Psychologist



**BRIGHTSIDE DRUG ABUSE REHABILITATION
& TREATMENT CENTRE**

Located along Kirawa road (Musuva close) Kitisuru, Nairobi
Email: brightsidedart@yahoo.com
Tel: 0722847130

DATE: 24TH JANUARY, 2024

TO WHOM IT MAY CONCERN

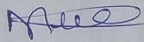
Dear Sir / Madam,

RE: RECOMMENDATION FOR KAREN MUTHONI MWANGI

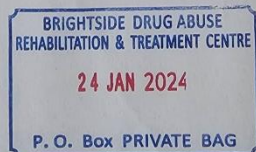
We recommend the above named student that she did research at our institution on her topic "**association between clinical depression and substance use disorder among women**" she was professional and carried her work well.

I recommend you assist her in any way to achieve her goals.

Yours sincerely,



MERCY MWENDE
COUNSELOR



PREMIER REHABILITATION CENTRES LTD

Located at Off Second Parklands Avenue, Msanaka Road
Tel: +254713030397
Email: thehumangarage.com

Date: 18/01/2024

TO WHOM IT MAY CONCERN

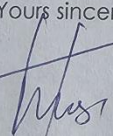
Dear Sir/Madam,

Re: **RECOMMENDATION FOR KAREN MUTHONI MWANGI**

We recommend Ms. Karen Muthoni Mwangi from Tangaza University College that she did her research at our institution for the fulfillment of her Masters of Arts in counseling Psychology on the topic of ***association between clinical depression and substance use disorder among women.***

I recommend that any further assistance for her may be considered.

Yours sincerely,


Dr. Hamisi Kote
Psychologist



THE SERENITY PLACE REHABILITATION CENTRE

P.O. BOX 42111-00100 NAIROBI
EMAIL:serenityplace2013@gmail.com
Tel: 0722 970 951, 0706 343 985

Date: 18TH JAN 2024

TO WHOM IT MAY CONCERN

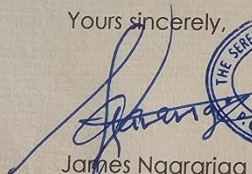
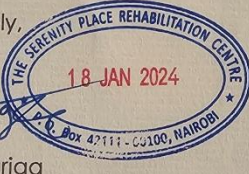
Dear Sir/ Madam,

RE: **RECOMMENDATION FOR KAREN MUTHONI MWANGI**

The above named student did research at our institution on her topic "**association between clinical depression and substance use disorder among women**" she was professional with her work and she received good support from our staff during her research.

I recommend her for any other assistance

Yours sincerely,

James Ngarariga
Psychologist Representative