PREVALENCE OF PSYCHIATRIC COMORBIDITY, ASSOCIATED SOCIO-DEMOGRAPHIC FACTORS IN PATIENTS WITH ALCOHOL USE DISORDER AT MATHARI NATIONAL TEACHING AND REFERRAL HOSPITAL CENTRE FOR SUBSTANCE ABUSE TREATMENT

DENIS ADALLA

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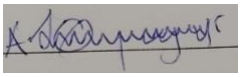
DECLARATION

I declare that this thesis is a product of my original work. Any reference to other scholars' work has been acknowledged and referenced accordingly. I would also like to affirm that this thesis project has not been submitted to any learning institution for any academic award.

DENIS ADALLA

H58/38136/2020

Signature:  Date: 14/07/2023

Declaration by Supervisors

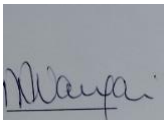
This thesis has been submitted for approval with our backing as the university's supervisors.

Prof. Mary Wangari Kuria

MBChB, MMED Psychiatry, PhD Psychiatry

Professor of Psychiatry

University of Nairobi.

Signature:  Date: 14/07/2023

Roselyne A. Okoth

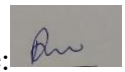
BSc. Psychol, MSc. Clinical Psychology

PhD Clinical Psychol. (candidate)

Lecturer Department of Psychiatry

Faculty of Health Sciences

University of Nairobi

Signature:  Date:14/07/2023

DEDICATION

I would like to dedicate this thesis to my family, friends, and all those impacted by mental illness.

ACKNOWLEDGMENT

First, I would like to thank God for His never-ending love and grace. I would also like to express my warmest gratitude to my supervisors for their continued support throughout the development of this proposal. Further, I am indebted to my friends and family for their love, support, and prayers. Their love and support have sustained me throughout my academic journey.

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immuno Deficiency Syndrome
AUD	Alcohol Use Disorder
AUDIT	Alcohol Use Disorders Identification Inventory
BAI	Beck Anxiety Inventory
BDI	Beck Depression Inventory
CSAT	Center for Substance Abuse Treatment
CDC	Center for Disease Control and Prevention
DSM-V	Diagnostic Statistical Manual
HIV	Human Immunodeficiency Virus
HRQoL	Health-Related Quality of Life
MDD	Major Depressive Disorder
M.I.N.I 5.0	Mini-International Neuropsychiatric Interview Version 5.0
MNTRH	Mathari National Teaching and Referral Hospital
NIAAA	National Institute on Alcohol Abuse and Alcoholism
UoN	University of Nairobi
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Alcohol use disorder: Is a medical condition characterized by an impaired ability to stop or control alcohol use despite adverse social, occupational, or health consequences (NIAAA, 2021).

Anxiety: Excessive worry and apprehensive expectations, occurring more days than not for at least 6 months, about a number of events or activities (DSM-V).

Co-morbidity: Refers to the simultaneous presence of two or more medical conditions in a patient.

Depression: Refers to a mental health disorder that is characterized by persistent feelings of sadness and loss of interest in everyday activities (Maj, 2011).

ABSTRACT

Background: Alcohol use disorder is a major contributor of the increasing morbidity and mortality rates across the world. It has been estimated, for example, that AUD contributes approximately 3.3 million deaths in the world each year (NCDAS, 2022). Available international studies on AUD have linked its onset, progression, and relapse to psychiatric comorbidities (Pavkovic et al., 2018; Jung et al., 2020). However, information related to the contribution of psychiatric comorbidities to AUD in Kenya is limited. The paucity of information on the incidence and patterns of psychiatric comorbidities in AUD patients in Kenya warrants the proposed study.

Objective: The objective of the study was to determine the prevalence of psychiatric comorbidity and associated socio-demographic factors in AUD patients receiving treatment at MNTRH's CSAT.

Methodology: A cross-sectional study was conducted to determine the prevalence and the socio-demographic factors that are associated with psychiatric disorders in a convenience sample of 202 AUD patients who were attending MNTRH'S CSAT program for treatment between 1st April 2023 and 31st June 2023. A socio-demographic survey, a health history questionnaire, and the Mini International Neuropsychiatric Interview (MINI) version 5.0 tool were used to gather data for the study. The MINI 5.0 tool was used to assess the presence or absence of seven selected psychiatric disorders, which include major depressive episode, panic disorder, obsessive compulsive disorder, post-traumatic stress disorder, generalized anxiety disorder, (Hypo)manic episode and psychotic disorders. Data from the survey was coded into **R-Studio version 2023.06.1-524** statistical software for anlysis. For data analysis purposes, the participants were categorized into two groups, the co-morbid group and the non-comorbid group. Participants were included in the co-morbid group if they have co-occurring AUD and selected psychiatric disorders. The non-comorbid group comprised of AUD patients who have no indication of selected psychiatric disorders.
The prevalence of selected psychiatry comorbidity in AUD patients attending MNTRH CSAT for treatment was summarized descriptively using frequencies and percentages. Socio-demographic characteristics associated with psychiatric comorbidities in AUD patients attending MNTRH's CSAT was summarized into frequencies and percentages using n x 2 contingency tables; where n represented the categories within the categorical independent variables. Variables measured on a continuous scale were summarized in means and standard deviations.
Bivariate analysis involving each of the psychiatric comorbidities against the socio-demograpgic factors was done through Fishers' and Chi-Square tests. Furthermore, multivariate logistic regression models were fitted to control for the effects of potential modifying factors. Stepwise model selection process was used in determining the variables to be included in the model. The final parsimonious models were determined through comparison of the Akaike Information Criteria (AIC) value in each analysis. The model with the least AIC value was selected as the final model. Significance testing was done at 95% confidence level.

Results: The prevalence of Major Depressive Episodes in AUD patients was 74.3% and was associated with a family history of alcohol use, unemployment and low income. The prevalence of hypomanic episodes in AUD patients was 27.7% and was associated with a family history of alcohol use. Psychotic disorders in AUD patients prevalence was 72.3% and was associated with male gender and an earlier age alcohol use debut.

The prevalence of GAD in AUD patients was 49.5% and was associated with female gender
The prevalence of OCD in AUD patients was 29.7% and was associated with unemployment and low income
The prevalence of panic disorders in AUD patients was 21.3% and was associated with unemployment and low educational attainment
The prevalence of PTSD in AUD patients was 44.6% and was associated with low income

Conclusions: There were patients with multiple psychiatric comorbidities further contributing to the burden and worsening of outcomes in AUD. Several factors were associated with increased risk of developing comorbid psychiatric disorders in AUD patients including a family history of alcohol use, unemployed status, low income, low level of education and female gender. Further, health agencies can target these groups with comprehensive prevention and treatment programs to reduce the burden of disease comorbidity while designing management protocols

CHAPTER ONE: INTRODUCTION

1.1 Background

Alcohol use disorder (AUD) is a chronic mental disorder that is characterized by excessive alcohol intake (Carvalho et al., 2019). The disorder is a major contributor of morbidity and mortality burden across the world. It impairs decision making and neurological function and increases the risk of injuries, violence, and risky sexual behaviors. It also contributes to the development of chronic diseases including high blood pressure, heart disease, stroke, liver disease, pancreatitis, and cancers, which attract substantial healthcare costs (Rehm et al., 2010). Further, it has been estimated that AUD contributes approximately 3.3 million deaths in the world each year (NCDAS, 2022).

Investigations about the potential causes of alcohol dependence have yielded mixed results. One study determined the causes of AUD among firefighters. The authors utilized a sample of 7,151 Korean firefighters in their study. They found that perceived work-related stress and exposure to traumatic situations contributed to AUD (Kim, Park, & Kim, 2018). Besides trauma and stressful situations, AUD development and relapse have been linked to family history of alcoholism, childhood maltreatment, disadvantageous life circumstances, poor life satisfaction, and peer pressure (Monaci, Scacchi, Posa, & Trentin, 2013).

While an overwhelming number of studies have linked AUD to genetic, psychological, and environmental factors, others have found that underlying psychiatric disorders are significant predictors of AUD. In the study by Pavkovic et al. (2018), for example, the authors found that 24.7 percent of the individuals with AUD suffered from depression. Similarly, Jung et al. (2020) found that patients with high-intensity drinking problems had co-occurring psychiatric disorders such as

substance use disorders, and mood, personality, and post-traumatic stress disorders.

Investigations into the co-occurrence of AUD and other psychiatric disorders have yielded mixed results. Some studies have found, for example, that psychiatric disorders precede the onset of AUD and that most AUD patients often consume alcohol to suppress negative emotions, cognitive control deficits, impulsivity, and affective instability symptoms of diverse mental health conditions (Bravo et al., 2018). Other studies have established that AUD causes impulsive behaviors, negative affect, and weakened self-regulation that could induce psychosis.

Psychiatric comorbidity in AUD patients is often associated with adverse outcomes. These outcomes vary according to the types of psychiatric comorbidity. Existing studies have found, for example, that AUD patients with anxiety and depression often experience severe illness and worse prognosis, disability, treatment discontinuation, poor treatment outcomes, worsened physical functioning, and life dissatisfaction (Agabio, Trogu, & Pani, 2018). In one study that determined the clinical outcomes of patients with multiple psychiatric disorders, the authors found that AUD patients with comorbid social anxiety disorder had a higher prevalence of developing major depressive disorder. Additionally, they had poor treatment compliance and exhibited higher rates of suicidal thoughts and plans as compared to their counterparts who did not have social anxiety disorder (Oliveira et al., 2018). Like Oliveira et al. (2018), Onaemo, Fawehinmi, and D'Arcy (2022) found that individuals with both AUD and depression were nine to sixteen times more likely to commit suicide as compared to those who suffered from AUD alone. Some studies have also found that co-occurring AUD and anxiety was associated with increased tendency of relapse, which was motivated by the participants' desire to manage, cope, or alleviate anxiety symptoms (Oliva et al., 2018; Anker et al., 2016; Rudenstine, Espinosa, & Kumar, 2020). Other studies have

also found that people with co-occurring schizophrenia and AUD report higher rates of hospitalization, homelessness, violent behavior, suicidality, and incarceration as compared to their counterparts with a singular diagnosis of schizophrenia.

The effects of co-occurring AUD and other psychiatric disorders on pre-existing illnesses have also been determined. In the study by Gold et al. (2020), for example, the authors observed the outcomes of 11,403 patients who underwent total knee arthroplasty in a selected facility in the United States. It was observed that 18 percent, 4 percent, and 0.6 percent of the patients had substance abuse disorder, alcohol use disorder, and depression, respectively. The authors found that as compared to participants without comorbidities, subjects with co-occurring SUD, AUD, and depression were four times more likely to have postoperative complications such as mechanical failures, periprosthetic joint infection, aseptic loosening, deep vein thrombosis, and cellulitis. In Gold et al.'s (2020) view, patients with SUD, AUD, and depression were at a greater risk of postoperative complication and, as such, there was a greater need to target the groups with education programs.

Another study explored the effects of AUD and psychiatric disorders on the clinical outcomes of people living with HIV/AIDS. It was observed that AUD decreased help seeking; increased involvement in risky sexual behaviors; and reduced adherence to antiretroviral treatment drugs, which is associated with a decline in CD4 cells, rapid disease progression, and increased susceptibility to opportunistic diseases (Necho, Belete, & Getachew, 2020).

Evidence of adverse outcomes associated with psychiatric comorbidity demonstrates the importance of screening for psychiatric disorders in AUD patients, because timely detection and

treatment will improve treatment outcomes, enhance patients' quality of life, and reduce healthcare costs.

1.2 Statement of the Problem

Alcohol dependence is a growing public problem in Kenya. Available statistics have shown, for example, that 13 percent of Kenyans have developed alcohol dependency (NACADA, 2022). Existing international studies have established that underlying psychiatric disorders are significant predictors of AUD (Pavkovic et al., 2018; Jung et al., 2020). In Kenya, there is a paucity of information on the prevalence of psychiatric comorbidities in patients with alcohol dependence disorder. This study bridges the information gap by investigating the prevalence and socio-demographic factors that are associated with psychiatric comorbidities in AUD patients presenting to the Mathari National Teaching and Referral Hospital's Centre for Substance Abuse Treatment. The study highlighted the burden of psychiatric disorders among these patients. Knowledge from this study will inform the development of comprehensive prevention and treatment programs aimed at helping patients with multiple psychiatric disorders.

1.3 Justification of the Study

Knowledge about the prevalence of psychiatric disorders in AUD patients provides information about the actual burden of the diseases in the Kenyan population. Information about the socio-demographic factors that are associated with psychiatric disorders in AUD patients also help health agencies to identify groups that have a high prevalence of psychiatric comorbidities. The agencies can target these vulnerable groups with comprehensive prevention and treatment programs aimed at reducing the incidence and burden of psychiatric comorbidities in the Kenya. Findings from the study will also be a useful addition to available literature on psychiatric comorbidities in AUD

patients.

1.4 Research Questions

1.4.1 Broad Research Questions

What is the prevalence of psychiatric comorbidity and associated socio-demographic factors in AUD patients attending MNTRH Centre for Substance Abuse Treatment?

1.4.2 Specific Research Questions

1. What is the prevalence of selected psychiatric comorbidity in AUD patients attending MNTRH's CSAT?
2. What is the socio-demographic factors associated with psychiatric comorbidity in patients attending MNTRH's CSAT for treatment?
3. What is the association between selected psychiatric comorbidities with alcohol use disorder in patients attending MNTRH's CSAT?
4. What is the association of the selected psychiatric comorbidities, socio-demographic factors with AUD in patients attending MNTRH's CSAT?

1.5 Research Objectives

1.5.1 Broad Research Objective

The objective of this study is to determine the prevalence of psychiatric comorbidity and associated socio-demographic factors in AUD patients attending MNTRH Centre for Substance Abuse Treatment

1.5.2 Specific Research Objectives

1. To determine the prevalence of selected psychiatric comorbidity in AUD patients attending MNTRH's CSAT
2. To determine the socio-demographic characteristics associated with psychiatric comorbidities in AUD patients attending MNTRH's CSAT
3. To determine the association between selected psychiatric comorbidities with alcohol use disorder in patients attending MNTRH's CSAT
4. To determine the association of the selected psychiatric comorbidities, socio-demographic factors with AUD in patients attending MNTRH's CSAT

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

The current chapter reviews the results from existing studies that have been conducted to evaluate psychiatric disorders in patients with alcohol use disorder. The section consists of two major topics that discuss the type, prevalence, and predictors of psychiatric comorbidities in AUD patients.

2.1 Type and Prevalence of Psychiatric Disorders that are Comorbid with AUD

Available studies have found multiple forms of psychopathology among people with alcohol use disorder. Evidence from these studies has shown that the prevalence of these comorbidities varies according to region and type of psychiatric disorder. The current sub-section is organized according to the region where the selected studies were conducted.

2.1.1 Global Studies

A number of studies have been conducted across the world to determine the prevalence of psychiatric comorbidities among people with alcohol use disorders. The results from these studies vary across regions and disorder types.

Schizophrenia is one of the psychiatric disorders that are common among people with AUD. International studies that have determined the co-occurrence of schizophrenia in AUD have found mixed results. One of such studies analyzed 123 studies that were conducted in Australia between the years 1990 and 2017 to determine the comorbidity of schizophrenia and substance use disorders. The study found that 27.5, 26.2, 24.3, and 7.3 percent of individuals with schizophrenia had comorbid illicit drugs, cannabis, alcohol, and stimulant use disorders, respectively (Hunt et al., 2018).

Hunt et al.'s (2018) findings were comparable to those that were reported in an earlier study that was conducted in Norway by Nesvag et al. (2015). In their study, Nesvag et al. (2015) determined the prevalence of substance use among individuals who had been diagnosed with schizophrenia, bipolar disorder, and depressive disorder. It was observed that the prevalence of SUD was 25.1, 20.1, and 10.9 percent in patients with schizophrenia, bipolar disorder, and depressive disorder, respectively (Nesvag et al. 2015).

Besides schizophrenia, mood, anxiety, and depression disorders also co-occur with alcohol use disorders. One study was conducted in the Netherlands by Boschloo et al. (2011) to determine psychiatric comorbidity in patients with AUD. The study utilized a sample of 2,981 patients and found that 20.3 percent had combined AUD, anxiety, and depression.

In India, Nair, Sharma, and Das (2011) reviewed 30 AUD patients who had been admitted to a tertiary care hospital. The authors observed that 60, 70, and 30 percent of AUD patients had mild anxiety, mild depression, and moderate depression respectively.

Another study was conducted by Fuehrlein et al. (2016) in the United States to assess the burden of AUD and its psychiatric comorbidities among military veterans. A sample of 3,157 veterans who were older than 21 years was used in the study. It was observed that as compared to veterans without AUD, those with AUD were between 2.6 and 4.1 times more likely to develop mood and anxiety disorders (Fuehrlein et al., 2016).

Howe, Fisher, Atkinson, and Finn (2021) also compared the prevalence of anxiety, depression, and borderline personalities in AUD patients who had comorbid substance use disorders. The authors

utilized a sample of 671 adults who lived in the United States at the time of the study. The participants were grouped into four categories; controls, AUD-only, AUD + cannabis use disorder, and AUD + other substance use disorder. Howe et al. (2021) found that anxiety, depression, and borderline personality disorders were higher in all AUD groups as compared to the control group, which led to the conclusion that AUD was a significant predictor of comorbid psychiatric disorders.

In Serbia, Pavkovic et al. (2018) evaluated 421 subjects to assess the comorbidity of AUD and major depressive disorders. The authors found that 28.03 percent and 55.82 percent of the participants had AUD and depression, respectively. Additionally, Pavkovic et al. (2018) found that 24.7 percent of the respondents had both AUD and depression.

An identical study was conducted by Huang et al. (2020) in China. In their study, Huang et al. (2020) used a sample of 378 AUD patients that were recruited from eight psychiatric facilities across China. The authors found that out of the 378 AUD patients, 48.9 percent exhibited depressive symptoms (Huang et al., 2020).

In a recent study, Lien et al. (2022) also determined the prevalence of depression among patients who had been diagnosed with alcohol use disorder in Norwegian rehabilitation facilities. A total of 127 patients were reviewed in the study and it was uncovered that 14 percent had co-occurring major depressive disorders (MDD) (Lien et al., 2022).

Lien et al.'s (2022) findings were comparable to those reported in an earlier study that was conducted in 2015 in Denmark by Mellentin, Nielsen, Stenager, and Nielsen. The study featured a

total of 363 Danish patients who were seeking treatment for AUD. It was observed that 15.7 and 12.7 percent of the patients had co-occurring depression and anxiety, respectively (Mellentin et al., 2015).

2.1.2 Continental Studies

In Africa, very few studies have explored psychiatric comorbidity in patients with AUD. One of such studies was conducted in Nigeria by Ugochukwu, Donald, and Chukwuemeka (2016). The authors employed a sample of 470 patients with AUD and observed that 45.8 percent exhibited symptoms of depression.

A similar study was conducted in South Africa by Gabriels, Macharia, and Weich (2018). The Mini-International Neuropsychiatric Interview (MINI) was used to determine psychopathology among the study's participants. The authors reviewed 101 AUD patients and found that 61.9 and 52.4 percent had co-occurring mood and anxiety disorders, respectively.

Mohamed, Ahmad, Hassaan and Hassan (2020) also evaluated the prevalence of anxiety and depression in substance use disorder patients in Egypt. The authors utilized a sample of 100 SUD patients in their study and found that 67 percent and 72 percent had severe anxiety and severe depression, respectively.

2.1.3 Local Studies

In Kenya, a few studies have determined psychiatric comorbidity among individuals with substance use disorders. One of these studies was conducted by Ndetei et al. (2008). The study featured a sample of 691 patients who had been admitted at the Mathari Hospital for treatment.

The authors observed that 35 percent of the patients had co-occurring AUD and psychiatric disorders such as adjustment disorders, mood disorders, psychotic disorders, schizophrenia, and post-traumatic stress disorder (Ndetei et al., 2008).

Kwobah et al. (2017) also determined the prevalence of psychiatric morbidity in a community sample that was drawn from Western Kenya. The study's sample included 420 adults. The MINI diagnostic tool was used to determine psychopathology among the study's subjects. It was observed that 45 percent of the participants had at least one mental disorder. The disorders included AUD, anxiety disorder, and major depressive disorder (Kwobah et al., 2017).

In another similar study, Kibuti (2020) determined the patterns of psychiatric comorbidity among patients attending the Mathari National Teaching and Referral Hospital for treatment. The authors utilized a sample of 424 patients in the study. A socio-demographic survey and the MINI assessment tool were used to gather data for the survey. It was observed that the two most prevalent psychiatric disorders were psychotic disorders and substance use disorders. Additionally, 13.1 percent of the patients had co-occurring AUD and non-alcohol substance abuse disorder (Kibuti, 2020).

2.2 Socio-Demographic Predictors of Psychiatric Disorders in Patients with AUD

The socio-demographic factors that contribute to the co-occurrence of AUD and other psychiatric disorders have also been determined and the results have yielded mixed results. The results from these studies will be organized according to the regions where they were conducted.

2.2.1 Global Studies

In one study that was conducted in the United States, the authors determined the predictors of AUD and other psychiatric comorbidities in a sample of military veterans. It was observed that younger age, male gender, low education attainment, low household income, being single, and greater exposure to traumatic events increased the likelihood of life-time AUD and depressive disorders (Fuehrlein et al., 2016).

Similarly, in an Australian study that was conducted by Hunt et al. (2018) to assess pyschopathology among AUD patients, it was observed that young individuals and males had a higher risk of having substance use disorders as compared to their older and female counterparts.

Another similar study was conducted in China by Huang et al. (2020) to compare the socio-demographic characteristics of AUD patients who had depression with those of AUD patients who did not have depression. Like in the study that was conducted by Fuehrlein et al. (2016), Huang et al. (2020) found that as compared to subjects without depressive symptoms, those with comorbid AUD and depression were younger and had unstable marital status.

Obeid et al. (2020) also determined the factors that contributed to AUD in a Lebanese population. The authors utilized a sample of 789 Lebanese adults in their study. The authors found that alexithymia, depression, and suicidal ideation were associated with a higher risk of AUD. They also found that having a high number of children, being female, and having a high emotional intelligence lowered the risk of AUD. It was also observed that individuals with psychological difficulties such as work fatigue, low emotional intelligence, low self-esteem, high social phobia,

and high anxiety had higher Alcohol Use Disorder Identification Test (AUDIT) scores as compared to those who had a good mental well-being. Obeid et al. (2020) recommended the need to increase awareness about the triggers of AUD to reduce the prevalence of such factors and ultimately improve individuals' mental health and well-being.

Some of Huang et al.'s (2020) findings were consistent to those reported in an earlier study that was conducted in the Netherlands by Boschloo et al. (2011). In their study, Boschloo et al. (2011) found that the male gender; family history of AUD, anxiety, and depression; being single; and childhood trauma predisposed AUD patients to anxiety and depression.

Boschloo et al.'s (2011) and Huang et al.'s (2020) conclusions about the male gender being associated with higher levels of anxiety and depression, however, were disputed by Oliva et al. (2018) and Ribadier and Varescon (2019). In their study, Oliva et al. (2018) recruited 187 patients who had been admitted into an inpatient alcohol detoxification program in Italy. The authors determined gender differences in the participants' levels of anxiety and depression before and after the detoxification program. Unlike in Boschloo et al.'s (2011) and Huang et al.'s (2020) studies, Oliva et al. (2018) found that more females than males exhibited higher levels of anxiety and depression.

Similarly, Ribadier and Varescon (2019) determined the personalities, coping strategies, anxiety and depression symptoms of 122 AUD patients that were recruited from diverse alcohol detoxification centers across France. Like in the study by Oliva et al. (2018), Ribadier and Varescon (2019) found that more women than men exhibited high levels of anxiety.

Another identical study was conducted by Luitel et al. (2018) to determine the factors that correlate with depression and AUD in patients receiving healthcare services in Nepal. The authors found that the risk factors for depression and AUD varies across gender groups. It was observed that in females, low education level, low household income, and unemployment predicted depression. In males, Buddhism and unemployment predicted AUD (Luitel et al., 2018).

2.2.2 Continental Studies

The results from African studies are consistent with those reported across the world. One study, for example, was conducted by Necho, Belete, and Getachew (2020) to determine the prevalence and factors associated with AUD among people living with HIV/AIDS in Nigeria, Uganda, and South Africa. Like in the study that was conducted by Boschloo et al. (2011) in Netherlands, Necho et al. (2020) found that the male gender, family history of alcohol use, mental distress, and low income predicted AUD.

Another study was conducted by Gizaw, Amdisa, and Lemu (2020) to determine the predictors of multiple substance use among 330 university instructors in Ethiopia. The authors observed that 51.6, 81.3, and 17.3 percent of the respondents consumed khat, alcohol, and cigarettes, respectively. The study also found that living with family and having friends who abuse drugs and alcohol were significant predictors of multiple substance use disorders among the respondents (Gizaw et al., 2020).

In another earlier study, Onah et al. (2016) determined the predictors of alcohol and other drug use among pregnant women in South Africa. The authors adopted a sample of 376 pregnant women in

their study. The participants were recruited from a maternity center. It was observed that 18 percent of the participants reported using alcohol and other drugs. Out of those consuming multiple substances, 18, 19, and 22 percent had major depressive episodes, anxiety, and had suicidal ideation thoughts, respectively. The authors also found that depression, anxiety, suicidality, food insecurity, domestic violence, and past mental health issues predicted multiple substance use among the pregnant women (Onah et al., 2016).

2.2.3 Regional Studies

In Kenya, very few studies have determined the socio-demographic predictors of AUD and its related psychiatric comorbidities. One of such studies was conducted by Wando, Asito, and Aminer (2018). The authors reviewed individuals from Nyamira slums. The authors found that being divorced, separated, or widowed; being non-religious; being male; being a Muslim; and dwelling in urban areas predicted multiple substance use disorders among the study's subjects (Wando et al., 2018).

A similar study was conducted by Kamenderi et al. (2021) to assess the prevalence and predictors of multiple substance use disorders in Kenya. The authors observed individuals from 3,136 households distributed across 31 counties in Kenya. It was observed that the prevalence of AUD and non-alcohol substance use disorders was 5.3 percent. Like in the study by Wando et al. (2018), Kamenderi et al. (2021) found that living in urban areas and being male predicted multiple substance use disorders among the patients (Kamenderi et al., 2021).

2.3 Conceptual Framework

A conceptual framework is a theoretical framework that not only maps out but also outlines the nature of the relationship between a study's dependent and independent variables.

In this study: The **dependent variable are the seven selected psychiatric disorders i.e., Major depressive episode, panic disorders, post-traumatic stress disorder, obsessive compulsive disorder, generalized anxiety disorder, psychotic disorder and (Hypo)manic episode** while the **independent variables is Alcohol Use Disorder**.

Moderating variables are socio-demographic factors i.e., Age, gender, marital status, education level, household income and religion.

Confounding variables are family history of mental illness and family history of alcohol use.

The conceptual framework that illustrates the relationship between the dependent variable and the independent variables is depicted in Figure 1 below.

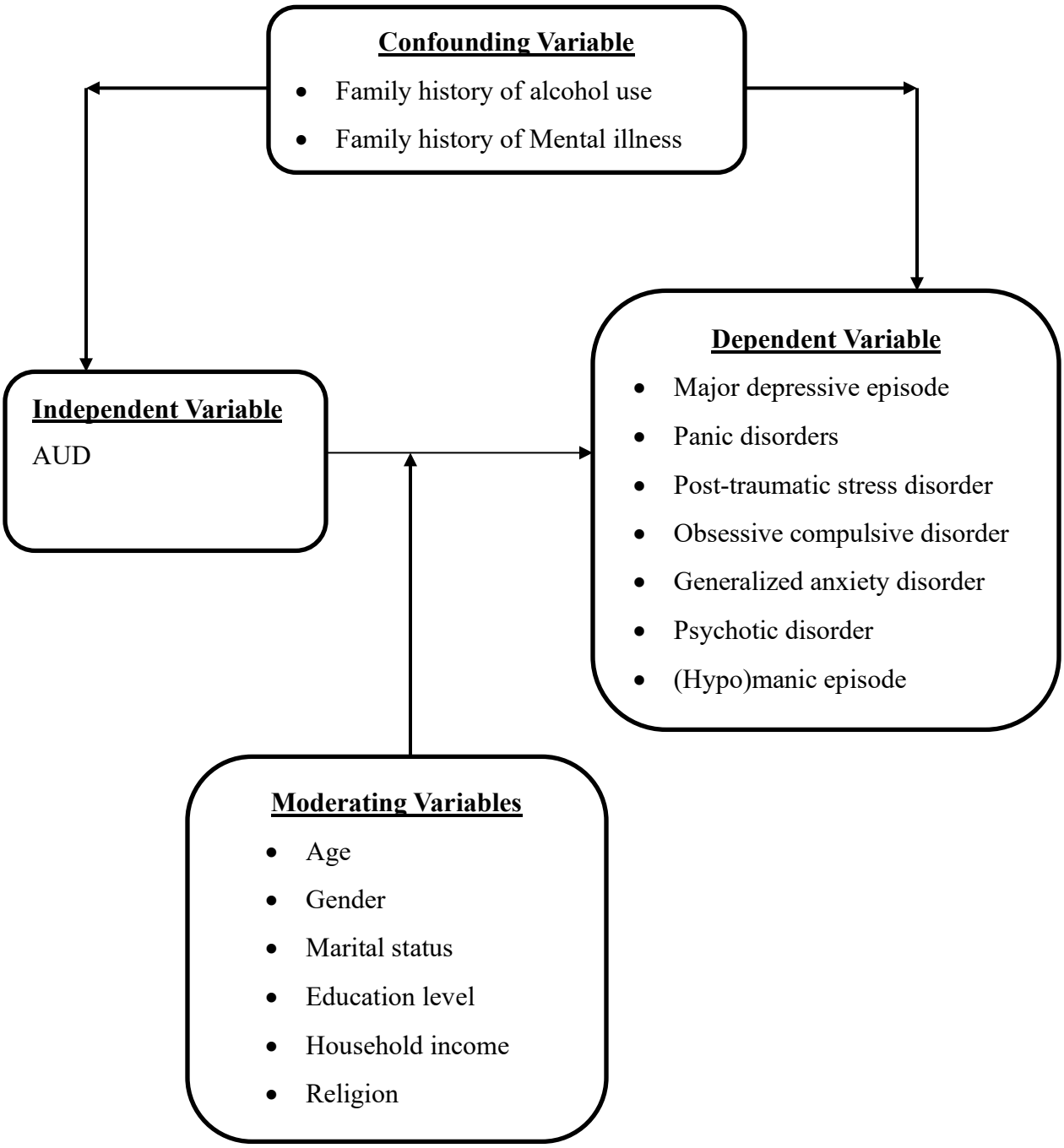


Figure 1: Study's Conceptual Framework

CHAPTER THREE: METHODOLOGY

3.0 Introduction

The current chapter discusses the research methods that were employed in the study. The chapter is organized into the following sub-topics: research design, study area, target population, eligibility criteria, sample size and sampling methods, techniques of data collection, techniques of data analysis, and ethical considerations.

3.1 Research Design

This study is a cross-sectional study. In cross-sectional studies, researchers gather data from a population at a single point in time. The design was considered suitable for the study because the researcher collected data on AUD patients' psychiatric comorbidities at a single point in time.

3.2 Study Area

The study was conducted at Mathari National Teaching and Referral Hospital (MNTRH). The facility, located in Nairobi, is a level six tertiary hospital that offers specialized psychiatric services and research and training in mental health. MNTRH's departments included a rehabilitation unit that counseled and treated individuals who suffered from alcohol and substance abuse disorders ("MNTRH Overview").

3.3 Target Population

The study targeted all the adults who were attending the MNTRH's Center for Substance Abuse Treatment (CSAT) for alcohol abuse disorder treatment between 1st April 2023 and 31st July 2023.

3.4 Eligibility Criteria

3.4.1 Inclusion Criteria

Individuals were included in the study only if they satisfied the following criteria:

1. Those 18 years or older
2. Those who were undergoing AUD treatment at MNTRH's CSAT unit
3. Those who had given a voluntary informed consent to participate in the study.

3.4.2 Exclusion Criteria

Participants were excluded from the study if:

1. They refused to participate in the study
2. They were below 18 years
3. They were too sick to participate in the study.

3.5 Sample Size and Sampling Procedure

Convenience sampling method was employed when recruiting participants for the study. Initially, random sampling method was considered because it gave each member of the population an equal chance of being recruited to the study. But convenience sampling method was preferred over it because it lacked practicality in CSAT MNTRH setup. Patients seen at MNTRH CSAT clinic were booked and attended to on a weekly basis so it was impossible to sample them randomly as they were seen in piecemeal.

3.6 Sample Size

The Andrew Fisher's formula was used to compute the study's sample size. The formula is depicted below.

$$\boldsymbol{n = \frac{z^2 p(1-p)}{d^2}}$$

In the formula;

n: represents the minimum sample size

z: represents the standard normal deviation. A confidence level of 95% was considered. The z-score that corresponded to 95% confidence level was 1.96.

p: represents the proportion of AUD patients who have co-occurring psychiatric disorders (62.3%).

d: represents the margin of error. For this study, a margin of error of 5 percent was considered (5%).

There was no common estimate for the prevalence of all the seven psychiatric comorbidities among AUD patients. A prevalence of 50% was therefore adopted in the computation of the sample size as an expression of ignorance on the estimate. This yielded a sample size of 385 patients as shown below.

$$n = \frac{z^2 qp}{d^2}$$

$$= \frac{1.96^2(0.5 * 0.5)}{0.05^2}$$

$$= 384.16$$

$$= \quad 385 \text{ patients}$$

From the attendance register at MNTRH, a total of 137, 637 and 1059 patients were attended to in the hospital in 2020, 2021 and 2022 respectively. The records for 2020 were however low due to the implementation of Covid-19 restrictions hence they were omitted in the computation of sample size.

A total of 1659 new patients were seen in 2021 and 2022 hence an average of 70.67 patients per month (1659/ 24). With a data collection period of 6 months, the available number of AUD patients who were viable for selection into the study stood at 424. Due to the finite nature of the population of AUD patients been attended to in MNTRH, a finite sample size correction was conducted on the finite population of 424 AUD patients, to yield a sample size of 202 patients as shown below.

$$\textit{Corrected Sample size} = \frac{n}{1 + \frac{n-1}{finite\ population}}$$

$$= \frac{385}{1 + \frac{385-1}{424}}$$

$$= 202.02$$

$$= 202 \text{ patients}$$

3.7 Data Collection Procedures

It was anticipated that a total of 449 AUD patients would be referred for treatment at MNTRH's CSAT program between 1st April 2023 and 31st July 2023. Covid 19 protocols were observed when approaching potential respondents. These protocols included social distancing, wearing of facial

masks by enumerators and respondents, and sanitization before and after each interview. Before obtaining the participants' informed consent, the researcher offered an in-depth explanation of all the relevant aspects of the study. Some of the information that was shared with research participants included the nature and aims of the study; risks and benefits of the research; voluntary nature of participation; duration of the study; and a guarantee of data privacy and confidentiality. Once the participants affirmed that they had understood the aims and processes of the study, they were requested to append their signatures on the informed consent form to confirm their willingness to participate in the study. The outline of data collection was as follows: -

- The researcher approached all adult patients on treatment for AUD attending MNTRH CSAT held on Tuesday (9am -3pm) weekly.
- Convenience sampling method was used to select the patients into the study.
- The researcher comprehensively explained the nature of the study in simple terms.
- Participants were then evaluated to determine whether they met the inclusion criteria.
- Those who agreed to participate in the study filled and signed the consent form.
- Personal identifiers were then issued to participants to maintain anonymity.

The study's recruitment strategy is depicted in Figure 2 below.

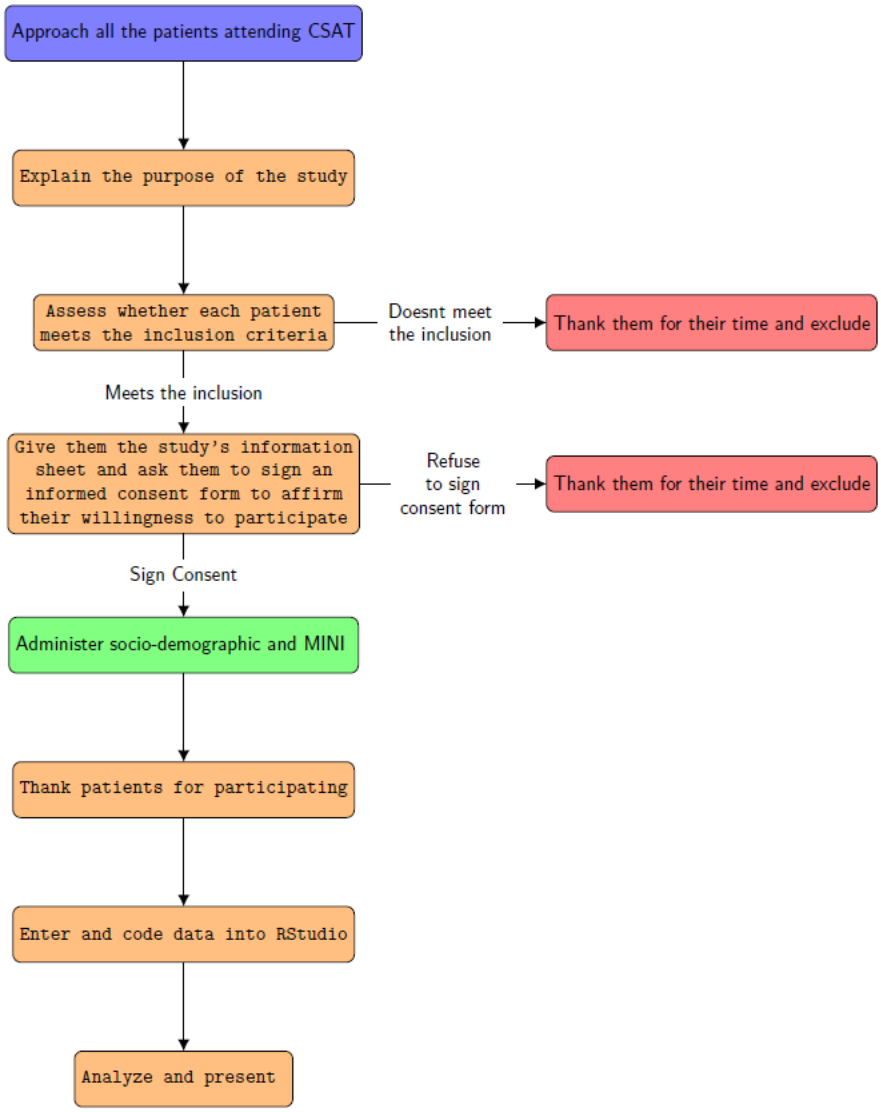


Figure 2. Recruitment and Data Collection Strategy

1.8 Data Collection Instruments

Two data collection instruments were used in collecting data for the study. The first instrument was a socio-demographic questionnaire that covered participants' basic information including age, gender, religion, education level, household income, marital status, and employment status.

The second data collection instrument was Sane's (2019) translated Kiswahili version of Sheehan et al.'s (1998) Mini International Neuropsychiatric Interview (MINI) 5.0. It was used to assess the presence or absence of seven psychiatric disorders under study. The MINI 5.0 instrument was preferred not only for its ease of administration and relatively brief training needed for its use but also for its broad coverage and quick administration time. When compared to the CIDI and SCID-P, in terms of reliably and validly eliciting symptom criteria, MINI was found to succeed and do so in less than half of the time. The tool had been used locally in Kenya with remarkable results. Sections A, D, E, H, I, L, and O of the MINI 5.0 were used in the study.

Section A of the tool determined the presence of Major Depressive Episode. The section comprised of six questions that assessed the presence of symptoms such as feelings of sadness and hopelessness, lack of interest in activities, loss of appetite, sleeplessness, restlessness, fatigue, feelings of guilt and unworthiness, loss of concentration, and fear of dying (see Appendix 4). The answer categories for all the items were 'no' and 'yes', which were awarded scores of zero and one. Scores that are higher than five indicated the presence of a Major Depressive Episode.

Section D determined the presence of (Hypo)Manic Episode. The tool consisted of five questions that assesed the presence of symptoms such as feelings of elated mood, increased energy needing less sleep, having rapid thoughts, being full of ideas, having increased productivity/creativity, having increased motivation and having impulsive behavior.

Section E determined the presence of panic disorders. The tool consisted of six questions that assessed the presence of symptoms such as feelings of anxiety, fear, discomfort, and avoidance. The section also determines whether individuals had palpitations, difficulty in breathing, choking

sensation, chest pain, nausea, dizziness, fevers, or numbness during any of their previous attacks (see Appendix 4). The answer categories for all the items were 'no' and 'yes', which were awarded scores of zero and one. Higher score indicated the presence of panic disorder.

The tool's section H measured the presence of obsessive-compulsive behavior. The section comprised of four questions that measured the frequency and intensity of unwanted, distasteful, intrusive, or distressing thoughts and impulses. It also determined the frequency of individuals' desire to do things repeatedly in response to an obsession (see Appendix 4). Like sections A and D, the answered categories for section G's items were 'no' and 'yes'; which were awarded scores of zero and one. Higher score indicated the presence of obsessive-compulsive behavior.

Section I, on the other hand, evaluated the presence of post-traumatic stress disorder. The section comprised of seven questions. The items evaluated whether an individual had experienced a traumatic event, had repeatedly re-experienced the event, and had tried to avoid recalling or thinking about the distressing details of the event. Further, it determined whether the participants had been unhappy, detached, irritable, nervous, self-destructive, less interested in activities of daily living, afraid, or guilty about their contribution to trauma (see Appendix 4).

Section L evaluated the presence of psychotic disorders. The section consisted of 13 items that evaluated the presence of symptoms such as delusion, hallucinations, paranoia, and incoherence. The answer categories for section L were also 'no' and 'yes'; where many 'yes' answers indicated the presence of the disorder (see Appendix 4).

The section O determined the presence of generalized anxiety disorder among individuals. The

section consisted of four questions. The items evaluated the frequency, magnitude, and effects of individuals' feelings of anxiety and worry. It also determined whether respondents exhibited feelings of restlessness, muscle tension, exhaustion, irritability, and sleeplessness (see Appendix 4). The answer categories for section N were also 'no' and 'yes', and many 'yes' answers indicated the presence of the disorder.

3.9 Statistical Analysis

Once gathered, the data was coded into **R-Studio version 2023.06.1-524** statistical software for anlysis. The prevalence of selected psychiatry comorbidity in AUD patients attending MNTRH CSAT for treatment was summarized descriptively using frequencies and percentages. Socio-demographic characteristics associated with psychiatric comorbidities in AUD patients attending MNTRH's CSAT was summarized into frequencies and percentages using n x 2 contingency tables; where n represented the categories within the categorical independent variables. Variables measured on a continuous scale were summarized in means and standard deviations.

Bivariate analysis involving each of the psychiatric comorbidities against the socio-demograpgic factors was done through Fishers' and Chi-Square tests. Furthermore, multivariate logistic regression models were fitted to control for the effects of potential modifying factors. Stepwise model selection process was used in determining the variables to be included in the model. The final parsimonious models were determined through comparison of the Akaike Information Criteria (AIC) value in each analysis. The model with the least AIC value was selected as the final model. Significance testing was done at 95% confidence level.

3.10 Ethical Considerations

Ethical considerations in research include a set of principles that guide research designs and practices. The ethical considerations help to not only protect research participants' rights but also enhance and maintain the validity and integrity of research. Some of the ethical considerations that were taken into account when conducting the study included ethical approval, risk minimization, informed consent, voluntary participation, and privacy and confidentiality.

3.10.1 Ethical Approval

Ethical approval for this study was sought from the Mathari National Teaching and Referral Hospital administration, Kenyatta National Hospital's and the University of Nairobi's research and ethics committee and NACOSTI.

3.10.2 Risk Minimization

Researchers are obligated to minimize any form of physical, social, or psychological harm that study participants could face during the course of research. The study minimized harm to participants by adopting procedures that are consistent with sound research design, avoiding deceptive practices, protecting participants' anonymity and confidentiality, and allowing individuals to withdraw from the survey at any time without facing any backlash.

3.10.3 Informed Consent

Besides ethical approval and risk minimization, the researcher obtained a signed informed consent from each of the study's participants before data collection. First, the participants were briefed about the purpose, benefits, procedures, and risks associated with the study. The researcher asked the participants if they had understood the study's purpose and procedures and asked if they would

be willing to participate. Those willing to participate were required to append their signatures on the consent form.

3.10.4 Voluntary Participation

Participation in the proposed study was voluntary. The researcher did not use any type of deception or coercion when recruiting participants. The researcher informed participants about their right to refuse participation or withdraw from the survey at any point in time without facing any repercussions.

3.10.5 Privacy and Confidentiality

Serial numbers, as opposed to identifiable information such as names, phone numbers, and addresses were used when labeling data to ensure anonymity of the participants. Confidentiality was also ensured by protecting the study's data from unauthorized access. Raw data and any documents related to the survey were stored in locked cabinets and password protected files.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter discusses the research methods that were obtained from analysis of the data. It is organized into 8 sections namely socio-demographic characteristics, major depressive episodes, hypo-maniac episodes, panic disorder, obsessive compulsive disorder, post traumatic stress disorder, psychotic disorder and generalized anxiety disorder. All the analysis were done in **RStudio version 2023.06.1-524.**

4.1 Socio – Demographic Characteristics

Table 1: Socio-demographic characteristics of AUD patients

Socio-Demographic Characteristics	Frequency (N)	Frequency (%)
Gender		
Female	35	17.3%
Male	167	82.7%
Age in years		
18 – 22	19	9.4%
23 – 27	69	34.2%
28 – 32	38	18.8%
33 – 37	38	18.8%
38 – 42	14	6.9%
Over 43	24	11.9%
Employment Status		
Employed	61	30.2%
Unemployed	70	34.7%
Self Employed	69	34.2%
Marital Status		
Single	136	67.3%
Married	59	29.2%
Widowed	7	3.5%
Level of Education		
No Formal Education	5	2.5%
Primary	32	15.8%
Secondary	56	27.7%
Tertiary	109	54.0%
Religion		
Christian	151	74.8%
Muslim	20	9.9%
Others	31	15.3%
Daily Income in KES		
0 – 500	111	55.0%
501 – 1000	28	13.9%
1001 – 1500	21	10.4%
1501 – 2000	10	5.0%

A total of 202 patients with Alcohol Use Disorder (AUD) participated in the study. The participants consisted of 167 (82.7%) males and 35 (6.9%) females. The most dominant group was aged between 23 and 27 years (69 patients; 34.2%) while the least dominant group was aged between 33 and 37 years (14 patients; 6.9%). Seventy patients (34.7%) were unemployed while 69 (34.2%) and 61 (30.2%) patients we re self-employed and employed respectively. A total of 136 (67.3%) patients were single. Nine patients (4.5%) earned more than KES 5000.00 per day. Most patients,

however, earned less than KES 500.00 per day (111 patients; 55.0%). More than half of the patients subscribed to the Christian faith (151 patients; 74.8%) and had attained tertiary education (109; 54.0%). See Table 1 for more details.

4.2 Major Depressive Episode

Table 2: Factors associated with the prevalence of Major Depressive Episodes

Variable	Major Depressive Episodes	
	Yes, n = 150 (%)	**No, n = 52 (%)**
Family history of AUD		
No	59 (39.3)	35 (67.3)
Yes	91 (60.7)	17 (32.7)
Drinking debut (years)		
Mean (Std Dev)	18.1 (4.1)	18.9 (5.3)
Gender		
Male	121 (80.7)	46 (88.5)
Female	29 (19.3)	6 (11.5)
Age in years		
18 - 27	69 (46.0)	19 (36.5)
28 - 37	53 (35.3)	23 (44.2)
Above 37	28 (18.7)	10 (19.2)
Employment Status		
Unemployed	48 (32.0)	13 (25.0)
Employed	49 (32.7)	21 (40.4)
Self Employed	53 (35.3)	18 (34.6)
Marital Status		
Single	102 (68.0)	34 (65.4)
Married	43 (28.7)	16 (30.8)
Widowed/ Divorce	5 (3.3)	2 (3.8)
Level of Education		
Primary	24 (16.0)	13 (25.0)
Secondary	46 (30.7)	10 (19.2)
Tertiary	80 (53.3)	29 (55.8)
Religion		
Christian	108 (72.0)	43 (82.7)
Muslim	17 (11.3)	3 (5.8)
Others	25 (16.7)	6 (11.5)
Daily Income in KES		
0 – 500	85 (56.7)	26 (50.0)
501 – 1000	23 (15.3)	5 (9.6)
1001 – 1500	16 (10.7)	5 (9.6)
Over 1500	26 (17.3)	16 (28.9)

Out of 202 patients, 150 (74.3%) suffered MDE. History of AUD was significantly associated with the occurrence of MDE. The odds of a patient, from a family with history of AUD, suffering MDE

was 3 folds that of a patient from a family without a history of AUD (OR=3.14; $p < 0.001$). Patients from a family with history of AUD were therefore more likely to suffer MDE. The association between the occurrence of MDE and gender, employment status, marital status, education, religion and daily income were non-significant.

When the effects of variables were controlled in a multivariate logistic regression model, the association with between MDE occurrence with history of alcohol use in the family was adjusted upwards to almost 4 folds (OR=3.84, $p < 0.001$). Patients from a family with history of AUD were still more likely to suffer MDE.

Moreover, employment status, level of education and daily income became significantly associated with MDE occurrence. The odds of suffering MDE by employed patients was 0.3 times that of unemployed patients (OR=0.33; p=0.029). Employed patients were therefore less likely to suffer MDE compared to unemployed patients. There was no significant difference in the odds of suffering MDE in the self-employed and unemployed groups.

The odds of patients, who had attained secondary education, suffering MDE was approximately 3 times that of patients who had done primary school (OR=3.1, p=0.034). Patients who had attained secondary education were therefore more probable to suffer MDE. There was no significant difference in the occurrence of MDE between patients with tertiary and primary education.

The odds of MDE occurrence among patients with daily income of more than KES1500.00 was approximately 0.4 times that of patients with daily income of less than KES 500.00. The probability of patients suffering MDE among patients with a daily income of more than KES 1500 was less than that of patients earning less than KES 500.00. There was no significant difference between the other daily income groups and those earning less than KES 500.00. The final

parsimonious logistic regression model had an AIC value of 222.4 (See Table 2)

4.3 Hypo-Maniac Episodes

Table 3: Factors associated with the prevalence of Hypo- Maniac Episodes

Variable	Hypo - Maniac Episodes	
	Yes, n = 56 (%)	**No, n = 146 (%)**
Family history of AUD		
No	16 (28.6)	78 (53.4)
Yes	40 (71.4)	68 (46.6)
Drinking debut (years)		
Mean (Std Dev)	17.9 (3.8)	18.4 (4.7)
Gender		
Male	45 (80.4)	122 (83.6)
Female	11 (19.6)	24 (16.4)
Age in years		
18 – 27	23 (41.1)	65 (44.5)
28 – 37	23 (41.1)	53 (36.3)
Above 37	10 (17.8)	28 (19.2)
Employment Status		
Unemployed	12 (21.4)	49 (33.6)
Employed	19 (33.9)	51 (34.9)
Self Employed	25 (44.6)	46 (31.5)
Marital Status		
Single	38 (67.9)	98 (67.1)
Married	15 (26.8)	44 (30.1)
Widowed/ Divorce	3 (5.4)	4 (2.7)
Level of Education		
Primary	13 (23.2)	24 (16.4)
Secondary	15 (26.8)	41 (28.1)
Tertiary	28 (50.0)	81 (55.5)
Religion		
Christian	39 (69.6)	112 (76.7)
Muslim	6 (10.7)	14 (9.6)
Others	11 (19.6)	20 (13.7)
Daily Income in KES		
0 – 500	26 (46.4)	85 (58.2)
501 – 1000	8 (14.3)	20 (13.7)
1001 – 1500	9 (16.1)	12 (8.2)
Over 1500	13 (23.2)	29 (19.9)

A total of 56 patients suffered hypo-mania episodes. This translated to a prevalence of 27.7%. There was a significant association between the occurrence of HME and family history of AUD. The odds of HME occurrence among patients from families with history of AUD was approximately 3 folds that of patients from families without history of AUD (OR=2.84; p=0.002). Patients from families with history of AUD were therefore more likely to be diagnosed with HME.

Age, marital status, level of education, religion and daily income were dropped from the multivariate regression model during stepwise selection process. Final model had an AIC value of 230.3. There was a significant association between the occurrence of HME and family history of AUD even after controlling the effects of age of drinking debut, gender and employment status. The odds of HME occurrence among patients from families with history of AUD was still approximately 3 folds that of patients from families without history of AUD (OR=2.72; p=0.005). Patients from families with history of AUD were therefore more likely to be diagnosed with HME. Table 3 summarizes this information.

4.4 Panic Disorders

Table 4: Factors associated with the prevalence of Panic Disorders

Variable	Panic Disorders		Crude OR (95% CI)	P-Val	Adj OR (95% CI)	P-Val
	Yes, n = 43 (%)	No, n = 159 (%)				
Family history of AUD						
No	17 (39.5)	77 (48.4)	Ref	Ref	Ref	Ref
Yes	26 (60.5)	82 (51.6)	1.43 (0.72, 2.89)	0.299	0.16 (0.77, 3.38)	0.218
Drinking debut (years)						
Mean (Std Dev)	18.0 (4.1)	18.4 (4.6)	0.98 (0.90, 1.06)	0.637	1.01 (0.93, 1.10)	0.784
Gender						
Male	35 (81.4)	132 (83.0)	Ref	Ref	Dropped (1)	
Female	8 (18.6)	27 (17.0)	1.23 (0.44, 2.63)	0.803		
Age in years						
18 - 27	20 (46.5)	68 (42.8)	Ref	Ref	Dropped (2)	
28 - 37	17 (39.5)	59 (37.1)	0.98 (0.46, 2.05)	0.956		
Above 37	6 (14.0)	32 (20.1)	0.65 (0.22, 1.71)	0.377		
Employment Status						
Unemployed	18 (41.9)	43 (27.0)	Ref	Ref	Ref	Ref
Employed	13 (30.2)	57 (35.8)	0.55 (0.24, 1.24)	0.142	0.40 (0.17, 0.94)	0.038
Self Employed	12 (27.9)	59 (37.1)	0.49 (0.21, 1.12)	0.085	0.34 (0.14, 0.83)	0.019
Marital Status						
Single	32 (74.4)	104 (65.4)	Ref	Ref	Ref	Ref
Married	9 (20.9)	50 (31.4)	0.59 (0.25, 1.30)	0.251	0.45 (0.17, 1.06)	0.082
Widowed/ Divorce	2 (4.7)	5 (3.1)	1.35 (0.17, 6.92)	0.671	1.75 (0.24, 8.88)	0.524
Level of Education						
Primary	8 (18.6)	29 (18.2)	Ref	Ref	Dropped (4)	
Secondary	10 (23.3)	46 (28.9)	0.79 (0.27, 2.32)	0.652		
Tertiary	25 (58.1)	84 (52.8)	1.07 (0.44, 2.80)	0.869		
Religion						
Christian	31 (72.1)	120 (74.5)	Ref	Ref	Dropped (3)	
Muslim	4 (9.3)	16 (10.1)	0.99 (0.26, 2.98)	1.000		
Others	8 (18.6)	23 (15.7)	1.36 (0.52, 3.25)	0.482		
Daily Income in KES						
0 – 500	28 (65.1)	83 (52.2)	Ref	Ref	Dropped (5)	
501 – 1000	4 (9.3)	24 (15.1)	0.51 (0.14, 1.48)	0.219		
1001 – 1500	5 (11.6)	16 (10.1)	0.94 (0.28, 2.70)	0.891		
Over 1500	6 (14.0)	36 (22.6)	0.50 (0.17, 1.26)	0.146		

AIC Value for Final Model = 208.4

Fourty-three patients suffered panic disorders hence a prevalence of 21.3% among patients with AUD in Mathari Hospital. Bivariate analysis did not yield any significant association between the listed factors and occurrence of panic disorder.

Gender, age, level of education, religion and daily income were dropped from the multivariate model through stepwise model selection process. The final parsimonious model had an AIC value

of 208.4 and featured family history of AUD, age of drinking debut, marital and employment status as the main variables. Employment status was significantly associated with occurrence of panic disorders. The odds of occurrence of panic disorder among employed patients was approximately 0.4 times that of unemployed patients (OR=0.40, p=0.038). The probability of suffering panic disorder was less among employed patients. There was no significant difference in the occurrence of panic disorder among self-employed and unemployed patients (OR=1.75; p=0.524). Table 4 summarizes this information.

4.5 Obsessive Compulsive Disorders

Table 5: Factors associated with the prevalence of Obsessive Compulsive Disorders (OCD)

Variable	OCD		Crude OR (95% CI)	P-Val	Adj OR (95% CI)	P-Val
	Yes, n = 60 (%)	No, n = 142 (%)				
Family history of AUD						
No	28 (46.7)	66 (46.5)	Ref	Ref	Ref	Ref
Yes	32 (53.3)	76 (53.5)	0.99 (0.54, 1.83)	0.980	1.04 (0.55, 2.01)	0.895
Drinking debut (years)					Ref	Ref
Mean (Std Dev)	18.1 (3.6)	18.4 (4.8)	0.98 (0.91, 1.05)	0.631	0.99 (0.91, 1.06)	0.711
Gender						
Male	50 (83.3)	117 (82.4)	Ref	Ref	Dropped (5)	
Female	10 (16.7)	25 (17.6)	0.94 (0.40, 2.07)	0.872		
Age in years						
18 - 27	27 (45.0)	61 (43.0)	Ref	Ref	Dropped (3)	
28 - 37	23 (38.3)	53 (37.3)	0.98 (0.50, 1.92)	0.953		
Above 37	10 (16.7)	28 (19.7)	0.81 (0.33, 1.88)	0.621		
Employment Status						
Unemployed	24 (40.0)	37 (26.1)	Ref	Ref	Ref	Ref
Employed	20 (33.3)	50 (35.2)	0.62 (0.30, 1.29)	0.192	0.49 (0.22, 1.10)	0.085
Self Employed	16 (26.7)	55 (38.7)	0.45 (0.21, 0.96)	0.036	0.39 (0.17, 0.86)	0.022
Marital Status						
Single	41 (68.3)	95 (66.9)	Ref	Ref	Dropped (4)	
Married	18 (30.0)	41 (28.9)	1.02 (0.52, 1.97)	0.959		
Widowed/ Divorce	1 (1.7)	6 (4.2)	0.43 (0.02, 2.74)	0.369		
Level of Education						
Primary	10 (16.7)	27 (19.0)	Ref	Ref	Dropped (2)	
Secondary	18 (30.0)	38 (26.8)	1.27 (0.51, 3.29)	0.598		
Tertiary	32 (53.3)	77 (54.2)	1.11 (0.49, 2.68)	0.787		
Religion						
Christian	46 (76.7)	105 (73.9)	Ref	Ref	Dropped (1)	
Muslim	6 (10.0)	14 (9.9)	0.99 (0.33, 2.67)	0.966		
Others	8 (13.3)	23 (16.2)	0.80 (0.31, 0.88)	0.605		
Daily Income in KES						
0 – 500	37 (61.7)	74 (52.1)	Ref	Ref	Ref	Ref
501 – 1000	7 (11.7)	21 (13.8)	0.68 (0.24, 1.68)	0.397	0.62 (0.21, 1.62)	0.351
1001 – 1500	7 (11.7)	14 (9.9)	1.01 (0.35, 2.68)	1.000	1.12 (0.36, 3.29)	0.837
Over 1500	9 (15.0)	33 (23.2)	0.55 (0.23, 1.24)	0.152	0.41 (0.15, 1.01)	0.062

AIC Value for Final Model = 246.0

A total 0f 60, out of 202, patients suffered OCD. This translated to a prevalence of 29.7% among patients with AUD in Mathari Hospital. Bivariate analysis yielded a significant association between employment status and the occurrence of OCD. The odds of self-employed patients suffering OCD was approximately 0.5 folds that of unemployed patients (OR=0.45; p=0.036). Self-employed patients were therefore less probable to suffer OCD compared to unemployed patients. There was no significant difference in the occurrence of OCD among the self-employed

and unemployed patients (OR=0.62; p=0.192).

Gender, age, marital status, level of education and religion were dropped from the multivariate model through stepwise model selection process. The final parsimonious model had an AIC value of 246.0. Employment status was significantly associated with occurrence of OCD. The odds of occurrence of OCD among self-employed patients was approximately 0.4 times that of unemployed patients (OR=0.39, p=0.022). The probability of suffering OCD was less among employed patients. There was no significant difference in the occurrence of OCD among employed and unemployed patients (OR=0.49; p=0.085). Table 5 summarizes this information.

4.6 Post Traumatic Stress Disorder

Table 6: Factors associated with the prevalence of Post-Traumatic Stress Disorder (PTSD)

Variable	PTSD		Crude OR (95% CI)	P-Val	Adj OR (95% CI)	P-Val
	Yes, n = 90 (%)	No, n = 112 (%)				
Family history of AUD						
No	32 (35.5)	62 (55.3)	Ref	Ref		
Yes	58 (64.5)	50 (44.7)	2.23 (1.27, 3.99)	0.005	2.81 (1.47, 5.53)	0.002
Drinking debut (years)						
Mean (Std Dev)	18.2 (4.3)	18.4 (4.6)	0.99 (0.93, 1.06)	0.814	1.02 (0.95, 1.09)	0.633
Gender						
Male	70 (77.8)	97 (86.6)	Ref	Ref		
Female	20 (22.2)	15 (13.4)	1.84 (0.88, 3.92)	0.99	1.69 (0.75, 3.84)	0.205
Age in years						
18 - 27	42 (46.7)	46 (41.1)	Ref	Ref	Dropped (2)	
28 - 37	34 (37.8)	42 (37.5)	0.89 (0.48, 1.65)	0.702		
Above 37	14 (15.6)	24 (21.4)	0.64 (0.29, 1.40)	0.259		
Employment Status						
Unemployed	31 (34.4)	30 (26.8)	Ref	Ref		
Employed	29 (32.2)	41 (36.6)	0.69 (0.34, 1.37)	0.282	0.56 (0.25, 1.25)	0.161
Self Employed	30 (33.3)	41 (36.6)	0.71 (0.35, 1.42)	0.325	0.55 (0.24, 1.22)	0.142
Marital Status						
Single	60 (66.7)	76 (67.9)	Ref	Ref	Dropped (1)	
Married	28 (31.1)	31 (27.7)	1.14 (0.62, 2.12)	0.667		
Widowed/ Divorce	2 (2.2)	5 (4.5)	0.53 (0.07, 2.68)	0.418		
Level of Education						
Primary	13 (14.1)	24 (21.4)	Ref	Ref		
Secondary	31 (34.4)	25 (22.3)	2.26 (0.96, 5.47)	0.056	2.99 (1.19, 7.81)	0.021
Tertiary	46 (51.1)	63 (56.3)	1.34 (0.62, 2.99)	0.449	1.47 (0.63, 3.52)	0.377
Religion						
Christian	59 (65.6)	92 (82.1)	Ref	Ref		
Muslim	13 (14.4)	7 (6.3)	2.85 (1.09, 8.10)	0.027	1.93 (0.69, 5.74)	0.217
Others	18 (0.2)	13 (11.6)	2.14 (0.98, 4.82)	0.051	2.21 (0.94, 5.33)	0.071
Daily Income in KES						
0 – 500	46 (51.1)	65 (58.0)	Ref	Ref		
501 – 1000	17 (18.9)	11 (9.8)	2.16 (0.93, 5.23)	0.067	2.91 (1.14, 7.76)	0.028
1001 – 1500	6 (6.7)	15 (13.4)	0.58 (0.19, 1.55)	0.268	0.58 (0.17, 1.80)	0.356
Over 1500	21 (23.3)	21 (18.8)	1.41 (0.69, 2.90)	0.340	1.70 (0.74, 3.96)	0.211

AIC Value for Final Model = 265.9

Out of 202 patients, 90 suffered MDE hence a prevalence of 44.6%. Bivariate analysis revealed a significant association between the occurrence of PTSD and family history of AUD. The odds of occurrence of PTSD among patients from families with history of AUD was approximately 2 times that patients from families without history of AUD (OR=2.23; p=0.005). Patients from families with history of AUD were therefore more likely to suffer PTSD.

Bivariate analysis also revealed a significant association between the occurrence of PTSD and

patients' religion. The odds of occurrence of PTSD among patients who subscribed to the Islamic faith was approximately 3 times that of patients who subscribed to Christianity (OR=2.85; p=0.027). Muslim patients were therefore more likely to suffer PTSD. The association between the occurrence of PTSD and gender, age, employment status, marital status, education and daily income were non-significant.

Multivariate logistic regression revealed a significant association between the occurrence of PTSD and family history of AUD. The odds of occurrence of PTSD among patients from families with history of AUD was approximately 3 times that patients from families without history of AUD (OR=2.81; p=0.002). Patients from families with history of AUD were still more likely to suffer PTSD after controlling for other factors.

Multivariate logistic regression also revealed a significant association between the occurrence of PTSD with level education and daily income. However, the association with religion became non-significant. The odds of occurrence of PTSD among patients who had attained secondary education was approximately 3 times that of patients who had attained primary education only (OR=2.99; p=0.021). Patients with secondary education were more likely to suffer PTSD than those with primary education. There was no significant difference in the occurrence of PTSD in the tertiary and primary education groups.

Further, the odds of occurrence of PTSD among patients with a daily income between KES 501.00 and KES 1000.00 was approximately 3 times that of patients with a daily income of less than KES 500.00 (OR=2.91; p=0.028). There was no significant difference in the occurrence of PTSD in the other daily income groups and the less than KES 500.00 group. The final parsimonious logistic regression model had an AIC value of 265.9. See Table 6 for details.

4.7 Pyschotic Disorder

Table 7: Factors associated with the prevalence of Psychotic Disorder

Variable	Psychotic Disorder		Crude OR (95% CI)	P-Val	Adj OR (95% CI)	P-Val
	Yes, n = 146 (%)	No, n = 56 (%)				
Family history of AUD						
No	62 (42.5)	32 (57.1)	Ref	Ref		
Yes	84 (57.5)	24 (42.9)	1.80 (0.97, 3.39)	0.061	1.96 (1.04, 3.75)	0.040
Drinking debut (years)						
Mean (Std Dev)	18.2 (4.58)	18.6 (4.2)	0.98 (0.91, 1.04)	0.518	0.35 (0.16, 0.75)	0.007
Gender						
Male	127 (87.0)	40 (71.4)	Ref	Ref		
Female	19 (13.0)	16 (18.6)	0.38 (0.18, 0.81)	0.009		
Age in years						
18 - 27	61 (41.8)	27 (48.2)	Ref	Ref		
28 - 37	56 (38.4)	20 (35.7)	1.24 (0.62, 2.48)	0.537		
Above 37	29 (19.9)	9 (16.1)	1.41 (0.60, 3.56)	0.425		
Employment Status						
Unemployed	43 (29.4)	18 (32.1)	Ref	Ref		
Employed	50 (34.2)	20 (35.7)	1.05 (0.49, 2.24)	0.906		
Self Employed	53 (36.3)	18 (32.1)	1.23 (0.57, 2.68)	0.592		
Marital Status						
Single	99 (67.8)	37 (66.1)	Ref	Ref		
Married	41 (28.1)	18 (32.1)	0.85 (0.44, 1.69)	0.637		
Widowed/ Divorce	6 (4.1)	1 (1.8)	2.01 (0.32, 53.26)	0.450		
Level of Education						
Primary	26 (17.8)	11 (19.6)	Ref	Ref		
Secondary	46 (31.5)	10 (17.9)	1.93 (0.71, 5.30)	0.180		
Tertiary	74 (50.7)	35 (62.5)	0.90 (0.39, 2.00)	0.788		
Religion						
Christian	106 (93.0)	45 (80.4)	Ref	Ref		
Muslim	14 (9.6)	6 (10.7)	0.98 (0.36, 2.96)	0.985		
Others	26 (17.8)	5 (8.9)	0.12 (0.18, 0.12)	0.120		
Daily Income in KES						
0 – 500	82 (56.1)	29 (51.8)	Ref	Ref		
501 – 1000	20 (13.6)	8 (14.3)	0.88 (0.35, 2.34)	0.793		
1001 – 1500	15 (10.3)	6 (10.7)	0.87 (0.32, 2.69)	0.816		
Over 1500	29 (19.9)	13 (23.2)	0.79 (0.36, 1.76)	0.550		

AIC Value for Final Model = 233.8

A total of 146, out of 202, patients suffered psychotic disorder. This translated to a prevalence of 72.3% among patients with AUD in Mathari Hospital.

There was a significant association between the occurrence of psychotic disorder and gender. The odds of occurrence of psychotic disorder among female AUD patients was approximately 0.4 times that of male patients (OR=0.38, p=0.09. The probability of female AUD patients suffering psychotic disorder was less compared to male AUD patients.

The final multivariate logistic regression model had an AIC value of 233.8. Multivariate analysis revealed a significant association between the occurrence of psychotic disorder and family history of AUD. The odds of occurrence of psychotic disorder among patients from families with history of AUD was approximately two times that of patients from families without history of AUD (OR=1.96, p=0.40). Patients from families with AUD history were therefore more likely to suffer psychotic disorders.

Moreover, there was a significant association between the occurrence of psychotic disorder and age of the patient at alcohol debut. The odds of occurrence of psychotic disorder among patients who started taking alcohol at an older age approximately 0.4 times that of patients who started taking alcohol at a younger age. Patients who started taking alcohol at an older age were therefore less likely to suffer psychotic disorders compared to those who started at a younger age. See Table 7 for more details.

4.8 Generalized Anxiety Disorder

Table 8: Factors associated with the prevalence of Generalized Anxiety Disorder

Variable	Generalized Anxiety		Crude OR	P-Val	Adj OR	P-Val
	Yes, n = 100 (%)	No, n = 102 (%)	(95% CI)		(95% CI)	
Family history of AUD						
No	47 (47.0)	47 (46.1)	Ref	Ref		
Yes	53 (53.0)	55 (54.9)	0.96 (0.55, 1.68)	0.895		
Drinking debut (years)						
Mean (Std Dev)	18.6 (4.5)	18.0 (4.4)	1.03 (0.97, 1.10)	0.338	1.02 (0.96, 1.10)	0.487
Gender						
Male	78 (78.0)	89 (87.3)	Ref	Ref		
Female	22 (22.0)	13 (12.7)	1.92 (0.91, 4.17)	0.082	2.27 (1.04, 5.17)	0.043
Age in years						
18 - 27	44 (44.0)	44 (43.1)	Ref	Ref		
28 - 37	35 (35.0)	41 (40.2)	0.85 (0.46, 1.58)	0.614		
Above 37	21 (21.0)	17 (16.7)	1.23 (0.57, 2.68)	0.587		
Employment Status						
Unemployed	30 (30.0)	31 (30.4)	Ref	Ref		
Employed	37 (37.0)	33 (32.4)	1.16 (0.58, 2.32)	0.674		
Self Employed	33 (33.0)	38 (37.3)	0.90 (0.45, 1.79)	0.757		
Marital Status						
Single	66 (66.0)	70 (68.6)	Ref	Ref		
Married	32 (32.0)	27 (26.5)	1.25 (0.68, 2.33)	0.533	1.17 (0.61, 2.25)	0.633
Widowed/ Divorce	2 (2.0)	5 (4.9)	0.44 (0.06, 2.24)	0.445	0.29 (0.04, 1.49)	0.163
Level of Education						
Primary	20 (20.0)	17 (16.7)	Ref	Ref		
Secondary	25 (25.0)	31 (30.4)	0.69 (0.29, 1.59)	0.374		
Tertiary	55 (55.0)	54 (52.9)	0.87 (0.41, 1.84)	0.705		
Religion						
Christian	76 (76.0)	75 (73.5)	Ref	Ref		
Muslim	9 (9.0)	11 (10.8)	0.81 (0.31, 2.09)	0.654		
Others	15 (15.0)	16 (15.7)	0.93 (0.42, 2.02)	0.843		
Daily Income in KES						
0 – 500	50 (50.0)	61 (59.8)	Ref	Ref		
501 – 1000	17 (17.0)	11 (10.8)	1.87 (0.80, 4.50)	0.138		
1001 – 1500	10 (10.0)	11 (10.8)	1.11 (0.42, 2.87)	0.828		
Over 1500	23 (23.0)	19 (18.6)	1.47 (0.72, 3.04)	0.283		

AIC Value for Final Model = 277.8

One hundred patients had generalized anxiety disorder hence a prevalence of 49.5% among AUD patients in Mathari Hospital. Bivariate analysis did not return any significant association between GAD and the socio-demographic factors. Nevertheless, the final multivariate logistic regression had an AIC value of 277.8, and revealed a significant association between the occurrence of GAD and gender of the patients. The odds of female AUD patients suffering GAD was approximately 2

times that male of male AUD patients (OR=2.27, p=0.043) after controlling the effects of age of drinking debut and marital status. Female AUD patients were therefore more likely to suffer GAD compared to male patients. Table 8 summarized this information.

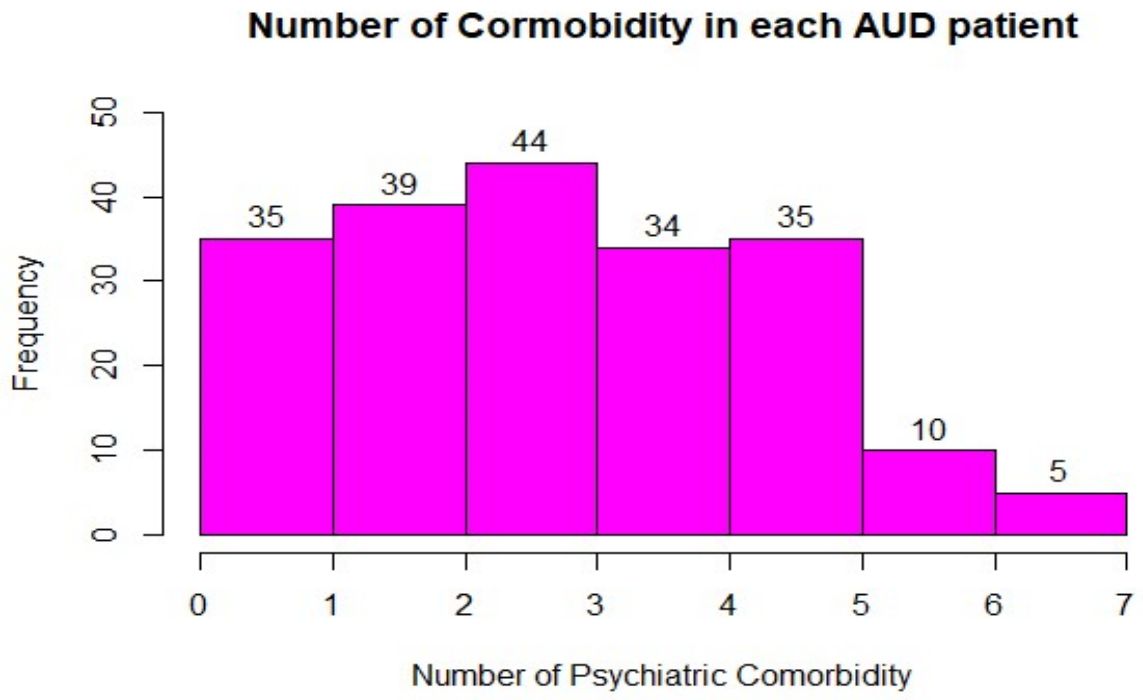


Figure 4.1. Number of Comorbidities in each AUD patient

Most number of patients, 44, had 3 co-occuring psychiatric comorbidities. Only 5 of the patients had all the 7 psychiatric comorbidities.

CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

5.1 Introduction

Alcohol use disorder is a pressing public health concern with potentially devastating consequences. It is a growing public health concern and thus numerous research studies have been conducted worldwide to evaluate the incidence, experience, and impact of comorbidities and factors associated with these comorbidities among alcohol use disorder patients. Understanding the prevalence of psychiatric comorbidities and associated sociodemographic and psychosocial factors among these patients seeking substance use disorder treatment is essential for developing effective treatment, prevention and intervention strategies. Psychiatric comorbidity in AUD patients is often associated with adverse outcomes and poorer prognoses. Thus, the study aimed to address these objectives by examining the prevalence of psychiatric comorbidities and the associated socio-demographic factors in Alcohol Use Disorder (AUD) patients receiving treatment at the Mathari National Teaching and Referral Hospital's Center for Substance Abuse Treatment.

5.2 Discussions

5.2.1 Prevalence and Factors associated with major depressive episode among AUD patients

The current study noted that 150 of the 202 participants (74.3%) experienced Major Depressive Episodes (MDE) as a comorbidity with Alcohol Use Disorder (AUD). This was significantly lesser than what was noted in a Dutch population by Boschloo et al. (2011) which was around 20.3%. However, it was similar to what was seen by Nair et al. (2011) who noted a prevalence of mild depression of about 70% among AUD patients in the Indian setting. It was also noted by Lien et al. (2022) also determined a prevalence of depression among patients who had been diagnosed

with alcohol use disorder in Norwegian rehabilitation facilities of about 14%. These differences in prevalence may be due to differences in study setting and environmental conditions, tools used to assess the depressive symptoms among the patients and the sociodemographic factors of the participants. This is in line with the existing literature given that Kenya is a developing country and it has been noted that developing nations have greater prevalence of psychiatric comorbidities among substance users (Necho et al., 2020).

The figures observed in the current study are closer to the figures observed previously in South Africa which were around 61.9% (Gabriels et al., 2018) and Egypt which was 72% (Mohamed et al., 2020). These higher figures are linked possibly to the poorer socio-economic status and living conditions as it has been shown that youth living in economically disadvantaged locations are more prone to comorbidities and substance use disorders (Fuehrlein et al., 2016).

Major Depressive Episodes were noted to be associated with a family history of alcohol use disorder as it was noted that these patients had three times greater odds of experiencing depressive episodes. This is similar to what was concluded by Boschloo et al. (2011) who clearly noted that a family history of AUD, anxiety and depression was linked with presence of psychiatric comorbidities among AUD disorders. Lower income was associated with a greater co-occurrence of depressive episodes among patients with alcohol use disorder. Several studies carried out by Luitel et al. (2018) in Nepal, Obeid et al. (2020) in Lebanon and Fuehrlein et al. (2016) in the United States indicated that lower income was linked with occurrence of depressive symptoms among patients with alcohol use disorder. Employed AUD patients were also less likely to suffer MDE compared to unemployed AUD patients. This was in line with the findings of Fuehrlein et

al. (2016) who noted that low educational attainment and unemployment was a significant predictor of depressive comorbidities among patients with alcohol use disorder.

5.2.2 Prevalence and Factors associated with Hypomanic Episodes among AUD patients

The current study noted that 150 of the 202 participants (27.7%) experienced hypomanic episodes as a comorbidity with Alcohol Use Disorder (AUD). This is in line with previous research that clearly indicates that alcohol use disorders and bipolar disorder are highly comorbid (Meyer and Wolkenstein, 2010). Few studies have examined the relationship between hypomania and substance misuse and dependence in the general population (Do and Mezuk, 2013). Previous research on the prevalence of hypomania is limited but it has been noted that individuals with mania are 8 times more likely to experience lifetime drug dependence as compared to their non-affected counterparts. It has indeed been hypothesized that substance use may be a coping mechanism among these patients to attempt to curb the early symptoms or prodromes of manic episodes (Healy et al., 2009). It has been shown that these patients with comorbid mood disorders and substance use disorders are at a higher risk of psychiatric hospitalization and greater mood lability (Salloum et al., 2002).

Hypomanic episodes were noted to be associated with a family history of alcohol use disorder as it was noted that these patients had around three times greater odds of experiencing mood disorders specifically hypomanic episodes. This is in line with the findings of Necho et al. (2020) that noted that a family history increased the risk of having comorbid psychiatric conditions in a background of alcohol use disorder.

5.2.3 Prevalence and Factors associated with Psychotic Disorder among AUD patients

72.3% of patients with alcohol use disorder had comorbid psychotic disorders upon enquiry in the current study. A longitudinal study conducted by Hunt et al. (2018) in an Australian population indicated that 24.3% of individuals with schizophrenia had a comorbid alcohol use disorder. These findings were comparable to those by Nesvag et al. (2015) in Norway who determined that the prevalence of substance use disorder among patients with schizophrenia is around 25.1%. These studies noted a lower prevalence of comorbid psychotic and substance use disorders compared to the current study. These differences can be accounted for by virtue of the fact that there may have been differences in the study designs and also in the environmental exposures to the patients involved in the study. This was also lower than the previous local prevalence of around 35% of co-occurring AUD and psychiatric disorders including schizophrenia by Ndetei et al. (2008).

An association was noted between gender and the presence of comorbid psychotic disorder with the female gender being less susceptible to having comorbid psychotic disorder. This was consistent with the findings of Boschloo et al. (2011) and Huang et al. (2020) that noted that males were more likely to have comorbid psychiatric disorders with alcohol use disorder. It was also noted that there was a significant association between the occurrence of psychotic disorder and age of the patient at alcohol debut with patients who started taking alcohol at an older age were therefore less likely to suffer psychotic disorders compared to those who started at a younger age. These findings corroborate those of the National Institute on Alcohol Abuse and Alcoholism (1991) that state that psychiatric conditions were worse among those with an earlier age of onset of alcohol use.

5.2.4 Prevalence and Factors associated with generalized anxiety disorders among AUD patients

The current study noted that 49.5% of the 202 patients experienced Generalized Anxiety Disorder (GAD) as a comorbidity with Alcohol Use Disorder (AUD). This was significantly lesser than what was noted that the prevalence of anxiety and depression in AUD in a Dutch population by Boschloo et al. (2011) which was around 20.3%. Mellentin et al. (2015) noted in a Danish population that noted that 12.7% of patients had co-occurring anxiety. The current findings were also in line with Howe et al. (2021) who noted that AUD was a significant predictor of comorbid psychiatric disorders such as anxiety disorders. The differences in prevalence noted between the studies and the existing scientific literature may be due to differences in study setting and environmental conditions, tools used to assess the anxiety symptoms and diagnose anxiety disorders and the sociodemographic factors of the participants.

The figures observed in the current study are closer to the figures observed previously in South Africa which were around 52.4% (Gabriels et al., 2018) and Egypt which was 67% (Mohamed et al., 2020). However, it was roughly similar to what was seen in the Indian population by Nair et al. (2011) who noted a prevalence of mild anxiety of about 60% among AUD patients. This was also noted in a previous study carried out locally by Kwobah et al. (2017) that noted that the prevalence of an anxiety disorder among AUD patients was about 45%. These higher figures are linked possibly to the poorer socioeconomic status and living conditions as it has been shown that youth living in economically disadvantaged locations are more prone to comorbidities and substance use disorders (Fuehrlein et al., 2016).

An association was noted between sex and the presence of GAD as a psychiatric comorbidity among AUD patients with the female patients having twice the odds as male patients to have comorbid anxiety disorder among the alcohol use disorder patients. This is similar to the findings noted in the existing scientific literature whereby Oliva et al. (2018) noted in an Italian population that a greater number of female patients displayed psychiatric comorbidities among substance use patients. However, the current findings were contrary to what was noted by Huang et al. (2020) and Boschloo et al. (2011) that noted that it was commoner to find male patients with comorbid psychiatric disorders. This may be explained by virtue of the fact that the populations may have had different social environments that leads to different burdens of psychiatric illnesses by sex.

5.2.5 Prevalence and factors associated with Obsessive compulsive disorder in AUD patients

29.7% of the patients with AUD had comorbid OCD. This is significantly lower than what was reported by Mancebo et al. (2009) that noted that 70% of patients with comorbid substance use disorders also reported OCD. The differences may have been noted due to differences in study design and also the fact that the study population was sourced from multiple psychiatric treatment facilities leading to a greater variety of patients as compared to the current study.

This was also significantly associated with employment status and was in agreement with the reports of Fuehrlein et al. (2016) that employment had a protective effect against development of comorbid psychiatric and substance use disorders.

5.2.6 Prevalence and Factors associated with Panic Disorders among AUD patients

The current study noted that 43 of the 202 participants (21.3%) experienced panic disorders as a comorbidity with Alcohol Use Disorder (AUD). These rates vary widely in the literature ranging

from 7 to 28%. Otto et al. (1992) noted that approximately 25% of patients seeking treatment for panic disorder had a history of alcohol dependence. It has been hypothesized that panic attacks may be linked to drinking aimed at principally reducing anxiety states and aversive body sensations (Kushner et al., 2001). An association with employment status was noted in that unemployment was linked with a higher rate of comorbid panic disorders and alcohol use disorder. These findings are in line with those of Fuehrlein et al. (2016) who noted that low educational attainment and unemployment was a significant predictor of psychiatric comorbidities among patients with alcohol use disorder.

5.2.7 Prevalence and Factors associated with Post-Traumatic Stress Disorder among AUD p atients

90 of 202 patients with AUD were noted to have comorbid PTSD. This accounted for a prevalence of 44.6%. This was higher than the figures in the existing literature that indicated that PTSD was present in about 27% of AUD patients. These differences may have been noted due to differences in study design and also differences in study population (Halikas et al., 1994).

5.3. Study Limitations

Limitations of the current research study include the cross-sectional design, which limits the ability to draw causal inferences, as well as the use of self-reported measures via the use of questionnaires, which may be subject to recall bias. Another limitation is the limited generalizability of the results of this study as it was carried out in a single psychiatric facility. Future research on psychiatric comorbidities among alcohol use disorder patients should employ longitudinal designs, explore more psychosocial factors that may predispose the patients to and increase the risk of developing

comorbid psychiatric disorders and therefore improve the outcomes and prognoses of these patients. Furthermore, future studies may explore the genetic implications and genomics behind the association between psychiatric comorbidities and AUD among patients.

The study was limited by a small sample size. In the past two years, MNTRH's patient turnout has been affected by the COVID-19 pandemic. If the pandemic persists, it is likely that there will be very few patients who will be attending CSAT for treatment during the study period. Such a small sample size limits the generalizability of the results and inhibit the ability to find significant relationships in the data, thus, warranting the need for future multicenter studies that feature larger sample sizes. This is a single-center study with a limited sample size therefore these results may require further validation by doing a future multi-center study using larger sample sizes

5.4 Conclusions

The prevalence of Major Depressive Episodes among the patients was noted to be about 74.3%. The prevalence of hypomanic episodes was 27.7% while that of panic disorders was 21.3%. Obsessive compulsive disorder, Post-Traumatic Stress Disorder, psychotic disorder and Generalized Anxiety Disorder were observed as comorbidities among 29.7%, 44.6%, 72.3% and 49.5% of the patients respectively. It was noted that a variety of psychiatric comorbidities exist and a high prevalence of these comorbidities was noted among patients with Alcohol Use Disorder (AUD). It was also noted that there were patients with multiple psychiatric comorbidities further contributing to the burden and worsening outcomes. The study established that several factors were associated with increased risk of developing comorbid psychiatric disorders among alcohol use disorder patients including a family history of the psychiatric illness, unemployed status, lower

income, level of education and female gender, specifically for Generalized Anxiety Disorder. These areas are essential to consider when developing effective treatment regimens, designing prevention and intervention strategies in order to curb the high rate of psychiatric comorbidities among patients with alcohol use disorder.

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APPENDICES

Appendix 1: Timeline of Activities

	Activity	Time Frame
1	Proposal writing and submission	Sep 2022 – Feb 2023
2	Approval by KNH Ethics Committee	March – April 2023
3	Data collection	April– June 2023
4	Data entry, analysis, and report writing	June 2023
5	Results presentation and submission of report	July 2023

Appendix 2: Budget Estimate

Item	**Total Cost in Ksh.**
Research fee	3,000
Stationery	18,000
Internet	36,000
Printing and binding fees	21,000
Transport costs	35,000
Statisticians' fees	30,000
Contingencies	7,000
TOTAL	**150,000**

Appendix 3: Informed Consent Form

UNIVERSITY OF NAIROBI (UoN)
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
(254-020) 2726300 Ext 44355

KNH-UoN ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook:https://www.facebook.com/uonknh.erc
Twitter:@UONKNH_ERC
https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL (KNH)
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

PARTICIPANT INFORMATION AND CONSENT FORM

ADULT CONSENT FOR ENROLLMENT IN THE STUDY

(To be administered in English or any other appropriate language e.g Kiswahili translation)

Title of Study: PREVALENCE OF PSYCHIATRIC COMORBIDITY, ASSOCIATED SOCIO-DEMOGRAPHIC FACTORS IN PATIENTS WITH ALCOHOL USE DISORDER IN MATHARI NATIONAL TEACHING AND REFERRAL HOSPITAL

Principal Investigator\and institutional affiliation: DENIS ADALLA

Introduction:

I would like to tell you about a study being conducted by the above listed researcher. The purpose of this consent form is to give you the information you will need to help you decide whether or not to be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide to be in the study or not. This process is called 'informed consent'. Once you understand and agree to be in the study, I will requestyou to sign your name on this form. You should understand the general principles which apply to all participants in medical research:

Your decision to participate is entirely voluntary

You may withdraw from the study at any time without necessarily giving a reason for your withdrawal

Refusal to participate in the research will not affect the services you are entitled to in this health facility or other facilities. We will give you a copy of this form for your records.

Do you want to continue? **YES / NO**

This study has approval by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee protocol No. **P250/03/2023**

WHAT IS THIS STUDY ABOUT?

The researcher listed above is studying the prevalence of psychiatric comorbidity, associated socio-demographic factors in Alcohol Use Disorder patients attending Centre for Substance Abuse Treatment (CSAT) at Mathari Teaching and Referral Hospital (MNTRH). The purpose of the interview and study is to determine Prevalence of Psychiatric Comorbidity, Associated Sociodemographic factors in AUD patients. Participants in this research study will be asked questions about socio-demographic factors and MINI-5.0 Questionnaire.

There will be approximately 361 participants in this study conveniently chosen. We are asking for your consent to consider participating in this.

WHAT WILL HAPPEN IF YOU DECIDE TO BE IN THIS RESEARCH STUDY?

If you agree to participate in this study, the following things will happen:

You will be given a questionnaire and taken to an area where you feel comfortable answering questions. The study will last approximately 25-30 minutes. The study questionnaire will cover topics such as socio-demographic factors, clinical history and seven selected conditions in the MINI-5.0 tool

We will ask for a telephone number where we can contact you if necessary. If you agree to provide your contact information, it will be used only by people working for this study and will never be shared with others. The reasons why we may need to contact you include: Future enrolment into intervention programs in case there is any post-study.

ARE THERE ANY RISKS, HARMS DISCOMFORTS ASSOCIATED WITH THIS

STUDY?

Medical research has the potential to introduce psychological, social, emotional and physical risks. Effort should always be put in place to minimize the risks. One potential risk of being in the study is loss of privacy. We will keep everything you tell us as confidential as possible. We will use a code number to identify you in a password-protected computer database and will keep all of our paper records in a locked file cabinet. However, no system of protecting your confidentiality can be absolutely secure, so it is still possible that someone could find out you were in this study and could find out information about you.

Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. You have the right to refuse to answer any questions in the questionnaire.

It may be embarrassing for you to give history of your alcohol use/abuse. We will do everything we can to ensure that this is done in private.

Also, event recalls may be stressful. This may result in psychological distress, the staff at CSAT will treat you for the inflicted psychological distress.

ARE THERE ANY BENEFITS BEING IN THIS STUDY?

You may benefit by receiving free counselling and health information. I will refer you to resident psychiatrist for care and support where necessary. Also, the information you provide will help us better understand your condition that may lead to better future management. This information is a contribution to science.

WILL BEING IN THIS STUDY COST YOU ANYTHING?

The participant will not incur any costs for the study.

WHAT IF YOU HAVE QUESTIONS IN FUTURE?

If you have further questions or concerns about participating in this study, please call or send a text message to the study staff at the number provided at the bottom of this page.

For more information about your rights as a research participant you may contact the Secretary/Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email uonknh_erc@uonbi.ac.ke.

The study staff will pay you back for your charges to these numbers if the call is for study-related

communication.

WHAT ARE YOUR OTHER CHOICES?

Your decision to participate in research is voluntary. You are free to decline participation in the study and you can withdraw from the study at any time without injustice or loss of any benefits.

CONSENT FORM (STATEMENT OF CONSENT)

Participant's statement

I have read this consent form or had the information read to me. I have had the chance to discuss this research study with a study counselor. I have had my questions answered in a language that I understand.

The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study. I understand that all efforts will be made to keep information regarding my personal identityconfidential.

By signing this consent form, I have not given up any of the legal rights that I have as a participant in a research study.

I agree to participate in this research study:	Yes	No
I agree to have (define specimen) preserved for later study:	Yes	No
I agree to provide contact information for follow-up:	Yes	No

Participant printed name: _____

Participant signature / Thumb stamp: _____ Date: _____

Researcher's statement

I, DENIS ADALLA, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has willingly and freely given his/her consent.

Researcher's Name: DENIS ADALLA **Date**:_____

Signature _____

Role in the study: PRINCIPAL INVESTIGATOR

For more information contact +254711897292 at Mathari National Teaching and Referral Hospital from 8.30 am to 4.30 pm (Monday to Friday)

UNIVERSITY OF NAIROBI (UoN)
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Twitter: @UONKNH_ERC
https://twitter.com/UONKNH_ERC

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Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

FOMU YA TAARIFA NA RIDHAA YA MSHIRIKI

RIDHAA YA MTU MZIMA KWA KUJIANDIKISHA KATIKA MASOMO

(Itasimamiwa kwa Kiingereza au lugha nyingine yoyote inayofaa k.m tafsiri ya Kiswahili)

Kichwa cha Utafiti: KUENEA KWA UGONJWA WA AKILI, MAMBO HUSIKA YA KIJAMII NA KIDEMOGRAFI KWA WAGONJWA WA MATUMIZI YA POMBE KATIKA HOSPITALI YA TAIFA YA MATHARI YA MAFUNDI NA RUFAA.

Mpelelezi Mkuu\na uhusiano wa kitaasisi: DENIS ADALLA

Utangulizi:

Ningependa kukuambia kuhusu utafiti unaofanywa na mtafiti aliyeorodheshwa hapo juu. Madhumuni ya fomu hii ya idhini ni kukupa taarifa utakayohitaji ili kukusaidia kuamua kama uta kuwa mshiriki au la katika utafiti. Jisikie huru kuuliza maswali yoyote kuhusu madhumuni ya utafiti, nini kitatokea ikiwa utashiriki katika utafiti, hatari na manufaa yanayoweza kutokea, haki zako kama mtu wa kujitolea, na kitu kingine chochote kuhusu utafiti au fomu hii ambacho hakiko wazi. Wakati tumejibu maswali yako yote kwa kuridhika kwako, unaweza kuamua kuwa katika utafiti au la. Utaratibu huu unaitwa 'ridhaa iliyoarifiwa'. Ukishaelewa na kukubali kuwa katika

utafiti, nitakuomba utie sahihi jina lako kwenye fomu hii. Unapaswa kuelewa kanuni za jumla zinazotumika kwa washiriki wote katika utafiti wa matibabu:

i. Uamuzi wako wa kushiriki ni wa hiari kabisa
ii. Unaweza kujiondoa kwenye utafiti wakati wowote bila kutoa sababu ya kujiondoa kwako
iii. Kukataa kushiriki katika utafiti hakutaathiri huduma unazostahiki katika kituo hiki cha afya au vituo vingine. Tutakupa nakala ya fomu hii kwa rekodi zako.

Je, wataka kuendelea? **NDIO** au **LA**

Utafiti huu umeidhinishwa na Itifaki ya Kamati ya Maadili na Utafiti ya Hospitali ya Kitaifa ya Kenyatta-Chuo Kikuu cha Nairobi Namba. **P250/03/2023**

SOMO HILI LINAHUSU NINI?

Mtafiti aliyeorodheshwa hapo juu anachunguza kuenea kwa magonjwa ya akili, sababu zinazohusiana za kijamii na idadi ya watu katika Wagonjwa wa Matatizo ya Matumizi ya Pombe wanaohudhuria Kituo cha Matibabu ya Dawa za Kulevya (CSAT) katika Hospitali ya Kufundisha na Rufaa ya Mathari (MNTRH). Madhumuni ya mahojiano na utafiti ni kuamua Kuenea kwa Ugonjwa wa Akili, Sababu Zinazohusishwa za kijamii na demografia katika wagonjwa wa AUD. Washiriki katika utafiti huu wataulizwa maswali kuhusu vipengele vya demografia ya kijamii na Hojaji ya MINI-5.0.

Kutakuwa na takriban washiriki 361 katika utafiti huu waliochaguliwa kwa urahisi. Tunaomba idhini yako ili kuzingatia kushiriki katika hili.

NINI KITAENDELEA UKIAMUA KUWA KATIKA UTAFITI HUU?

Ukikubali kushiriki katika utafiti huu, mambo yafuatayo yatafanyika:

Utapewa dodoso na kupelekwa eneo ambalo unahisi vizuri kujibu maswali. Utafiti utachukua takriban dakika 25-30. Hojaji ya utafiti itashughulikia mada kama vile mambo ya kijamii na idadi ya watu, historia ya kliniki na hali saba zilizochaguliwa katika zana ya MINI-5.0.

Tutaomba nambari ya simu ambapo tunaweza kuwasiliana nawe ikibidi. Ukikubali kutoa maelezo yako ya mawasiliano, yatatumiwa na watu wanaofanya kazi katika utafiti huu pekee na kamwe

hayatashirikiwa na wengine. Sababu ambazo tunaweza kuhitaji kuwasiliana nawe ni pamoja na: Uandikishaji wa siku zijazo katika programu za kuingilia kati ikiwa kuna masomo yoyote ya baada ya masomo.

JE, KUNA HATARI, MADHARA YOYOTE YANAYOHUSISHWA NA UTAFITI HUU?

Utafiti wa kimatibabu una uwezo wa kuanzisha hatari za kisaikolojia, kijamii, kihisia na kimwili. Jitihada zinapaswa kuwekwa kila wakati ili kupunguza hatari. Hatari moja inayoweza kutokea ya kuwa katika utafiti ni kupoteza faragha. Tutaweka kila kitu unachotuambia kama siri iwezekanavyo. Tutatumia nambari ya msimbo kukutambua katika hifadhidata ya kompyuta iliyolindwa na nenosiri na tutaweka rekodi zetu zote za karatasi kwenye kabati ya faili iliyofungwa. Hata hivyo, hakuna mfumo wa kulinda usiri wako unaoweza kuwa salama kabisa, kwa hivyo bado kuna uwezekano kwamba mtu anaweza kujua ulikuwa kwenye utafiti huu na kupata taarifa kukuhusu.

Pia, kujibu maswali katika mahojiano kunaweza kuwa na wasiwasi kwako. Ikiwa kuna maswali yoyote ambayo hutaki kujibu, unaweza kuyaruka. Una haki ya kukataa kujibu maswali yoyote katika dodoso.

Inaweza kuwa aibu kwako kutoa historia ya matumizi/matumizi mabaya yako ya pombe. Tutafanya kila tuwezalo kuhakikisha kuwa hili linafanyika kwa faragha.

Pia, kumbukumbu za tukio zinaweza kuwa zenye mkazo. Hii inaweza kusababisha mfadhaiko wa kisaikolojia, wafanyikazi katika CSAT watakushughulikia kwa shida ya kisaikolojia iliyosababishwa.

JE, KUNA FAIDA YOYOTE KUWA KATIKA UTAFITI HUU?

Unaweza kufaidika kwa kupokea ushauri nasaha bila malipo na maelezo ya afya. Nitakuelekeza kwa mtaalamu wa magonjwa ya akili mkazi kwa huduma na usaidizi inapobidi. Pia, maelezo utakayotoa yatatusaidia kuelewa vyema hali yako ambayo inaweza kusababisha usimamizi bora zaidi wa siku zijazo. Habari hii ni mchango kwa sayansi.

JE, KUWA KWENYE SOMO HILI LITAKUGHARIMU LOLOTE?

Mshiriki hatalipa gharama zozote za utafiti.

VIPI IKIWA UNA MASWALI BAADAYE?

Ikiwa una maswali zaidi au wasiwasi kuhusu kushiriki katika utafiti huu, tafadhali piga simu au

tuma ujumbe mfupi wa maandishi kwa mpelelezi mkuu kwa nambari iliyotolewa chini ya ukurasa huu.

Kwa maelezo zaidi kuhusu haki zako kama mshiriki wa utafiti unaweza kuwasiliana na Katibu/Mwenyekiti, Hospitali ya Kitaifa ya Kenyatta-Kamati ya Maadili na Utafiti ya Chuo Kikuu cha Nairobi Nambari 2726300 Ext. 44102 barua pepe uonknh_erc@uonbi.ac.ke.

Wafanyikazi wa utafiti watakurudishia malipo yako kwa nambari hizi ikiwa simu ni ya mawasiliano yanayohusiana na masomo.

UCHAGUZI WAKO MENGINE NI GANI?

Uamuzi wako wa kushiriki katika utafiti ni wa hiari. Uko huru kukataa kushiriki katika utafiti na unaweza kujiondoa kwenye utafiti wakati wowote bila dhuluma au hasara ya manufaa yoyote.

FOMU YA RIDHAA (TAARIFA YA RIDHAA)

Kauli ya mshiriki

Nimesoma fomu hii ya idhini au nimesomewa maelezo. Nimepata nafasi ya kujadili utafiti huu na mshauri wa utafiti. Nimejibiwa maswali yangu kwa lugha ninayoielewa.

Hatari na faida zimeelezewa kwangu. Ninaelewa kuwa ushiriki wangu katika utafiti huu ni wa hiari na kwamba ninaweza kuchagua kujiondoa wakati wowote. Ninakubali kwa uhuru kushiriki katika utafiti huu. Ninaelewa kuwa juhudi zote zitafanywa ili kuweka maelezo kuhusu utambulisho wangu wa kibinafsi kuwa siri.

Kwa kutia saini fomu hii ya idhini, sijaacha haki zozote za kisheria nilizo nazo kama mshiriki katika utafiti wa utafiti.

Ninakubali kushiriki katika utafiti huu	Ndiyo	Hapana
Ninakubali (kufafanua sampuli) kuhifadhiwa kwa ajili ya utafiti wa baadaye	Ndiyo	Hapana
Ninakubali kutoa maelezo ya mawasiliano kwa ufuatiliaji	Ndiyo	Hapana

Jina lililochapishwa la mshiriki : _____

Sahihi ya mshiriki / Muhuri wa kidole gumba: _____ Tarehe: _____

Kauli ya mtafiti

Mimi, DENIS ADALLA, nimeeleza kikamilifu maelezo muhimu ya utafiti huu kwa mshiriki aliyetajwa hapo juu na ninaamini kuwa mshiriki ameelewa na ametoa ridhaa yake kwa hiari na kwa uhuru.

Jina la Mtafiti: DENIS ADALLA **Tarehe**:_____

Sahihi: _____

Jukumu katika utafiti: MPELELEZI MKUU

Kwa maelezo zaidi wasiliana na +254711897292 katika Hospitali ya Taifa ya Mafunzo na Rufaa ya Mathari kuanzia saa 8.30 asubuhi hadi saa 4.30 jioni (Jumatatu hadi Ijumaa)

Appendix 4: Questionnaire

Part 1: Socio-Demographic Data

1. Patient's code _____

2. Age (in years)

   18-22 [ ]

   23-27 [ ]

   28-32 [ ]

   33-37 [ ]

   38-42 [ ]

   Over 43 [ ]

3. Please indicate your gender

   Male [ ]

   Female [ ]

4. What is your marital status?

   Single [ ]

   Married [ ]

   Widowed [ ]

5. What is your employment status?

   Employed [ ]

   Unemployed [ ]

   Self-employed [ ]

6. What is your daily income in Ksh?

0 – 500 [ ]

501-1000 [ ]

1001 – 1500 [ ]

1501 – 2000 [ ]

2001 – 2500 [ ]

2501-3000 [ ]

3001-3500 [ ]

3501-4000 [ ]

4001-4500 [ ]

4501-5000 [ ]

Over 5000 [ ]

7. What is your highest level of education?

No school [ ]

Primary [ ]

Secondary [ ]

College [ ]

Bachelor's degree [ ]

Master's degree [ ]

Doctorate degree [ ]

Professional degree [ ]

8. What is your religion?

Catholic [ ]

Protestant [ ]

Muslim [ ]

Others [ ]

Part 2: Clinical History

1. At what age did you start drinking alcohol? _____

2. Are there members of your family that have, recently or in the past, been diagnosed with alcohol use disorders?

Yes [ ]

No [ ]

3. Comorbidities

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---------- ---------- ----------

Part 3: MINI 5.0

A. MAJOR DEPRESSIVE EPISODE

TUKIO LA SONONA

A1	Have you been consistently depressed or down, most of the day, nearly every day, for the past two weeks?	NO	YES	1
	Je, ulishawahi kukosa raha muda mwingi wa siku, karibu kila siku, kwa muda wa wiki mbili zilizopita?	HAPANA	NDIYO	1
A2	In the past two weeks, have you been less interested in most things or less able to enjoy the things you used to enjoy most of the time ?	NO	YES	2
	Katika wiki mbili zilizopita, je, umekosa hamu/ari katika vitu vingi au kukosa raha kwa muda mwingi katika vitu vilivyokuwa vikikufurahisha ?	HAPANA	NDIYO	2
	IS A1 OR A2 CODED YES?	NO	YES	
	JE, KIPENGELE A1 AU A2 KIMEJIBIWA NDIYO?	HAPANA	NDIYO	
A3	Over the past two weeks, when you felt depressed and/or uninterested:			
	Katika kipindi cha wiki mbili zilizopita, ulipojisikia kukosa raha na / au kutokuwa na ari:			
A	Was your appetite decreased or increased nearly every day or did your weight decrease or increase without trying intentionally? (i.e., ± 5 % of body weight or ± 3,5 kg or ± 8 lbs., for a 70 kg / 120 lbs. person in a month)	NO	YES	3
	Je, hamu yako ya kula ilipungua au kuongezeka, karibu kila siku? Uzito wako ulipungua au uliongezeka bila wewe kukusudia? (yaani ± 5 % ya uzito wako au kg. 3.5 katika mwezi)	HAPANA	NDIYO	3
	IF YES TO EITHER, CODE YES	NO	YES	
	IWAPO JIBU NI NDIYO KWA LOLOTE, JAZA NDIYO	HAPANA	NDIYO	
B	Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening, or sleeping excessively)?	NO	YES	4

	Je, ulipata shida ya usingizi karibu kila siku? (tabu ya kupata usingizi, kukatika usingizi katikati ya usiku, kuamka mapema sana, au kulala mno)	HAPANA	NDIYO	4
C	Did you talk or move more slowly than normal or were you fidgety, restless orC having trouble sitting still, almost every day?	NO	YES	5
	Je, ulikuwa ukiongea au kutembea pole pole zaidi kuliko kawaida yako, auulikuwa na hali ya kutotulia, au kuwa na tatizo la kukaa kwa utulivu karibukila siku?	HAPANA	NDIYO	5
D	Did you feel tired or without energy, almost every day?	NO	YES	6
	Je, ulijisikia mchovu au kutokuwa na nguvu karibu kila siku?	HAPANA	NDIYO	6
E	Did you feel worthless or guilty, almost every day?	NO	YES	7
	Je, ulijisikia huna thamani au kuwa na hali ya kujilaumu karibu kila siku?	HAPANA	NDIYO	7
F	Did you have difficulty concentrating or making decisions, almost every day?	NO	YES	8
	Je, ulikuwa na matatizo ya kuwa makini au kufanya maamuzi karibu kila siku?	HAPANA	NDIYO	8
G	Did you repeatedly consider hurting yourself, feel suicidal, or wish that you were dead?	NO	YES	9
	Je, mara kwa mara ulifikiria kuhusu kujiumiza, au kutaka kujiua, au bora ufe?	HAPANA	NDIYO	9
A4	ARE 3 OR MORE A3 ANSWERS CODED YES? (OR 4 A3 ANSWERS IF A1 OR A2 ARE CODED NO)	NO	YES	
	JE, VIPENGELE 3 AU ZAIDI VYA A3 VIMEJIBIWA NDIYO? (AU MAJIBU 4 YA A3 IKIWA AI AU A2 VIMEJIBIWA HAPANA)	HAPANA	NDIYO	
		MAJOR DEPRESSIVEEPISODE CURRENT		
	IF PATIENT MEETS CRITERIA FOR MAJOR DEPRESSIVE EPISODE CURRENT:	*TUKIO LA SONONA WAKATI KWA SASA*		

	IKIWA MGONJWA ATAFIKIA VIGEZO VYA TUKIO LA SONONA KWA SASA:			
	During your lifetime, did you have other periods of two weeks or more whenyou felt depressed or uninterested in most things, and had most of theproblems we just talked about?	NO	YES	10
	Katika maisha yako, uliwahi kuwa na kipindi kingine cha wiki mbili au zaidi ambapo ulikosa raha au kukosa ari katika mambo mengi na kwamba umekuwana shida kama zile tulizokwishazizungumza?	HAPANA	NDIYO	10
	Was there an interval of at least 2 months without depression and/or lost ofb interest between your current episode and your last episode of depression?	NO	YES	11
	Je, kulikuwa na kipindi cha angalau miezi 2 bila hali ya kukosa raha na /au kupoteza ari kati ya wakati huu na ulipokuwa na hali hii siku za nyuma?	HAPANA	NDIYO	11
	IS A5b CODED YES?	NO	YES	
	JE, KIPENGELE A5b KIMEJIBIWA NDIYO?	HAPANA	NDIYO	

MAJOR DEPRESSIVE EPISODE PAST
TUKIO LA SONONA WAKATI ULIOPITA

D. HYPO-MANIAC EPISODE

TUKIO LA SONOMA NDOGO

D1 a.	Have you ever had a period of time when you were feeling "up" or "high" or so full of energy or full of yourself that you got into trouble, or that other people thought you were not your usual self? (Do not consider times when you were intoxicated on drugs or alcohol) IF PATIENT IS PUZZLED OR UNCLEAR ABOUT WHAT YOU MEAN BY "UP" OR "HIGH", CLARIFY AS FOLLOW : By "up" or "high" I mean : having elated mood, increased energy, needing less sleep, having rapid thoughts, being full of ideas, having an increase in productivity, creativity, motivation or impulsive behavior	NO	YES	1
	Je, ulishawahi kwa kipindi Fulani kujisikia una hali ya juu, au umejawa na nguvu au umesongwa kiasi cha kupatashida, au kwamba watu kukudhania kuwa sio mtu wa kawaida? (usichukulie muda ambao ulikuwa umedhurikakwa madawa au pombe) KAMA MGONJWA ANAONEKANA KUTOELEWA MAANA YA "HALI YA JUU", FAFANUA KAMA IFUATAVYO : Hali ya juu ina maana ya kuwa na hali ya furaha; kuhitaji usingizi mchache;kuwa na fikra zaharaka; kusongwa na mawazo; kuongezeka katika tija, ubunifu, motisha au tabia ya kuamua ghafla	HAPANA	NDIYO	1
b.	IF YES : Are you currently feeling "up" or "high" or full of energy?	NO	YES	2
	KAMA JIBU NI NDIYO : Je, sasa hivi unajisikia kuwa na hali ya juu au kujawa na nguvu?	HAPANA	NDIYO	2
D2. a.	Have you ever been persistently irritable, for several days, so that you had arguments or verbal or physical fights, or shouted at people outside your family? Have you or others noticed that you have been more irritable or over reacted, compared to other people, even in situations that you felt were justified? (Do not consider times when you were intoxicated on drugs oralcohol)	NO	YES	3
	Je, umeshawahi kuwa mwenye kuudhika upesi kwa muda mrefu, kwa siku nyingi, kiasi kwamba ukawa na mabishano, au mapigano kwa maneno au vitendo, au kuwapigia kelele watu wasiokuwa wa familia yako?	HAPANA	NDIYO	3
b.	IF YES : KAMA JIBU NI NDIYO : Are you currently feeling persistently irritable? Je , kwa sasa unajiskia kuwa mwepesi wa kuudhika kwa muda mrefu?	NO HAPANA	YES NDIYO	4
	ARE D1a <u>OR</u> D2a CODED YES ? JE, KIPENGELE D1a <u>AU</u> D2a KIMEJIBIWA NDIYO?	□ NO □ HAPANA	YES NDIYO	

D3	IF D1b OR D2b = YES : EXPLORE ONLY CURRENT EPISODE IF D1b AND D2b = NO : EXPLORE THE MOST SYMPTOMATIC PAST EPISODE KAMA D1 b Au D2 b= NDIYO: CHUNGUZA TUKIO LA SASA TU KAMAD1B NA D2B = HAPANA: CHUNGUZA TUKIO LILILOPITA AMBALO LILIKUWA NA DALILI NYINGI ZAIDI			
	During the time(s) when you felt "high", full of energy and/or irritable did you: Kwa muda ambao ulijiskia hali ya juu, kujawa na nguvu, au mwenye kuudhika upesi, je:			
a.	Feel that you could do things others couldn't do, or that you were an especially important person?	NO	YES	5
	Ulijisikia kuweza kufanya vitu ambavyo wengine hawawezi au kujiona kuwa mtu pekee muhimu	HAPANA	NDIYO	5
b.	Need less sleep (e.g., feel rested after only a few hours sleep)?	NO	YES	6
	Ulihitaji usingizi mchache (kwa mfano, kujisikisa mapumziko baada ya muda mdogo tu wa kulala)?	HAPANA	NDIYO	6
c.	Talk too much without stopping, or so fast that people had difficulty understanding ?	NO	YES	7
	Uliongea sana bila kunyamaza, au kwa haraka zaidi kiasi kwamba watu wakapata tabu ya kuelewa?	HAPANA	NDIYO	7
d.	Have thoughts racing?	NO	YES	8
	Umekuwa na mawazo mengi akilini wakati mmoja	HAPANA	NDIYO	8
e.	Become easily distracted so that any little interruption could distract you ?	NO	YES	9
	Ulikuwa Mtu ambaye ni rahisi kupoteza umakini, hata kidogo inaweza kufanya usiwe na makini?	HAPANA	NDIYO	9
f.	Become so active or physically restless that others were worried about you?	NO	YES	10
	Ulikuwa kwa hali ya kutotulia kiasi kwamba watu wengine wakapata wasiwasi juu yako?	HAPANA	NDIYO	10
g.	Want so much to engage in pleasurable activities that you ignored the risks or consequences (e.g., spending sprees, reckless driving, or sexual indiscretions)?	NO	YES	11
	Ulitaka sana kujiingiza katika shughuli za starehe na kutojali hatari zake au matokeo yake(mfano, kufanya shamrashamra , udereva wa kizembe, au ngono bila kujihadhari)?	HAPANA	NDIYO	11
	ARE 3 OR MORE D3 ANSWERS CODED YES OR 4 IF D1a = NO (PAST EPISODE) OR D1b = NO (CURRENT EPISODE)?	□ NO	YES	
	JE, VIPENGELE 3 AU ZAIDI VYA D3 VIMEJIBIWA NDIYO AU VIPENGELE 4, IKIWA D1a = HAPANA (TUKIO LILILOPITA) AU D1b = HAPANA (TUKIO LA SASA)	□ HAPANA	NDIYO	

D4	Did these symptoms last at least a week and cause significant problems at home, at work, or at school, or were you hospitalized for these problems?	NO	YES	12
	Je, dalili hizi zilidumu kwa muda wa angalau wiki moja na kusababisha matatizo makubwa nyumbani, kazini, kijamii, au shuleni, au alilazwa hospitalini kwa ajili ya matatizo haya?	HAPANA	NDIYO	12

IF YES TO EITHER, CODE YES
KAMA JIBU NI NDIYO KWA LOLOTE, JAZA NDIYO

IS D4 CODED NO ?
JE, KIPENGELE D4 KIMEJIBIWA HAPANA?

IF YES, SPECIFY IF THE EPISODE EXPLORED IS CURRENT OR PAST KAMA NDIYO, ELEZA NI TUKIO LA SASA AU LILILOPITA

NO HAPANA
YES NDIYO

HYPOMANIAC EPISODE
TUKIO LA MANIA NDOGO

CURRENT .

KWA SASA .

PAST .

LILILOPITA .

IS D4 CODED YES ?
JE, KIPENGELE D4 KIMEJIBIWA NDIYO?

IF YES, SPECIFY IF THE EPISODE EXPLORED IS CURRENT OR PAST

KAMA NDIYO, ELEZA NI TUKIO LA SASA AU LILILOPITA

NO HAPANA
YES NDIYO

MANIC EPISODE
TUKIO LA MANIA

CURRENT •

KWA *SASA* •

PAST •

LILILOPITA .

E. PANIC DISORDER
UGONJWA WA HOFU KUBWA

E1	Have you, on more than one occasion, had spells or attacks when you suddenly felt anxious, frightened, uncomfortable or uneasy, even in situations where most people would not feel that way ? Did the spells peak within 10 minutes ?	NO	YES	1
	Je, kwa mara zaidi ya moja, umekuwa na vipindi vya kujisikia au kupatwa na wasiwasi wa ghafla, hofu, kutotulia au mashaka, hata katika mazingira ambayo watu wengi hawajisikii hivyo? Je, mshituko huo uliisha ndani ya	HAPANA	NDIYO	1
	CODE YES ONLY IF THE SPELLS PEAK WITHIN 10 MINUTES			
	JAZA NDIYO IKIWA TU MSHITUKO HUO ULIISHA NDANI YA DAKIKA KUMI			
	IF E1 = NO, CIRCLE NO IN E5 AND SKIP TO F1 KAMA E1 = HAPANA, JAZA HAPANA KATIKA E5 NA NENDA KIPENGELE F1			
E2	At any time in the past, did any of those spells or attacks come on unexpectedly or spontaneously, or occur in an unpredictable or unprovoked manner ?	NO	YES	2
	Katika wakati wowote uliopita, je, vipindi hivi au mishituko hiyo ilikuja bila kutegemea au kutokea katika namna isiyobashirika au kuchochewa?	HAPANA	NDIYO	2
	IF E2 = NO, CIRCLE NO IN E5 AND SKIP TO F1 KAMA E2 = HAPANA, JAZA HAPANA KATIKA E5 NA NENDA KIPENGELE F1			
E3	Have you ever had one such attack followed by a month or more of persistent fear of having another attack, or worries about the consequences of the attack?	NO	YES	3
	Je, ulishawahi kupata tukio moja kama hilo lililofuatiwa na kipindi cha mwezi mmoja au zaidi cha kujisikia hofu ya tukio jingine au woga wa madhara ya tukio hilo?	HAPANA	NDIYO	3
	IF E3 = NO, CIRCLE NO IN E5 AND SKIP TO F1 KAMA E3 = HAPANA, ZUNGUSHIA HAPANA NA NENDA KIPENGELE F1			
E4	During the worst spell that you can remember:			
	Katika kipindi kibaya zaidi ambacho unakumbuka:			
A	Did you have skipping, racing or pounding of your heart?	NO	YES	4
	Je, moyo wako ulidundadunda, kwenda mbio, au kupiga kwa kasi?	HAPANA	NDIYO	4
B	Did you have sweating or clammy hands?	NO	YES	5
	Je, ulitokwa na jasho au mikono kuwa na kijasho?	HAPANA	NDIYO	5
C	Were you trembling or shaking?	NO	YES	6

	Je, ulitetemeka au kutikisika?	HAPANA	NDIYO	6
D	Did you have shortness of breath or difficulty breathing?	NO	YES	7
	Je, ulipata kutapia hewa au tabu ya kupumua?	HAPANA	NDIYO	7
E	Did you have a choking sensation or a lump in your throat?	NO	YES	8
	Je, ulihisi ni kama kunyongwa au donge kifuani kwako?	HAPANA	NDIYO	8
F	Did you have chest pain, pressure or discomfort?	NO	YES	9
	Je, ulipata maumivu ya kifua, shinikizo au usumbufu?	HAPANA	NDIYO	9
G	Did you have nausea, stomach problems or sudden diarrhea?	NO	YES	10
	Je, ulipata kichefuchefu, matatizo ya tumbo au kuharisha kwa ghafla?	HAPANA	NDIYO	10
H	Did you feel dizzy, unsteady, lightheaded or faint?	NO	YES	11
	Je, ulijisikia kizunguzungu, kutetereka, kichwa chepesi, au kuzirai?	HAPANA	NDIYO	11
I	Did things around you feel strange, unreal, detached or unfamiliar, or did you feel outside of or detached from part or all of your body ?	NO	YES	12
	Je, vitu vilivyokuzunguka uliviona ni vya ajabu, sio halisi, upweke au vya kigeni, au je, ulijisikia upo kando ya, au kujitenga kutoka katika sehemu au mwili wako wote?	HAPANA	NDIYO	12
J	Did you fear that you were losing control or going crazy?	NO	YES	13
	Je, ulihofia kwamba nikama hauwezi dhibiti kila kitu juu yako au umepata wazimu?	HAPANA	NDIYO	13
K	Did you fear that you were dying?	NO	YES	14
	Je, ulihofia kwamba unakufa?	HAPANA	NDIYO	14
L	Did you have tingling or numbness in parts of your body?	NO	YES	15
	Je, ulipatwa na msisimko au ganzi katika sehemu za mwili wako?	HAPANA	NDIYO	15
M	Did you have hot flashes or chills?	NO	YES	16
	Je, ulipatwa na wekundu usoni(kuiva uso) u mzizimo wa baridi ?	HAPANA	NDIYO	16
E5	ARE 4 OR MORE E4 ANSWERS CODED YES?			
	JE, VIPENGELE 4 AU ZAIDI VYA E4 VIMEJIBIWA NDIYO? IF E5 = NO, SKIP TO E7 KAMA E5 = HAPANA, NENDA KIPENGELE E7			
E6	In the past month, did you have such attacks repeatedly (2 or more) followed by persistent fear of having another attack?	NO	YES	17
	Katika mwezi mmoja uliopita, ulipatwa na matukio hayo kwa kujirudiarudia (mara 2 au zaidi) kufuatiwa na hofu ya kupata tukio jingine?	NO	YES	17
	IF E6 = YES, SKIP TO F1 KAMA E6 = NDIYO, NENDA F1			
E7	ARE 1, 2 OR 3 E4 ANSWERS CODED YES?			

NO **YES**

HAPANA **NDIYO**

PANIC DISORDER CURRENT
HOFU KUBWA KWA SASA

NO **YES**

HAPANA **NDIYO**

LIMITED SYMPTOM ATTACKS
LIFETIME

H. OBSESSIVE COMPULSIVE DISORDER
SHAUKU LAZIMISHO

	In the past month, have you been bothered by recurrent thoughts, impulses or images that were unwanted, distasteful, inappropriate, intrusive or distressing? (e.g., the idea that you were dirty, contaminated or had germs, or fear of contaminating others, or fear of harming someone even though you didn't want to, or fearing you would act on some impulse, or fear or superstitions that you would be responsible for things going wrong, or obsessions with sexual thoughts, images or impulses, or hoarding, collecting, or religious obsessions.) DO NOT INCLUDE SIMPLY EXCESSIVE WORRIES ABOUT REAL LIFE PROBLEMS. DO NOT INCLUDE OBSESSIONS DIRECTLY RELATED TO EATING DISORDERS, SEXUAL DEVIATIONS, PATHOLOGICAL GAMBLING, OR ALCOHOL OR DRUG ABUSE BECAUSE THE PATIENT MAY DERIVE PLEASURE FROM THE ACTIVITY AND MAY WANT TO RESIST IT ONLY BECAUSE OF ITS NEGATIVE CONSEQUENCES	NO	YES	1
	Katika mwezi ulioputa, je ulishawahi kukerwa na mawazo yenye kujirudiarudia, misukumo, au fikra ambazo hazihitajiki, za maudhi, zisizostahili, zenye kuingilia, au zenye kuleta shida? (mf: mawazo ya kwamba umchafu, umechafuliwa na vijidudu, au hofu ya kuwachafua wengine, au hofu ya kumdhuru mtu hata kama hukutaka kufanya hivyo, au kuhofia kutenda kwa msukumo, au hofu au imani za kichawi kwamba ungewajibika kwa mambo mabaya, au shauku yenye mawazo ya ngono, fikra au misukumo,au shauku ya kuhodhi, kukusanya au ya kidini). (Usichanganye na wasiwasi juu ya matatizo halisi ya maisha, usichanganye na shauku zinazoendana moja kwa moja na magonjwa ya kula chakula, tabia za uasherati, kamari, au pombe au madawa ya kulevya kwa sababu, mgonjwa anaweza kupata starehe kutokana na tendo hilo na kutaka kujizuia kwa sababu tu ya matokeo hasi ya jambo hilo.	HAPANA	NDIYO	1
	IF H1 = NO, SKIP TO H4			
H2	Did they keep coming back into your mind even when you tried to ignore or get rid of them?	NO	YES	2
	IF H2 = NO, SKIP TO H4			
	JE, yanaendelea kukurudia ndani ya mawazo yako hata wakati unapojaribu kuyasahau au kuyaondoa?	HAPANA	NDIYO	2
H3	Do you think that these obsessions are the product of your own mind and that they are not imposed from the outside?	NO	YES	3
	Je, unadhani kwamba shauku hizi zinatokana na mawazo yako mwenyewe na kwamba hazijalazimishwa kutoka nje?	HAPANA	NDIYO	3
H4	In the past month, did you do something repeatedly without being	NO	YES	4

	able to resist doing it, like washing or cleaning excessively, counting or checking things over and over, or repeating, collecting, arranging things, or other superstitious rituals?			
	Katika mwezi uliopita, je ulifanya kitu kwa kurudiarudia bila kuwa na uwezo wa kujizuia kufanya hivyo, kama vile kuosha au kusafisha sana, kuhesabu, kukagua vitu mara kwa mara, au kurudia, kukusanya, kupanga vitu, au matambiko mangine ya kishirikina.	HAPANA	NDIYO	4
	ARE H3 OR H4 CODED YES ?	NO	YES	
	JE KIPENDELE H3 AU H4 KIMEJIBIWA NDIYO?	HAPANA	NDIYO	
H5	Did you recognize that either these obsessive thoughts and / or these compulsive behaviors you cannot resist doing them, were excessive or unreasonable?	NO	YES	5
	Je ulitambua kwamba kujiwa na mawazo haya au hizi tabia zisizodhibitika zimekuwa ni nyingi mno au zimezidi?	HAPANA	NDIYO	5
H6	Did these obsessive thoughts and / or compulsive behaviors significantly interfere with your normal routine, occupational functioning, usual social activities, or relationships, or did they take more than one hour a day?	NO	YES	6
	Je kujawa na mawazo haya na/au tabia zisizodhibitika kwa kiasi kikubwa kunaingilia zako za kawaida, shughuli za kikazi, kazi za kawaida za kijamii, au mahusiano, au yamechukua zaidi ya saa nzima kwa siku?	HAPANA	NDIYO	6
	IS H6 CODED YES?	**NO**		**YES**

OBSESSIVE COMPULSIVE DISORDER

I. POST-TRAUMATIC STRESS DISORDER

UGONJWA WA MSONGO BAADA YA MATUKIO MABAYA

I1	Have you ever experienced or witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to you or someone else?	NO	YES	1
	Je, umewahi kupata au kushuhudia au kushughulika na matukio mabaya ikiwepo kifo au tishio la kifo au ajali mbaya kwako au mtu mwingine?	HAPANA	NDIYO	1
12	During the past month, have you re-experienced the event in a distressing way (i.e., dreams, intense recollections, flashbacks or physical reactions?	NO	YES	2
	Kwa mwezi uliopita je umewahi kupata tena tukio hilo katika namna ya mashaka (Kama vile, ndoto, mkusanyiko mkali, kumbukumbu za ghafla, au kujibu kwa matendo)?	HAPANA	NDIYO	2
I3	In the past month :			
	Katika mwezi uliopita:			
A	Have you avoided thinking about the event, or have you avoided things that remind you of the event?	NO	YES	3
	Je, umewahi kujizuia kufikiria juu ya tukio hilo, au kujiepusha na vitu vinavyokukumbusha tukio hilo?	HAPANA	NDIYO	3
B	Have you had trouble recalling some important part of what happened?	NO	YES	4
	Je, umepata tabu ya kukumbuka baadhi ya sehemu muhimu juu ya kilichotokea?	HAPANA	NDIYO	4
C	Have you become less interested in hobbies or social activities?	NO	YES	5
	Je umekuwa na mvuto hafifu kwa mambo uyapendayo au kazi za kijamii?	HAPANA	NDIYO	5
D	Have you felt detached or estranged from others?	NO	YES	6
	Je, ulijisikia umejitenga au kutenganisha na wengine?	HAPANA	NDIYO	6
E	Have you noticed that your feelings are numbed?	NO	YES	7
	Je, ulitambua kwamba mawazo yako ni mazito?	HAPANA	NDIYO	7
F	Have you felt that your life would be shortened because of this trauma?	NO	YES	8
	Je, ulijisikia kwamba maisha yako yangekuwa mafupi kutokana na tukio hili?	HAPANA	NDIYO	8
	ARE 3 OR MORE I3 ANSWERS CODED YES?	NO	YES	
	JE, VIPENGELE VITATU AU ZAIDI VYA I3 VIMEJIBIWA NDIYO?	HAPANA	NDIYO	
14	In the past month :			
	Katika mwezi uliopita:			
A	Have you had difficulty sleeping?	NO	YES	9

	Je ulipata tabu ya usingizi?	HAPANA	NDIYO	9
B	Were you especially irritable or did you have outbursts of anger?	NO	YES	10
	Je ulikuwa mwenye kuudhika upesi, au ulipatwa na milipuko ya hasira?	HAPANA	NDIYO	10
C	Have you had difficulty concentrating?	NO	YES	11
	Je, umepata tabu ya kuwa makini?	HAPANA	NDIYO	11
D	Were you nervous or constantly on your guard?	NO	YES	12
	Je, ulikuwa na wahaka/wasiwasi au muda wote kujilinda?	HAPANA	NDIYO	12
E	Were you easily startled?	NO	YES	13
	Je, ulikuwa mwepesi wa kushtushwa?	HAPANA	NDIYO	13
	ARE 2 OR MORE I4 ANSWERS CODED YES?	NO	YES	
	JE VIPENGELE 2 AU ZAIDI YA I4 VIMEJIBIWA NDIYO?	HAPANA	NDIYO	
I5	During the past month, have these problems significantly interfered with your work or social activities, or caused significant distress?	NO	YES	14
	Katika mwezi uliopita, je matatizo haya kwa kiasi kikubwa yalivuruga utendaji wa kazi yako au shughuli za kijamii au kusababisha mashaka makubwa?	HAPANA	NDIYO	14
	IS I5 CODED YES? JE I5 IMEJIBIWA NDIYO?	**NO**	**YES**	

POSTTRAUMATIC STRESS DISORDER

CURRENT •

L. PSYCHOTIC DISORDERS
MAGONJWA YA SAIKOSIS

ASK FOR AN EXAMPLE OF EACH QUESTION ANSWERED POSITIVELY. CODE YES ONLY IF THE EXAMPLES CLEARLY SHOW A DISTORTION OF THOUGHT OR OF PERCEPTION OR IF THEY ARE NOT CULTURALLY APPROPRIATE.
BEFORE CODING, INVESTIGATE WHETHER DELUSIONS QUALIFY AS « BIZARRE ».
DELUSIONS ARE BIZARRE IF : CLEARLY IMPLAUSIBLE, ABSURD, NOT UNDERSTANDABLE, AND CANNOT DERIVE FROM ORDINARY LIFE EXPERIENCE.
HALLUCINATIONS ARE RATED BIZARRE IF : A VOICE COMMENTS ON THE PERSON'S THOUGHTS OR BEHAVIOR, OR WHEN TWO OR MORE VOICES ARE CONVERSING WITH EACH OTHER.
OMBA MFANO KWA KILA SWALI LINAJIBIWA NDIYO. JAZA NDIO IWAPO TU MIFANO INAONYESHA WAZI MABADILIKO YAMAWAZO AU UTAMBUZI AU KAMA HAIHUSIANI NA MILA NA DESTURI KABLA YA KUJAZA CHUNGUZA IWAPO IMANI ZA UWONGO ZINA SIFA ZA KUWA SI ZA KAWAIDA.
IMANI POTOFU AMBAZO "SI ZA KAWAIDA" KAMA: ISIYOWEZEKANA KUWA KWELI, UPUUZI, ISIYOELEWEKA, NAISIYOTOKANA NA MAISHA YA KAWAIDA.
HISIA POTOFU AMBAZO "SI ZA KAWAIDA" NI KAMA: SAUTI KUELEZEA JUU YA MAWAZO YA MTU AU TABIA, AU WAKATI SAUTI 2 AU ZAIDI ZINAZUNGUMZA ZENYEWE.

	Now I'm going to ask you about unusual experiences that some individuals may experience. Sasa ninakuuliza kuhusu matukio yasiyo ya kawaida ambayo watu wanaweza pitia				
L1 A	Have you ever believed that people were spying on you, or that someone wasplotting against you, or trying to hurt you ? Je, umewahi kuamini kwamba watu wanakupeleleza, au kwamba mtu anapanga njama juu yako, au kujaribu kukudhuru? KUMBUKA: Ulizia mifano ili kupata uhalisia.	NO	YES	BIZARRE YES	1
	IF YES : Do you currently believe these things	NO	YES	YES	2
B	? KAMA NDIYO: Je kwa sasa unaamini mambo haya?			□ L6a	
L2 A	Have you ever believed that someone was reading your mind or could hearyour thoughts or that you could actually read or hear what another person was thinking ? Je, umewahi kuamini kwamba mtu alikuwa anasoma mawazo yako au kuweza kusikia mawazo yako, au kwamba wewe kuweza kusoma mawazo ya mtumwingine au kusikia kile anachowaza mtu mwingine?	NO		YES	3
		NO		YES	4

B	IF YES : Do you currently believe these things ? KAMA NDIYO: Je kwa sasa unaamini mambo haya?			□ L6a	
L3 A	Have you ever believed that someone or some force outside of yourself put thoughts in your mind that were not your own, or made you act in a way thatwas not your usual self ? Have you ever felt that you were possessed?	NO		YES	5

	Je , umewahi kuamini kwamba mtu au nguvu Fulani kutoka nje zimewekamawazo ndani yako na kwamba umekuwa siyo wewe mwenyewe, au imekufanya utende matendo ambapo haikuwa kawaida yako? Je, umewahi kujisikia kama kwamba umemilikiwa? *TABIBU*: ULIZIA MIFANO NA UONDOE YEYOTE ISIYOHUSIANANA KURUKWA AKILI				
B	IF YES : Do you currently believe these things ? KAMA NDIYO: Je, kwa sasa unaamini mambo haya?	NO		YES □ L6a	6
L 4 a	Have you ever believed that you were being sent special messages through the TV, radio or newspaper, or that a person you did not personally know was particularly interested in you ? Je, umewahi kuamini kwamba umekuwa ukipokea ujumbe maalum kupitia TV,redio, au magazeti, au kwamba mtu usiyemjua akawa amevutiwa na wewe?	NO	YES	YES	7
B	IF YES : Do you currently believe these things ? KAMA NDIYO: Je, kwa sasa unaamini mambo haya?	NO	YES	YES □ L6a	8
L 5 a	Have your relatives or friends ever considered any of your beliefs strange orout of reality ? ANY DELUSIONAL IDEAS NOT EXPLORED IN QUESTIONS L1 TO L4, E.G., OF GRANDIOSITY, RUIN, GUILT, HYPOCONDRIASIS,... Je, ndugu zako au marafiki walishawahi kuona kwamba unavyohisia auamini ni za ajabu au si za kawaida? Tafadhali, naomba mifano. *MSAILI:* Jaza ndiyo ikiwa tu mifano inaonyesha wazi kuwa ni imani za uwongo ambazo hazikuelezwa katika maswali L1 mpaka L4, mfano, zakujifaharisha, za unyong'onyevu, za maangamizi, kuwa na hatia, n.k.	NO	YES	YES	9
B	IF YES : Do they currently consider your beliefs strange ? KAMA NDIYO: Je, kwa sasa wanaona nikama unayodhania au kuamini niza ajabu?	NO	YES	YES	10

L6 A	Have you ever heard things other people couldn't hear, such as voices? HALLUCINATIONS ARE CODED « BIZARRE » ONLY IF PATIENT ANSWERS YES TO THE FOLLOWING : Did you hear a voice commenting on your thoughts or behavior, or did youhear two or more voices talking to each other ? Je umewahi kusikia mambo ambayo wengine hawasikii, kama vile sauti?HISIA POTOFU ZINAKUWA "SI ZA KAWAIDA" IKIWA TU MGONJWA ANAJIBU NDIYO KATIKA SWALI LIFUATALO: Je ulisikia sauti ikielezea mawazo yako au tabia au kusikia sauti mbili au zaidi zikizungumza zenyewe?	NO	YES	YES	11
	IF YES: Have you heard these things in the past month ?	NO	YES	YES	12
B	KAMA NDIYO: Je, umesikia vitu hivi ndani ya mwezi 1 uliopita?			□ L8b	

L7 A	Have you ever had visions when you were awake or have you ever seenthings other people couldn't see? CODE YES ONLY IF THE VISIONS ARE CULTURALLY INAPPROPRIATE. Je, umewahi ona vitu mchana au ukiwa umeamka ilihali watu wenginehawavioni? TABIBU: chunguza ili kujua kama havihusiani na mambo ya kimila nadesturi?	NO	YES	13
B	IF YES: Have you seen these things in the past month? : INTERVIEWER'S JUDGMENT:	NO	YES	14
L8 b	KAMA NDIYO: Je umeviona vitu hivi katika mwezi mmoja uliopita?UAMUZI WA TABIBU Is the patient currently exhibiting incoherence, disorganized speech, or marked loosening of associations? JE MGONJWA KWA SASA ANAONYESHA MAMBO YASIYOELEWEKA, MANENO YASIYONA MPANGILIO, AU MAMBO YASIYOUNGANIKA.	NO	YES	15

L9 b L9 b	Is the patient currently exhibiting disorganized or catatonic behavior? JE KWA SASA MGONJWA ANAONYESHA TABIA ISIYOELEWEKA AU KUZUBAA?	NO	YES	16
	Are negative symptoms of schizophrenia, e.g. significant affective flattening, poverty of speech (alogia) or an inability to initiate or persist in goal directed activities (avolition), prominent during the interview?			
L10b	JE, DALILI HASI ZA SKIZOFRENIA, MFANO KUTODHIHIRISHA HISIA, UPUNGUFU WA MANENO YA KUSEMA (KUTOSEMA) AU KUTOWEZA KUANZISHA AU KUDUMU	NO	YES	17

	KATIKA SHUGHULI MAALUM, ZINAONEKANA WAKATI WA USAILI?			
L11	From l1 to l10: Are 1 or more « b » questions coded YES bizarre? OR Are 2 or more « b » questions coded YES (rather than Yes bizarre)?	**NO**		**YES**
		PSYCHOTIC SYNDROME CURRENT		
L11	JE KIPENDELE KIMOJA AU ZAIDI VYA MASWALI (b) KIMEJIBIWANDIYO SI YA KAWAIDA?			
	AU			
	JE, VIPENGELE 2 AU ZAIDI VYA MASWALI (b) VIMEJIBIWA NDIYO			
	(BADALA YA NDIYO SI YA KAWAIDA).			
L12	From L1 to L7, are 1 or more « a » questions coded YES bizarre OR are 2 or more « a » questions coded YES (rather than YES BIZZARRE) (CHECK THAT THE 2 SYMPTOMS OCCURRED DURING THE SAME TIME PERIOD) OR L11 is coded YES?			
		NO		**YES**
		PSYCHOTIC SYNDROME LIFETIME		

L12	JE, KIPENGELE 1 AU ZAIDI YA MASWALI (a) VIMEPITIWA NDIYOSI YA KAWAIDA? AU JE, VIPENGELE 2 AU ZAIDI VYA MASWALI (a) VIMEJIBIWA NDIYO (BADALA YA NDIYO SI YA KAWAIDA) UAMUZI WA TABIBU CHUNGUZA KAMA DALILI 2 ZILITOKEA WA KATI MMOJAAU JE, KIPENGELE L11 KIMEJIBIWA NDIYO?	**HAPANA**	**NDIYO**	

L13a L13a	If L12 is coded YES or at least one YES from L1 to L7; Does the patient code positive for either Major Depressive Episode (current or past) or Manic Episode (current or past)? KAMA L12 IMEJIBIWA NDIYO NA ANGALAU NDIYO MOJA KUTOKA L1 MPAKA L7: JE DALILI HIZO ZIMEJIBIWA NDIYO KWA AIDHA TUKIO LA SONONA, (KWA SASA) AU TUKIO LA MANIA, (KWA SASA AU MUDA ULIOPITA)?	□ NO	YES	
B	You told me earlier that you had period(s) when you felt depressed/ high/ persistently irritable. Were the beliefs and experiences you just described (SYMPTOMS CODED YES FROM L1 TO L7) restricted exclusively to times when you were feeling depressed / high / irritable? Kama L13 imejibiwa ndiyo:	NO	YES	18

b Uliniambia mwanzoni kwamba kulikuwa na vipindi ambavyo ulijisikia(huzuni/hali ya juu/mwepesi wa kuudhika mara zote). Je, kuamini kwako na matukio uliyoyaeleza hivi punde (dalili zimejibiwa ndiyo kutoka L1 mpaka L7) vimekuwepo pale tu ulipojisikia huzuni/hali yajuu/mwenyekuudhika?

IS L13b CODED YES?
JE, L13b IMEJIBIWA NDIYO?

NO	YES
MOOD DISORDER WITHPSYCHOTIC FEATURES CURRENT	

O. GENERALIZED ANXIETY DISORDER

UGONJWA WA WASIWASI MKUBWA

O1	Have you worried excessively or been anxious about several things of day to day life, at work, at home, in your close circle over the past 6 months? DO NOT CODE YES IF THE FOCUS OF THE ANXIETY IS CONFINED TO ANOTHER DISORDER EXPLORED PRIOR TO THIS POINT SUCH AS HAVING A PANIC ATTACK (PANIC DISORDER), BEING EMBARRASSED IN PUBLIC (SOCIAL PHOBIA), BEING CONTAMINATED (OCD), GAINING WEIGHT (ANOREXIA NERVOSA)...	NO	YES	1
	Are these worries present most days?	NO	YES	2
	Je, ulikuwa na woga sana au kupata wasiwasi juu ya mambo mawili au zaidi(mf. Pesa, afya ya watoto, msiba) kwa kipindi cha miezi 6 iliyopita? Zaidi ya watu wengi webgine wanavyokuwa?	HAPANA	NDIYO	1
	Je, woga huu unakuwepo karibu siku zote?	HAPANA	NDIYO	2
O2	Do you find it difficult to control the worries or do they interfere with your ability to focus on what you are doing?	NO	YES	3
	Je unapata tabu kujizuia na woga, au je inavuruga uwezo wako wa kuwa makini kwa unachokifanya?	HAPANA	NDIYO	3
	FROM 03a to O3f, CODE NO THE SYMPTOMS CONFINED TO FEATURES OF ANY DISORDER EXPLORED PRIOR TO THIS POINT			
O3	When you were anxious over the past 6 months, did you, almost every day:	NO	YES	
	Waakati ulipokuwa na wasiwasi katika miezi 6 iliyopita, je, muda mwingi:	HAPANA	NDIYO	
A	Feel restless, keyed up or on edge?	NO	YES	4
	Ulijisikia kutotulia, kuamshwa, au mwenye kiherehere?	HAPANA	NDIYO	4
B	Feel tense?	NO	YES	5
	Ulijisikia kukakamaa?	HAPANA	NDIYO	5
C	Feel tired, weak or exhausted easily?	NO	YES	6
	Ulijisikia kuchoka, mdhaifu, au kuchoka mapema?	HAPANA	NDIYO	6
D	Have difficulty concentrating or find your mind going blank?	NO	YES	7
	Ulipata tabu ya kuwa makini, au kuona unapoteza kumbukumbu?	HAPANA	NDIYO	7
E	Feel irritable?	NO	YES	8
	Ulijisikia mwenye kuudhika upesi?	HAPANA	NDIYO	8
F	Have difficulty sleeping (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?	NO	YES	9
	Ulipata tabu ya usingizi (tabu ya kupata usingizi, kuamka katikati ya usiku, kuamka mapema asubuhi, au kulala mno)?	HAPANA	NDIYO	9
	ARE 3 OR MORE O3 ANSWERS CODED YES?			

NO **YES**

GENERALIZED ANXIETY DISORDER

	JE VIPENGELE 3 AU ZAIDI VYA O3 VIMEJIBIWA NDIYO			

Appendix 5: Table Showing CSAT's Monthly Attendance Data

	2020			2021			2022		
Month	**New**	**Revisits**	**Total**	**New**	**Revisits**	**Total**	**New**	**Revisits**	**Total**
Jan	18	48	**66**	44	46	**90**	85	102	**187**
Feb	10	66	**76**	51	68	**119**	77	90	**167**
Mar	4	7	**11**	49	78	**127**	105	113	**218**
Apr	Covid	Covid	**0**	28	50	**78**	88	142	**230**
May	Covid	Covid	**0**	40	89	**129**	82	151	**233**
Jun	Covid	Covid	**0**	57	73	**130**	90	101	**191**
Jul	Covid	Covid	**0**	43	69	**112**	87	95	**182**
Aug	Covid	Covid	**0**	69	124	**193**	83	97	**180**
Sep	Covid	Covid	**0**	47	78	**125**	87	124	**211**
Oct	33	39	**72**	48	84	**132**	98	130	**228**
Nov	35	58	**93**	116	137	**253**	84	89	**173**
Dec	37	70	**107**	45	45	**90**	93	99	**192**
Total	**137**	**288**	**425**	**637**	**941**	**1,578**	**1059**	**1316**	**2375**