PREVALENCE OF ADVERSE CHILDHOOD EXPRIENCES (ACEs) AMONG PATIENTS WITH SUBSTANCE USE DISORDER AT MATHARI HOSPITAL

Dr. Sarah Kanana

Department of Psychiatry, University of Nairobi

A thesis submitted in partial fulfillment for the award of degree of Master of Medicine (Psychiatry).

2016

DECLARATION

This research study is my original work and has not been presented for a degree in any other University.

Dr. Sarah Kanana

P.O BOX 6495-00200 Nairobi

Tel: +254725756272

sarahkiburi@gmail.com

Signature……..

This research study report has been submitted for examination with our approval as University supervisors.

Prof. Mary Kuria

MbChB (Nrb), Mmed Psych (Nrb), PHD (Nrb)

Department of Psychiatry (University of Nairobi)

P.O BOX 19676-00202 NAIROBI

wangari2@yahoo.com

Signature…….

Prof. Anne Obondo

BA Sociology (India), MSW (India), PG Dip.(UK), PHD(Nrb)

Department of Psychiatry (University of Nairobi)

P.O BOX 19676-00202 NAIROBI

Nnobondo2@gmail.com

Signature……

LIST OF ABBREVIATIONS

ACE-IQ	Adverse Childhood experiences-International Questionnaire
ACEs	Adverse childhood experiences
ASSIST	Alcohol and substance involvement screening tool
CDC	Centers for disease control and prevention
CI	Confidence Interval
CRF	Corticotrophin Release Factor
DALY	Disability Adjusted Life Years
HPA Axis	Hypothalamic-Pituitary-Adrenal Axis
IQR	Interquartile Range
NCDC	National scientific council on developing child
NE	Norepinephrine
NIDA	National Institute on Drug Abuse
OR	Odds Ratio
RR	Risk Ratio
SAM axis	Sympathetic Adreno-Medullary Axis
SAMHSA	Substance abuse and mental health services administration
SD	Standard Deviation
WHO	World Health Organization

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Background: Substance use disorders are a major cause of health and social problems worldwide. Research evidence shows a strong graded relationship of adverse childhood experiences and substance use in adulthood.

Aim: This study aimed at determining the prevalence of adverse childhood experiences and their association with substance use among patients with substance use disorders.

Method: 134 patients aged 18 years and above and were receiving inpatient management for substance use disorders at Mathari Hospital were interviewed. A mental state exam was done to rule out active psychopathology and screening for adverse childhood experiences and substance use done using ACE-IQ and ASSIST tools, respectively.

Results: Of the 134 participants 118 were males (88.1%) and 16 females (11.9%). The median age was 28 years (inter quartile range: 25-30). Alcohol was the substance most used reported by 86.6%, followed by tobacco and cannabis with cocaine and opioids being the least used. Only 9.7% reported use a single substance. 89.6% reported having experienced at least one ACE, 14.3% reported only one ACE and 46.3% had experienced ≥4 ACES. . The ACEs associated with substance use were, emotional neglect, household member with mental illness and household member treated violently.

Conclusion: There is a high prevalence of adverse childhood experiences among patients on treatment for substance use disorders at Mathari hospital. Alcohol, tobacco, cannabis and khat are the most commonly used substances. In addition, adverse childhood experiences were associated with substance use.

CHAPTER ONE

1.0 Introduction

Adverse childhood experiences (ACEs) are some of the most intensive and frequently occurring sources of stress that children may suffer during early life (WHO 2009). They include incidences of childhood abuse and household dysfunction. Childhood abuse includes experiences of verbal aggression and emotional, physical and sexual abuse. Household dysfunction involves experiences such as having a household member with a substance abuse problem, mental illness an incarcerated household member, having witnessed domestic violence or parents' separation or divorce (Felitti et al, 1998).

These adverse childhood experiences have been strongly associated with development and prevalence of various health problems including substance abuse throughout the lifespan. When children are exposed to chronic stressful events, they may be disrupted in their neurodevelopment. This may impede the child's ability to cope with negative emotions and contribute to emotional and cognitive impairment. The child may then adopt coping mechanisms such as substance abuse. Eventually this contributes to disease, disability and social problems as well as premature mortality (SAMHSA, 2012).

The original ACE study was done as collaboration between centers for disease control and prevention (CDC) and Kaiser permanent health appraisal clinic in San Diego, California. The study had 17000 participants surveyed between 1995 and 1997. It showed that ACEs are common, they cluster and have a dose dependent relationship to many health problems including, alcoholism and alcohol abuse, illicit drug use and smoking. (Felitti et al 1998)

Research has shown a strong association between Adverse Childhood Experiences and substance use disorders. This includes early initiation of alcohol use and problem drinking behavior in adolescence (Dube et al 2006), increased likelihood of early initiation of smoking, (Anda et al 1999), continued smoking and heavy smoking in adulthood (Ford et al 2011), prescription drug use (Anda et al 2008), lifetime illicit drug use, having a drug problem and self-reported addiction (Dube et al 2003).

CHAPTER TWO

2.0 Literature Review

2.1 Substance use disorders

2.1.1 Definition

According to Diagnostic and Statistical Manual of Mental disorders fifth edition, (DSM-5), substance use disorders refer to a cluster of cognitive, behavioral and physiological symptoms that indicate that an individual continues using the substance despite significant problems related to the substance. They occur when recurrent use of alcohol and/or drugs causes clinically and functionally significant impairment such as health problems disability and failure to meet major responsibilities at work school or home.

The diagnosis is based on evidence of impaired control, social impairment, risky use and pharmacological criteria. They are defined as mild, moderate or severe to give the severity level which is determined by the number of criteria met by an individual. The substances include alcohol, tobacco, cannabis, stimulants, hallucinogens, opioids (DSM-5 2013).

2.1.2 Effects

The consequences of substance use are varied. They include medical, socio-economic and criminal justice effects and affect people of all ages (NIDA, 2012).

Medical consequences are many. Substance use has been noted to cause, lung disease, cardiovascular disease, stroke, cancer and mental illness (NIDA, 2012; WHO 2004).

Harmful effects to other people have also been reported. These include negative effects of prenatal exposure on infants such neonatal abstinence syndrome and fetal alcohol spectrum disorders (Shankarun et al 2007), negative effects of secondhand smoke (CDC, 2014) and increased spread of infectious disease such as HIV/AIDS, hepatitis B, hepatitis C and sexually transmitted infections (NIDA,2010).

2.1.3 Epidemiology and burden of disease

Substance use problems are prevalent and widespread worldwide. The world health organization has identified alcohol, tobacco and illicit drug use as among the top 20 risk factors for ill health (WHO 2004).

The global burden of disease attributable to alcohol consumption is 7.6% in men and 1.4% in women. Neuropsychiatric disorders including alcohol use disorders account for 36.4% of all disability adjusted life years (DALYs) (WHO report on global health risk, 2009).

According to WHO, the global prevalence of alcohol disorders was estimated to range from 0-16%, and that of drug use disorders 0-3%, with the point prevalence of alcohol generally higher than that of other substances of abuse (WHO 2004).

Globally 12.6% of deaths are attributable to alcohol, tobacco and illicit drug use (alcohol 3.6%, tobacco 8.7%, illicit drug use 0.4%). Tobacco alone causes almost 1 in 8 deaths among adults aged 30 years and above. Substance use disorders account for 9% of DALYs worldwide (alcohol 4.4%, tobacco use 3.7%, illicit drug use 0.9%) (WHO 2004).

A study done on clinical epidemiology in patients admitted at Mathari hospital showed that 34.4% of patients admitted met the criteria for substance use disorders (Ndetei et al 2008).

In study done on substance abuse in outpatients attending rural and urban health centers in Kenya, it was shown that alcohol, tobacco, khat and cannabis were widely used. Difference in the rural and urban centers was not significant. Average lifetime use for alcohol in males was 80.8% and for females 30.6% while for tobacco was 56.4% for males and 5.6% for females, $p<0.5$ (Othieno et al 2000).

Mugisha et al (2003),in a study done at a Nairobi slum showed that males are 20 times likely to use drugs and 5 times more likely to use alcohol than females.

2.2 Adverse Childhood Experiences (ACEs)

These are traumatic or stressful events in childhood such as abuse, neglect and a range of household dysfunction such as witnessing domestic violence, or growing up with family member with substance abuse and/or mental illness, parental discord or crime in the home (Felitti et al 1998).

ACEs have been associated with a wide range of health and behavior problems. This includes alcoholism and alcohol abuse, illicit drug use, smoking, chronic obstructive pulmonary disease, depression, fetal death, ischemic heart disease, liver disease, risks for intimate partner violence,

multisexual partners, sexually transmitted diseases, suicide attempts unintended pregnancies. The risk increases as the number of ACEs reported increases (Felitti et al 1998).

The first ACE study was conducted by CDC in collaboration with Kaiser permanent health appraisal clinic in San Diego, California in 1997-1998. It had recruited 17,000 study participants. The study assessed ten childhood stressors and the link between them and adult health. Results from this study showed 36% reported no ACE, 1 ACE was reported in 26%, 2 ACEs were reported by 16%, 21% reported more than 3ACEs. The types of ACEs studied were, emotional abuse (reported by 11%), physical abuse (reported by 28%), sexual abuse (reported by 21%), physical neglect (reported by 10%), emotional neglect (reported by 15%), household dysfunction such as incarcerated relative (reported by 11%), mother treated violently (reported by 13%), mental illness (reported by 19%), parental divorce (reported by 23%) and substance abuse by household member (reported by 28%) (Felitti et al 1998).

Exposure to ACEs results in toxic stress. This leads to prolonged exposure to stress hormones which are reported to negatively impact on the brain and impair function. This affects the brain in several ways such as impairment and disruption of the connections in the brain circuits which makes an individual to develop low threshold to stress and become overly reactive to adverse events throughout life (NCDC, 2005/2014).

Kendall (2002) reported that Childhood abuse affects health in four pathways, behavioral, social, cognitive and emotional. Behavioral pathway associates abuse in childhood with risky health behaviors later in adulthood such as substance abuse. Adult survivors of child maltreatment are more likely to engage in harmful activities.

Childhood maltreatment has been reported as an indicator for future negative health and behavior outcomes including behavioral, neuropsychological, cognitive, emotional, interpersonal and psychobiological disorders (Becker 2009; Johnson et al 2012).

Exposure to ACEs results in chronic trauma which can lead to developmental and psychological problem for children (Van Der Kolk, 2005). This may make them to develop coping behaviors such as substance abuse to help manage their distress or as a way to self- soothe (Pearlman & Curtois, 2005).

2.3 Studies done on ACEs and substance use disorders

Research has linked early exposure to adverse experiences in childhood to substance use in adulthood.

2.3.1 Local studies

There is no research literature on studies done in Kenya on adverse childhood experiences in patients with substance use disorders. However, anecdotal reports by clinicians at Mathari hospital indicate a high prevalence of adverse childhood experiences among patients with substance use disorders.

2.3.2 Regional studies

In a study done on adverse childhood experiences as risk factors for psychiatric disorders in Nigeria, 40% had experienced an adversity, 31.2% had experienced two or more adversities. Chances of multiple ACEs were higher among those reporting neglect or abuse or those whose parent had a mental disorder or substance abuse. There was an elevated likelihood of adult substance abuse among individuals who had experienced family violence, neglect and abuse (Oledaji et al., 2010).

In a study done on self-reported drunkenness among adolescents in four sub-Saharan African countries (Burkina Faso, Uganda, Ghana and Malawi) and association with ACEs, exposure to family alcoholism, experience of physical abuse or coerced sex were associated with increased likelihood of reporting drunkenness in the last one year (Kabiru et al., 2010).

Another study done on exposure to physical and sexual violence and adverse health behaviors in African children in Namibia, Swaziland, Uganda, Zambia and Zimbabwe, reported that 42% had been exposed to physical violence, 23% to sexual violence and 12% reported exposure to both. An association was noted between exposure to physical violence, alcohol use and lifetime drug use. Current frequent alcohol use (more than 6 episodes versus zero) was also associated with exposure to physical violence (OR=14.0 95% CI 9.39-20.89) or sexual violence (OR=3.65 95% CI, 2.63-5.06) (Brown et al., 2009).

Rachel et al (2010) in a study on 2772 rural South African youth found that having experienced ACEs was associated with drug or alcohol abuse. For example, emotional neglect was associated with drug abuse in both males (OR= 2.17 95% CI 0.99- 4.72 $p<0.05$) and females (OR 1.98 95% CI 1.37- 2.88 $p<0.0001$).

2.3.3 Global studies

In the ACE study in US, adults with four or more ACEs were seven times more likely to consider themselves alcoholic, five times more likely to have used illicit drug and ten times likely to have injected drugs compared to those who reported no ACE (Felitti et al 1998).

In a systematic review of 224 studies a strong relationship was found between child physical and sexual abuse and substance abuse in women. Less of an association was found among men although men with history of sexual abuse in childhood were found to be at risk for substance abuse. The authors suggested that men are less likely to disclose childhood abuse due to social values and expectations (Simpson & Miller 2002).

A meta-analysis of 124 studies on the long-term consequences of child physical abuse, emotional abuse and neglect reported evidence of an association between these types of childhood adversity and increased risk for drug use. Physical abuse OR= 1.92 95% CI, 1.67-2.20, emotional abuse OR= 1.41 95% CI, 1.11-1.79 and Neglect OR= 1.36 95%CI, 1.21-1.54 (Norman et al. 2012).

In a retrospective cohort of 8613 adults, it was shown that individuals who experienced more than 5 ACEs were 7-10 times more likely to report illicit drug use and addiction with attributable risk factors for ACEs being 56 % and 63% respectively (Dube et al 2003).

ACEs have also been reported to contribute to earlier onset of substance use with each category of ACE being associated with a two-fourfold increase in risk for illicit drug use prior to age 14 years. (Dube et al, 2006).

In a study done to assess ACEs as risk factors for substance dependence, each additional violence or abuse experience in childhood was found to result in increased odds of having substance dependence (OR=1.76 95%CI 1.35-2.28). Growing in a family in which there was substance abuse (alcohol, cocaine,opioids) approximately doubled the odds (OR=1.96 95%CI 1.46-2.65), while living with a household member smoking increased the risk of substance dependence by two thirds (OR=1.67 95%CI 1.23-2.27) (Douglas et al, 2010).

A study by Madruga et al (2011), on early life exposure to violence and substance misuse in adulthood in Brazil, on 1880 participants aged 20-60 years found that the odds of having alcohol abuse and dependence was nearly three times higher among those who had witnessed violence between parents compared to those who did not (OR=2.72 95% CI 1.57-4.70). Those who had witnessed more than two forms of violence during childhood were more likely to have alcohol abuse and or dependence, (OR=3.56 95% CI 1.72- 7.36).

In another study by Brems et al (2004) on childhood abuse and substance use among men and women receiving detoxification services, 20% men and 50% of women reported having experienced childhood physical and sexual abuse. Individuals with abuse history reported earlier age of onset, had more problems associated with use of alcohol or drugs, more severe psychopathology and had more lifetime arrests related to substance use and related mental health.

In a study on the relationship of childhood abuse history and substance use in an Alaska sample of 192 women in a substance misuse treatment clinic, 75% reported childhood abuse. Those that reported abuse history had younger age of onset of substance abuse, used substances more frequently, had experienced more blackouts and revealed having more psychological problems than those with no abuse history (Brems & Namyniuk, 2002).

Young et al (2012) did a study on African-American women with cocaine misuse on history of sexual trauma and treatment outcome and found that 64% had history of sexual trauma. Those with sexual trauma history reported being addicted to more substances, were admitted in the emergency room more often, were more likely to be negligent to their children due to drug use and reported having been to substance abuse treatment programs more often than those who did not.

A study done on the treatment processes and outcome among adolescents with history of child abuse who were on drug treatment, found that 39% of boys and 59% of girls had experienced physical and sexual abuse as children. Those who reported abuse had more service need on admission, and had lower post treatment abstinence (Grella et al, 2003).

2.4 Association between adverse childhood experiences and substance use disorders

Several hypotheses have been proposed to associate adverse childhood experiences and substance use disorders later on in life.

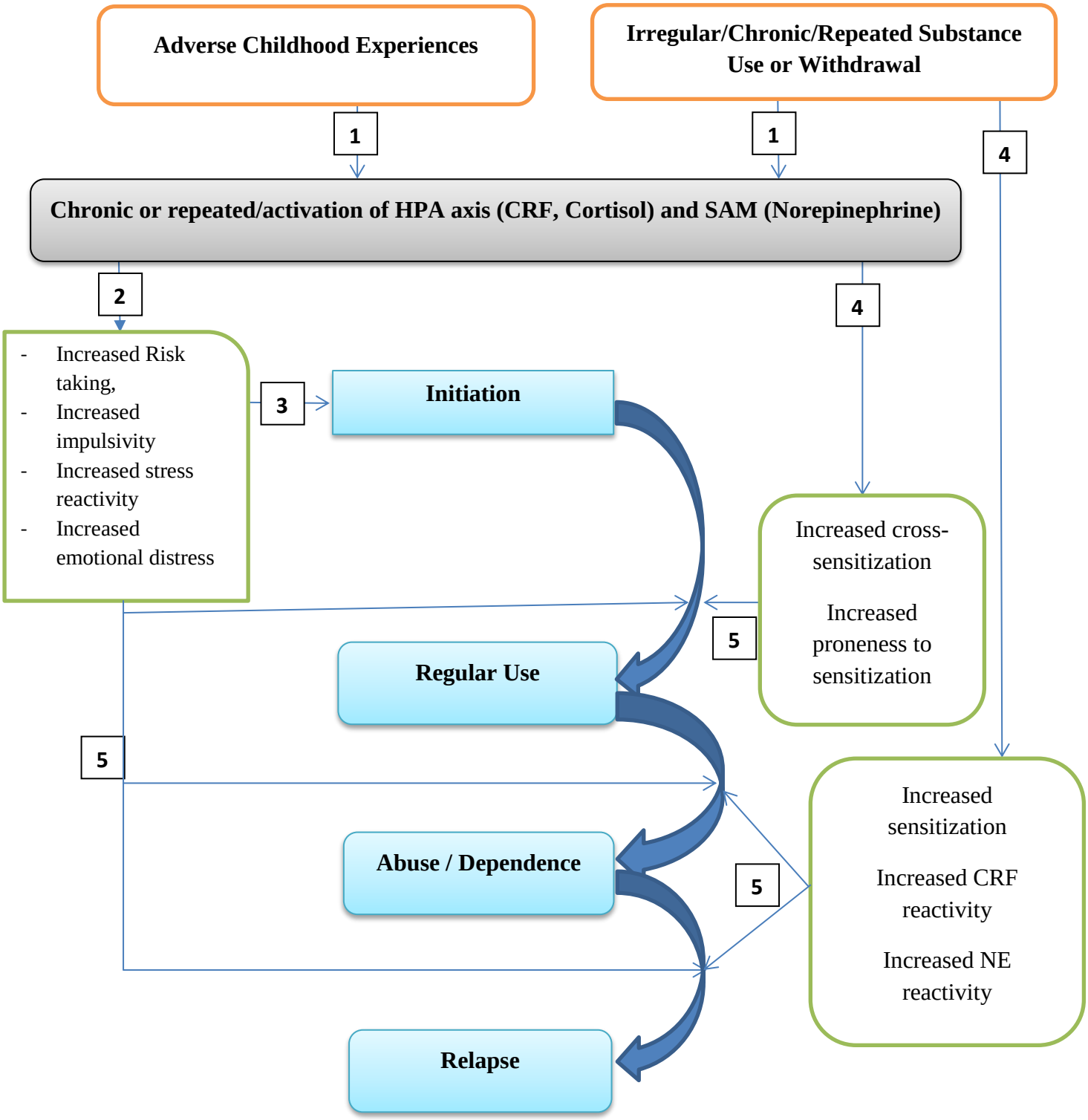
Adverse childhood experiences result in stress, which activates the hypothalamic-pituitary-adrenal (HPA) axis and sympathetic adrenal medullary (SAM) resulting in increased production of cortisol and norepinephrine respectively. Prolonged exposure to stress leads to chronic production of these hormones. Research has shown that this influences substance use in all five stages of addiction illness namely, initial experimentation with substance, shifting from experimental to regular use, escalation from regular use to abuse/dependence, motivation to quit and risk of relapse. In addition, substances of abuse have a similar effect on the HPA axis as stressors suggesting shared mechanism (Marijn et al. 2014)

Substances of abuse activate the mesolimbic dopaminergic system which mediates the rewarding and addictive aspects of substances (Pierce & Kumaresan 2006). Stress also has comparable effects on the striatal dopamine system as substances of abuse hence sensitizing the dopamine reward system. This sensitized state can persist after the end of the stress and renders an individual to be more responsive to substances of abuse hence more vulnerable to development of substance use disorder (Mannelli & Piazza 2002). This result in cross-sensitization between stressors such as childhood adversity and substances of abuse (Marijn et al.2014)

Andersen & Teicher (2009) in their review, reported that brain regions and circuits need to mature to a certain degree for effects of early exposure to stress to occur and that early life events program a trajectory of development that continues through adolescence and young adulthood. They also reported that most substance use begins in adolescence and proposed that maturation changes in the prefrontal cortex, which plays a role in drug-seeking and relapse, may influence the adolescent onset of drug abuse.

Stress acts on trait-like factors such as risk taking, decision making and behavioral control to influence initiation and experimentation with substances. Repeated stress has been reported to cross-sensitize motivational systems which can be further sensitized by substances of abuse. As shown in Figure 1 below, stressors increase the risk of abuse/dependence , reduce motivation to quit and increase risk for relapse potentially through increased sensitization of motivation (dopaminergic) system, shift from positive to negative reinforcement by Amygdala via corticotrophin releasing factor (CRF) and increased sensitization to norepinephrine(Marijn et al. 2014)

Figure 1: Theoretical framework



Key:

1 Adverse childhood experience result in stress which activates and/or changes pattern in HPA and SAM axes

2 Stress affects trait-like factors and sensitization mechanism (dopaminergic motivation, CRF, NE) which predisposes an individual to substance use.

3 Stress effects on trait-like factors of an individual can result in first time use of a substance

4 Stress (and irregular/chronic use of substances) results in accelerated transition to regular use due to effect on sensitization of dopaminergic motivation systems and cross sensitization with substances of abuse especially in those more prone to sensitization.

5 Sensitization in conjunction with stress effects on trait-like factors can result in escalation to regular use, abuse/dependence and relapse. Individuals with traits like high risk taking, increased stress reactivity, high impulsivity or increased emotional distress with a belief that substances reduce negative experiences are at a higher risk

2.5 Statement of the problem

Substance use disorders are a major source of health and social problems, hence are a public health concern worldwide. A study done at Mathari hospital found that 34% of patients admitted had substance use disorders (Ndetei et al 2008). Othieno et al (2000) reported that the substances abused commonly were alcohol, tobacco, khat and cannabis.

There is growing evidence from developed nations that link adverse childhood experiences to substance use in adulthood. (Dubow et al, 2008).

Generally, few studies have been done in Africa on ACEs and their influence on various health outcomes.

Research has also shown that presence of ACEs has negative influence on management of patients with substance use disorders. For example, Pirard et al (2005) in a study on 700 substance abusing patients, showed that 47.3% reported experiencing physical and/or sexual abuse in childhood. These individuals had more impairment at baseline, required more outpatient treatment and had a worse psychiatric outcome at one year follow up.

The paucity of local research literature on this subject creates a need for further research. This study aimed to determine the prevalence of adverse childhood experiences in patient with substance use disorders.

2.6 Rationale of the study

There is no research literature on studies done on ACEs and substance use disorders done in Kenya. This creates a knowledge gap that needs attention.

Studies done elsewhere, mostly in the developed countries, have shown ACEs are common and have a graded relationship to various substance use disorders and related behavioral health outcomes. Additionally, ACEs may interfere with the course of substance abuse treatment (Easton et al, 2000; Palmer et al, 1995).This indicates the need for identification of ACEs in patients with substance use disorders undergoing treatment as it may have an influence on treatment outcome.

Most of the studies that have been done in Kenya on substance abuse focus on the prevalence of substance abuse without any association with risk factors.

This study therefore aimed at establishing the prevalence of ACEs and their association with substance use among patients with substance use disorders. The data obtained will inform policy makers, and clinicians on ACEs and their association with substance use disorders. This will help in selection and implementation of policies, programs and strategies designed to address ACEs and include them in substance use prevention.

2.7 Study question

What is the prevalence of ACEs in patients with substance use disorder?

2.8 Study objectives

2.8.1 Broad objective

To determine the prevalence of adverse childhood experiences among patients with substance use disorders.

2.8.2 Specific objectives

i. To determine the pattern of substance use among patients with substance use disorders
ii. To determine the exposure to different adverse childhood experiences among patients with substance use disorders.
iii. To determine the association between socio-demographic characteristics and adverse childhood experiences among patients with substance use disorders.
iv. To establish the relationship between adverse childhood experiences and substance use disorders.

CHAPTER THREE

3.0 Study Design and Methodology

3.1 Study design

This was a cross-sectional descriptive study

3.2 Study area

This study was conducted at Mathari National Teaching and Referral hospital. This is Kenya's main psychiatric referral hospital located in Nairobi County and has been in operation since 1910. The hospital functions as a national referral hospital for patients with mental illness. Currently the hospital has an inpatient capacity of 600 beds with two and four female and male general wards respectively.Also, the hospital has two semi-amenity and one amenity wards. The hospital also has a rehabilitation unit for patients with substance use disorders. Other services offered in the hospital include: Outpatient services (psychiatric, general and medical clinics), Maternal and Child Health (MCH) clinic, Comprehensive Care Center (CCC), Methadone Clinic and forensic unit. Approximately 34% of patients admitted at Mathari Hospital have substance use disorder (Ndetei et al, 2008).

3.3 Study population

The study population was patients with substance use disorder receiving inpatient treatment at Mathari Hospital.

3.4 Inclusion criteria

- Patients aged 18 years and above who were receiving inpatient management for substance use disorders.
- Patients who were mentally stable at the time of the interview
- Able to give informed consent

3.5 Exclusion criteria

- Patients aged below 18 years
- Inability to give informed consent
- Patients with active psychopathology (have delusions, hallucinations and no insight)

3.6 Sample size determination

Using Cochran's (1977) sampling formula;

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

Where: n – Estimated sample size

d – The level of precision

p - Proportion of those with the condition of interest

z – Confidence level

Using a confidence interval of 95%, expected prevalence of 50% and a level of significance of 5% (0.05),

$$n = \frac{1.96 \times 1.96 \times 0.5 \times 0.5}{0.05 \times 0.05}$$

n = **384**

Corrected sample size for finite population

$$n' = \frac{n}{1 + \frac{(n-1)}{N}}$$

Where;

n' = adjusted sample size

n = sample size

N = population size

The population size of inpatients at Mathari Hospital is estimated to be 600. A study by Ndetei et al (2008) showed that 34.4% of the patients admitted had substance use disorders. The researcher used this data to derive N. Thus,

N = 34.4% x 600

N = 206

Therefore to get n',

$$n' = \frac{384}{1 + \frac{(384-1)}{206}} = 134.2657342657$$

n' = 134

3.7 Sampling method

Patients on management for substance use disorders as inpatients at Mathari hospital and met the inclusion criteria will be selected using convinience sampling method.

3.8 Data collection instruments

3.8.1 Adverse childhood experiences international questionnaire, (ACE- IQ)

ACE – International Questionnaire has a section that captures data on the socio-demographic variables of study participants, which include age, sex, education level, ethnic group, marital status, employment. The researcher modified this section to leave out the section that asks about ethnic group and included a question about age of first using substances of abuse.

The questionnaire was designed by WHO & CDC and is intended to measure ACEs in all countries and association between them and risk behaviors later in life. It is designed for administering to people aged 18 years and above. This was based on a field study done in seven countries. A study done in Vietnam on ACEs and mental health in adolescents showed good concurrent validity, $p < 0.05$. It is currently being validated in several countries through trial implementation as part of broader health surveys (WHO global status report 2011).

It has questions that assess adverse childhood experiences. The questions have been sorted to thirteen categories. The ACEs screened include physical abuse, emotional abuse, sexual abuse, physical neglect, emotional neglect, household member treated violently, household member who was a substance abuser, household member with mental illness or suicidal, incarcerated household member, peer violence (bullying), community violence and collective violence. Two methods of analysis of ACE-IQ have been proposed. For this study the frequency version of analysis was used. It involved scoring a one if the participant answered "rarely" or never for the questions assessing emotional neglect, "many times" for the questions assessing physical abuse, emotional abuse, physical neglect, household member treated violently, bullying and community violence. For the remaining ACEs an answer of "yes", "a few times" or "many times" was taken as one. Total score was calculated by summing up the number of events a participant was exposed to.

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

This is a research tool used to screen for problematic or risky substance abuse. ASSIST consists of sections that have questions on tobacco, alcohol, cannabis, cocaine, amphetamine, inhalants, sedatives, hallucinogen, opioids and other drugs.

In validation studies done, ASSIST has shown good concurrent validity ($r = 0.76\text{-}0.88$, $p \leq 0.001$), good internal consistency ($\alpha = 0.68 – 0.88$) and ability to discriminate between gradation of abuse (Gryczynski et al, 2014; Humeniuk et al, 2008; WHO: The ASSIST Project).

A validation study done on adolescents reported high validity with sensitivities =95-100%, specificities =90-93% and area under the curve, AUC, 90-94% (Gryczynski et al, 2014). Receiver Operating Characteristics (ROC) was used to assess the cut off scores with suitable specificities of 50-96% and sensitivities of 54-97% (Humeniuk et al, 2008).

3.9 Recruitment and data collection procedure

Study participants were recruited from patients receiving management for substance use disorders as inpatients at Mathari Teaching and Referral Hospital.

The study participants were recruited from the general wards (male and female) and the rehabilitation unit. In the general wards the researcher identified the patients on management for substance use disorders from the admission record book in the ward.

The study participants were recruited using convenience sampling method.

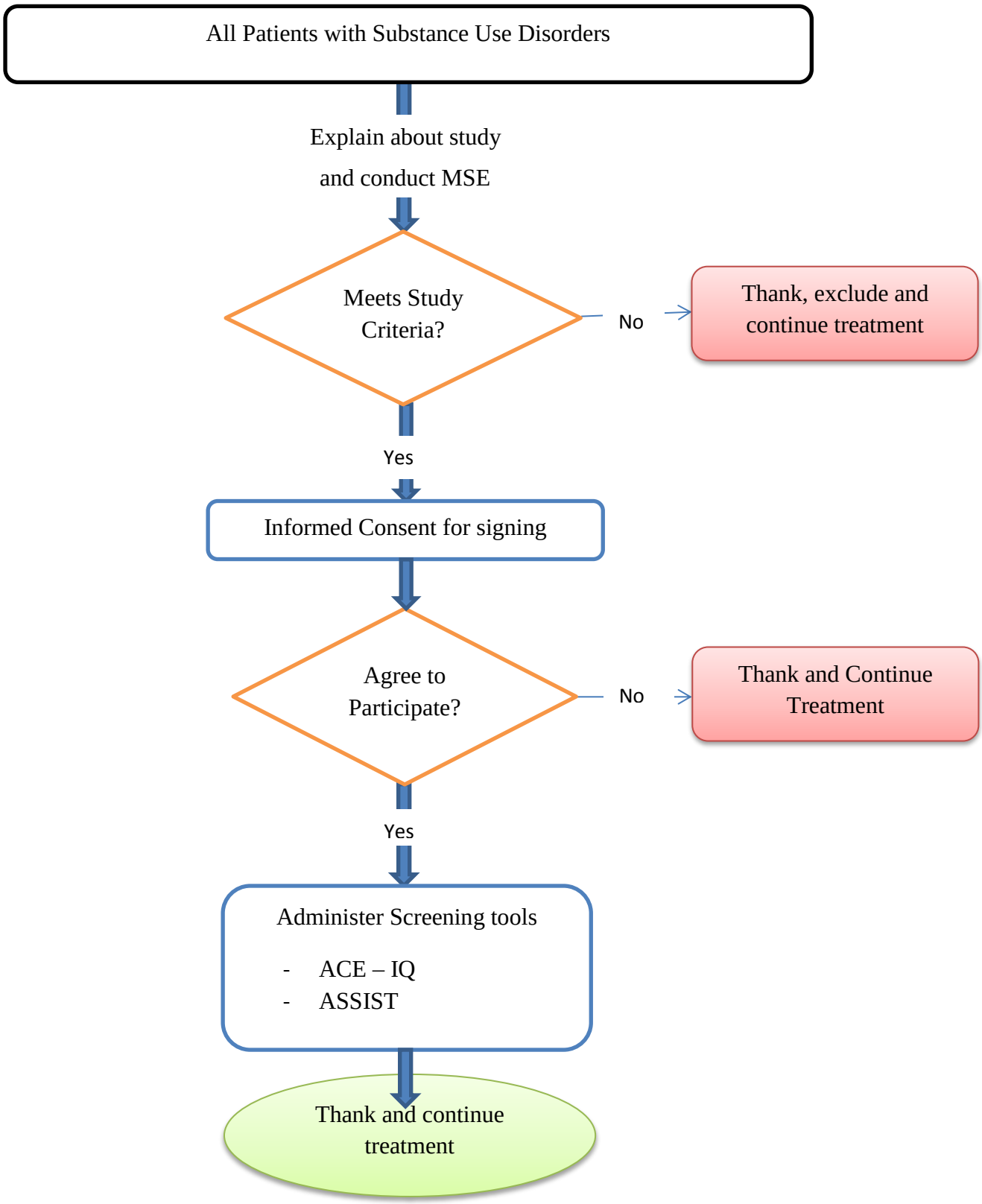
Screening was done to determine whether they met the inclusion criteria. This included offering an informed consent document with details of the study and giving an opportunity to ask any question they may have had regarding the study.

Mental status examination was done rule out active psychopathology (those with delusions, hallucinations and lacking insight). Those found to have active psychopathology were excluded as it may have interfered with their ability to give informed consent.

Study participants who met the inclusion criteria and were willing to participate in the study were asked to sign an informed consent form. They then proceeded to undergo screening with ACE-IQ and ASSIST questionnaire for sociodemographic data, adverse childhood experiences and substance use.

Those found to have active psychopathology, were counselled and treatment continued.

Figure 2: Recruitment and Data Collection Procedure flowchart



3.10 Quality assurance procedures

Emphasis was put to ensure that study participants fully understood the questions being asked and what the study was about.

Information obtained was recorded and stored in locked cabinets only accessible to the researcher.

3.11 Data management and anticipated analysis

Data was collected using a standardized tool and entered into a password protected Microsoft Access database. On completion of data entry, data cleaning was performed by comparing the entered data with the raw data forms.

Frequency and percentages for categorical variables and measures of central tendency and dispersion for continuous variables were employed for exploratory data .Analysis was conducted to summarize socio-demographic characteristics, patient history of ACEs and to describe substance use. Frequency tables were used to describe exposure to different adverse childhood experiences among patients with substance use disorders. The ASSIST tool was summarized using the approved methods for analyzing the tool.

To determine the association between socio-demographic characteristics and adverse childhood experiences among patients with various substance use disorders, chi-squared tests for categorical variables and t-tests for continuous variables were used.

Data analysis was done using SPSS version 20 software for windows. The results were presented in form of tables, graphs, charts and narratives.

3.12 Ethical consideration

1. Approval to carry out the study was requested from the University of Nairobi/ Kenyatta National Hospital ethics research committee. Also, written authority and clearance was obtained from the medical superintendent Mathari Hospital.
2. Participants were informed that participation in the study was voluntary and that the information obtained will be used only for the purpose of the study. Those who refused to participate or withdrew at any stage were not to be penalized and continued to get treatment at Mathari Hospital.
3. Proper explanation of the study process and objectives and purpose of the study was given to all patients who were legible and were offered a chance to participate without coercion.

4. Confidentiality was observed. All information collected in this study was confidential. Serial numbers were used instead of names. The data hard copies were kept under lock and key and the soft copies stored in computer systems that were password protected.

3.13 Potential benefits to study participants

Study participants were offered counselling in case they needed it.

The data from the study may help the patient and the clinicians to understand better the association between adverse childhood experiences and substance use disorders which can help in betterment of their management

3.14 Potential risks

There was no physical harm anticipated in the study. However, discussion of potentially sensitive topics may have made participants uncomfortable, with reliving traumatic experiences in the past.

In case of psychological disturbance, the study participants were offered psychological support.

CHAPTER FOUR

4.0 Results

4.1 Demographic information

The study enrolled 134 participants comprising of 118 males (88.1%) and 16 females (11.9%). Male to female ratio was 7:1. The median age was 28 years (inter quartile range: 25-30). Less than half of the participants (47.8%) were single and have never been married and 32.8% were married. Less than half of the participants (41.8%) had completed college/university education and only 2(1.5%) had no formal schooling. More than a third of the participants reported being self -employed and 12(9%) were students. An analysis into the monthly income of the participants revealed that the majority of them 56 (41.8%) had a monthly income of below Ksh.20, 000 while a few 10 (7.5%) earned more than Ksh. 50,000. The demographic information for all the study participants is summarized in Table 3.

Table 1: Demographic information statistics

Characteristic	N	%
Sex		
Male	118	88.1
Female	16	11.9
Age		
Less than 20 years	12	9
21-25 years	34	25.4
26-30 years	27	20.1
31-40 years	44	32.8
Above 40 years	17	12.7
Level of education		
No formal schooling	2	1.5
Less than primary school	8	6
Completed primary school	25	18.7

Completed secondary/High school	41	30.6
Completed college/university	56	41.8
Post graduate degree	2	1.5
Employment status		
Employed	46	34.32
Self employed	52	38.8
Student	12	9
Homemaker	4	3
Retired	1	0.7
Unemployed	19	14.18
Average monthly income		
Less than Ksh 20,000	56	41.8
20,001-35,000	37	27.6
35,001-50,000	9	6.7
Above 50,000	10	7.5
Other (students)	9	6.7
Marital status		
Married	44	32.8
Divorced or separated	15	11.2
Single	65	48.5
Widowed	10	7.5

4.1.1 Family history of substance abuse and mental illness

43.3% reported family history of substance abuse and 14.9% reported family history of mental illness. See Table 2 below.

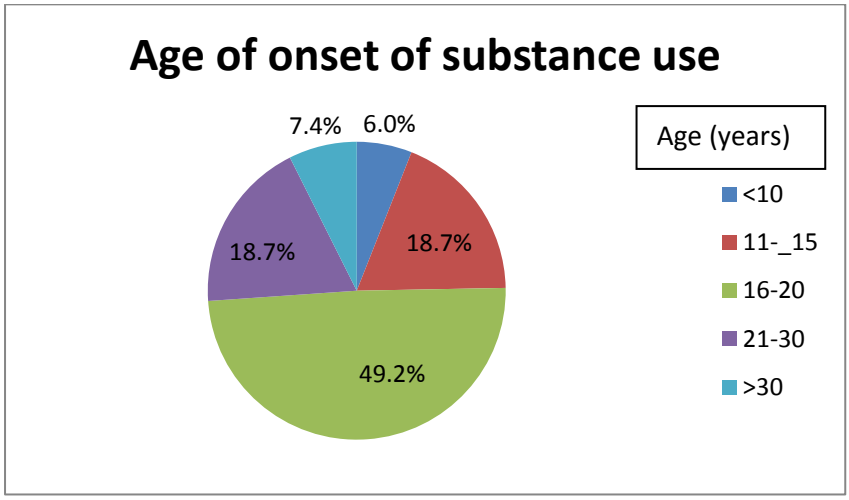
Table 2: Family history of substance abuse and mental illness

Family history of substance abuse	**n (%)**
Yes	58(43.3)
No	72 (53.7)
Not stated	4 (3.0)
Family history of mental illness	
Yes	20 (14.9)
No	112(83.6)
Not stated	2 (1.5)

4.1.2 Age of onset of substance abuse

The most common age for onset for substance use was between 16 to 20 years (49.2%) and the participants rarely started using drugs before the age of 10 years (6.0%). See figure 3 below.

Figure 3. Age of onset of substance use

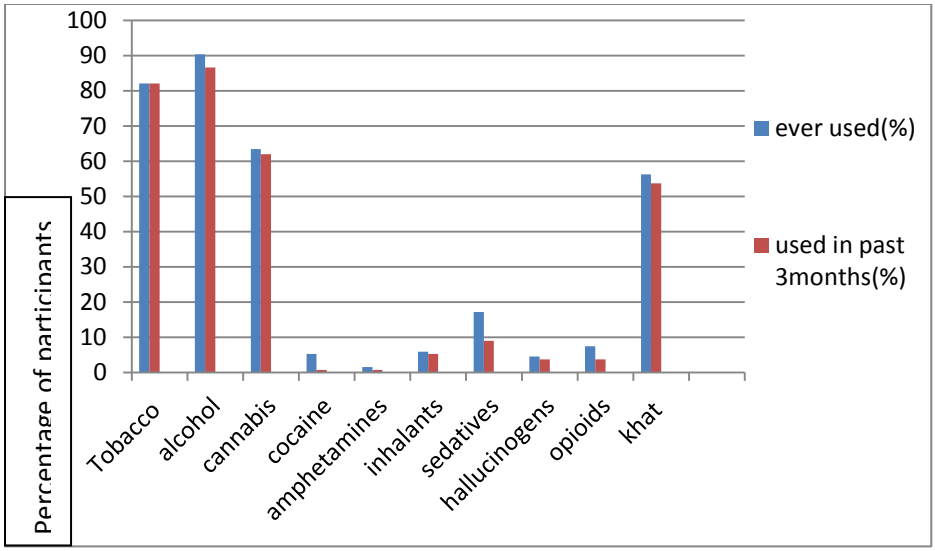


4.2 Pattern of substance use disorders

4.2.1 Frequency of substance abuse

The most common substance used was alcohol which was reported by 86.6% of the participants. This was followed by tobacco and cannabis with cocaine and opioids being the least used. This is illustrated in figure 4 below.

Figure 4. Frequency of substance use



4.2.2. Specific substance involvement scores

The specific substance involvement scores for the patients who had ever used any substance are summarized in the table 5 below. In general the patients who had ever used alcohol (mean score=26.3, SD=9.4), Opioids (mean=24.3, SD=15), Cannabis (mean=24.1, SD=9.3) and tobacco (mean=23.6, SD=9) were at a higher risk of experiencing health problems as a result of their current pattern of use. The patients were likely to be dependent as shown by the high mean substance involvement scores for these substances.

Table 3: Specific substance involvement scores

Substances	Mean	Stand Dev.	Number	Min	Max
Tobacco	23.6	9	110	0	39
Alcohol	26.3	9.4	116	0	39
Cannabis	24.1	9.3	83	0	39
Cocaine	7.3	3.4	9	0	13
Amphetamine	12.8	8	5	0	23
Inhalants	13.7	9.4	7	0	33
Sedatives	9.5	10.8	24	0	39
Hallucinogens	12.6	6.4	5	0	24
Opioids	24.3	15	9	0	39
Others	17.2	10.6	72	0	39

For all these substances individuals with an involvement score of 27 and above are considered to be at severe risk of health and other problems. Those patients with a specific substance involvement score ranging from 4-26 (alcohol 11-26) have moderate risk and those from 0-3 (alcohol 1-10) have low risk. The classification of patients by level of risk of health and other problems resulting from use of drugs is shown in Table 4 below.

Table 4: Specific substance risk level

Substances	Low Risk, n (%)	Moderate Risk, n (%)	High Risk, n (%)
Tobacco	25(18.7)	61(45.5)	48(35.8)
Alcohol	27(20.1)	38(28.4)	69(51.5)
Cannabis	50(37.3)	43(32.1)	41(30.6)
Cocaine	134(100)	0(0)	0(0)
Amphetamine	134(100)	0(0)	0(0)
Inhalants	128(95.5)	5(3.7)	1(0.8)
Sedatives	122(91.0)	9(6.7)	3(2.3)
Hallucinogens	129(96.3)	5(3.7)	0(0)
Opioids	126(94.0)	3(2.3)	5(3.7)
Others	67(50)	50(37.3)	17(12.7)

4.2.3 Substance use patterns

Table 7 shows the patterns of substance use among the participants. Less than a tenth (9.7%) of the participants reported use only a single substance with majority reporting use of at least 2 substances.

This analysis focuses on the number of substances abused by various individuals. As can be seen, the larger population of 35.82% had abused 3 different substances within the time before the past 3 months and 7.46% currently using more than 5 substances.

Table 5: Patterns of substance use among participants

	Ever used		Past 3 months	
No of substances	**n**	**%**	**n**	**%**
1	14	10.4	12	9.0
2	21	15.7	31	23.1
3	48	35.8	36	26.9
4	35	26.1	36	26.9
≥5	16	5.2	19	7.4

4.2.4 Substance use disorders

The most frequent substance use problem among the participants was alcohol dependence occurring in 51.5% of all admissions followed by tobacco dependence in 35.8%, Cannabis 30.6% cocaine and Miraa dependence in 12.7 % of participants. This is shown in Table 6 below.

Table 6: Types of substances use disorders in participants

	Abuse		Dependence	
Substances	**n**	**%**	**n**	**%**
Tobacco	109	81.3	48	35.8
Alcohol	116	86.6	69	51.5
Cannabis	83	61.9	41	30.6
Cocaine	9	6.7	0	0.0
Amphetamine	5	3.7	0	0.0
Inhalants	7	5.2	1	0.8
Sedatives	24	17.9	3	2.2
Hallucinogens	5	3.7	0	0.0
Opioids	9	6.7	5	3.7
Others /miraa	72	53.7	17	12.7

4.3 Pattern of exposure to Adverse Childhood Experience (ACEs)

The ACE score was done using Frequency version of analysis guidelines for analysing the ACE-IQ. Majority of the participants (89.6%) reported having experienced at least one ACE with

10.4% reporting having experienced no ACE. Among those who had experienced ACEs majority reported more than one ACE. This is shown in Table 7 below.

Table 7: Distribution of adverse childhood experiences scores among participants

ACE score	Frequency (%)
0 ACE	14 (10.4)
1 ACE	19 (14.2)
2 ACEs	21 (15.7)
3 ACEs	18 (13.4)
≥4 ACEs	62 (46.3)

Note: ACE=adverse childhood experiences

As shown in table 8 below, one or no parent was the commonest ACE reported by 50% of the participants followed by household member treated violently. The least common ACE was bullying (7.5%).

Table 8: Pattern of exposure to adverse childhood experiences

ACE	n	%	Males	%	Fem	%
1. Physical abuse	34	25.4	31	91.2	3	8.8
2. Emotional abuse	30	22.4	27	90.0	3	10.0
3. Contact sexual abuse	35	26.1	27	77.1	8	22.9
4. Alcohol and or drug abuser in the household	58	43.3	52	89.7	6	10.3
5. Incarcerated household member	30	22.4	26	86.7	4	13.3
6. Someone chronically depressed, mentally ill institutionalized or suicidal	20	14.9	19	95.0	1	5.0
7. Household member treated violently	65	48.5	58	89.2	7	10.8
8. One or no parents, parental separation or divorce	67	50	55	82.1	12	17.9
9. Emotional neglect	53	39.6	48	90.6	5	9.4
10. Physical neglect	16	11.9	14	87.5	2	12.5
11. Bullying	10	7.5	10	100.0	0	0.0
12. Community violence	41	30.6	37	90.2	4	9.8
13. Collective violence	55	41.0	51	92.7	4	7.3

Note: ACE= adverse childhood experiences

4.4 Association between Adverse childhood Experiences (ACEs) and substance used

The ACEs were analysed against the commonly abused substances so as to determine any association. The criteria to determine the most was done by getting the mean scores per ACE. It was observed that alcohol was the most abused substance among the various ACEs with a mean of 23.5 followed by tobacco, mean 21.0. Cannabis, Miraa and sedatives are also among the top five abused substances. The analysis was also done as per the frequency analysis of ACE-IQ. These trends are illustrated in the table 9 below.

Table 9: Adverse childhood experiences (ACEs) and substance use mean scores

	Alcohol	Tobacco	Cannabis	Sedatives	Hallucinogens	Opioids	Miraa
Physical abuse=34	23.9	21.1	20.1	1.3	0.7	2.0	11.0
Emotional abuse=30	20.2	23.9	19.7	3.8	1.3	3.1	10.8
Contact sexual abuse=35	22.7	20.8	17.5	2.7	1.1	1.6	12.2
Alcohol and or drug abuser in the household=58	23.3	19.7	15.4	1.7	0.8	1.6	12.1
Incarcerated household member=30	19.9	23.0	15.0	3.1	1.9	1.9	13.0
Someone chronically depressed, mentally ill institutionalized or suicidal=20	19.8	24.7	14.1	3.6	1.9	0.9	18.2
Household member treated violently=65	24.0	21.2	15.5	1.4	0.6	1.7	10.2
One or no parents, parental separation or divorce=67	23.4	18.7	13.2	2.2	0.5	1.4	8.2
Emotional neglect=53	21.5	20.8	16.6	1.9	0.6	2.3	10.6
Physical neglect=16	19.9	22.2	14.6	3.6	3.6	3.6	9.4
Bullying=10	20.9	20.8	12.1	0.0	0.0	0.0	9.6
Community violence=41	24.4	21.2	17.5	1.3	0.9	1.3	9.3
Collective violence=55	24.6	21.4	14.8	1.9	0.5	1.5	10.0

Multivariate analysis was done to establish the association between ACEs and the commonly used substances.

4.4.1 Alcohol

Alcohol was the most commonly abused substance with a mean of 23.5. It was abused by a total of 116 people out of 134 (86.6%). Analysis done indicated no statistically significant association between alcohol and ACEs. This can be seen from Table 10 below.

Table 10: The relationship between Alcohol and ACEs

ACE	Risk ratio	95% CI	P value
Physical abuse	2.48	0.51-1.67	0.046
Emotional abuse	0.62	0.29-1.34	0.231
Contact sexual abuse	0.93	0.42-1.52	0.863
Alcohol/drug user in household	0.97	0.56-1.74	0.915
Incarcerated household member	2.17	0.57-1.76	0.01
Someone with mental illness in household	0.62	0.23-1.26	0.35
Household member treated violently	3.2	0.89-2.44	0.045
One or no parent	0.88	0.56-1.75	0.612
Emotional neglect	0.43	0.64-1.90	0.842
Physical neglect	0.47	0.17-1.18	0.148
Bullying	1.40	0.19-1.4	0.01
Community violence	1.44	0.58-1.79	0.05
Collective violence	1.10	0.95-1.38	0.045

Note: ACE= adverse childhood experiences, CI= confidence interval

4.4.2 Tobacco

Tobacco was the second most commonly abused substance with a mean of 21.0. It was abused by a total of 110 people out of 134 (82.1%). The association between tobacco and other ACEs is shown in the table 11 below.

Table 11: The relationship between ACEs and Tobacco use

ACE	Risk ratio	95% CI	P value
Physical abuse	1.27	0.47-1.60	0.851
Emotional abuse	1.96	0.65-1.91	0.037
Contact sexual abuse	1.31	0.57-1.76	0.515
Alcohol/drug user in household	1.36	0.75-2.11	0.031
Incarcerated household member	0.72	0.35-1.42	0.379
Someone with mental illness in household			0.02
Household member treated violently	2.63	1.01-2.74	0.014*
One or no parent	0.83	0.56-1.75	0.367
Emotional neglect	0.5	0.79-2.21	0.325
Physical neglect	0.98	0.86-1.12	0.393
Bullying	1.19	1.08-3.28	0.528
Community violence	2.76	0.93-2.53	0.034
Collective violence	1.16	0.94-2.54	0.046

**p value<0.05 statistically significant p value>0.05 statistically insignificant

4.4.3 Cannabis

As shown in Tables 12 below, only emotional neglect was significantly associated with cannabis use.

Table 12: The relationship between cannabis an ACE (Frequency analysis)

ACE	Risk ratio	95% CI	P value
Physical abuse	1.71	0.88-2.41	0.104
Emotional abuse	2.02	0.93-2.54	0.059
Contact sexual abuse	1.54	0.81-2.24	0.179
Alcohol/drug user in household	0.94	0.63-1.88	0.74
Incarcerated household member	1.23	0.63-1.87	0.545
Someone with mental illness in household	0.92	0.40-1.50	0.846
Household member treated violently	1.38	0.81-2.24	0.599
One or no parent	0.81	0.58-1.78	0.213
Emotional neglect	1.1	0.96-2.62	0.021*
Physical neglect	0.79	0.31-1.37	0.617
Bullying	1.43	0.39-1.47	0.585
Community violence	1.68	0.92-2.52	0.075
Collective violence	0.92	0.91-2.47	0.696

*p value<0.05 statistically significant p value>0.05 statistically insignificant

4.4.4 Miraa

Table 13 below illustrates the relationship between adverse childhood experiences and miraa use.

Table 13: The relationship between miraa and ACE

ACE	Risk ratio	95% CI	P value
Physical abuse	1.1	0.58-1.79	0.963
Emotional abuse	1.72	0.87-2.40	1.101
Contact sexual abuse	1.65	0.90-2.45	0.098
Alcohol/drug user in household	1.31	0.88-2.40	0.18
Incarcerated household member	1.72	0.87-2.40	0.011
Someone with mental illness in household	3.44	1.22-3.37	0.034*
Household member treated violently	4.7	0.88-2.40	0.287
One or no parent	0.74	0.53-1.70	0.083
Emotional neglect	1.04	0.90-2.45	0.211
Physical neglect	0.67	0.26-1.30	0.393
Bullying	1.29	0.38-1.46	0.679
Community violence	4.18	0.08-1.09	0.01
Collective violence	1.63	0.97-2.62	0.153

*p value<0.05 statistically significant p value>0.05 statistically insignificant

4.4.5 Sedatives

As shown in Table 14 below, no ACE showed any statistically significant association with sedative use.

Table 14: The relationship between sedatives and ACEs

ACE	Risk ratio	95% CI	P value
Physical abuse	1.41	0.66-1.94	0.861
Emotional abuse	1.67	0.85-2.33	0.548
Contact sexual abuse	1.59	0.86-2.36	0.647
Alcohol/drug user in household	1.07	0.66-1.93	0.828
Incarcerated household member	1.96	1.03-2.81	0.851
Someone with mental illness in household	1.96	0.84-2.32	0.984
Household member treated violently	0.93	0.83-2.29	0.038

One or no parent	1.56	1.12-3.07	0.16
Emotional neglect	0.81	0.68-1.97	0.414
Physical neglect	2.75	1.11-3.02	0.351
Bullying	0.00		0.45
Community violence	0.24	0.06-1.06	0.116
Collective violence	3.3	0.98-2.65	0.305

*p value<0.05 statistically significant p value>0.05 statistically insignificant

4.4.6 Opioids

Table 15: The relationship between Opioids and ACEs

ACE	Risk ratio	95% CI	P value
Physical abuse	2.14	0.41-1.50	0.861
Emotional abuse	1.38	0.50-1.66	0.548
Contact sexual abuse	0.75	0.21-1,23	0.647
Alcohol/drug user in household	0.92	0.42-1.52	0.828
Incarcerated household member	0.89	0.25-1.28	0.851
Someone with mental illness in household	1.38	0.37-1.45	0.641
Household member treated violently	0.39	0.59-1.81	0.984
One or no parent	0.58	0.22-1.25	0.189
Emotional neglect	1.29	1.09-2.69	0.03*
Physical neglect	1.77	0.47-1.59	0.414
Bullying	0.00		0.351
Community violence	0.64	0.18-1.20	0.45
Collective violence	2.11	0.65-1.91	0.008

*p value<0.05 statistically significant p value>0.05 statistically insignificant

CHAPTER FIVE

5.0 Discussion

5.1 Sociodemographic characteristics

Most of the patients with substance use were found to be in the age 21-30 years, with a median age 28years (IQR=25-30). This is almost similar to findings of other studies done. A study on sociodemographic and clinical profile of substance users attending a regional de-addiction Centre in India reported a mean age of 26.8 years (SD=7.37) (Rather et al, 2013)

The commonest age of onset of substance use was 11-20 years. This finding is close to that reported by Rather et al (2013) in which 76.8% of the participants stated having started using substances in the similar age group. Also, Anderson and Teicher (2009) in their report stated that the common age of onset of substance use was in adolescence. The reason for this could be due to peer pressure and experimentation with substances.

In this study there were more male patients with substance use than females. This is almost similar to the findings reported from the study by Ndetei et al (2008) at Mathari hospital, in which 82.4% of patients with substance use disorders were males and females comprised only 17.6%. The likely cause for this could be the cultural attitudes and negative stigma attached to females who abuse substances hence the female avoid reporting about their substance use or seek treatment.

41.8% had a monthly income of less than Ksh. 20,000, with less than a tenth earning above Ksh. 50,000 in a month. This reflects the low socioeconomic status of patients with substance use as shown in other studies. In the study by Rather et al (2013), more than half of the patients had poor or lower-middle class socioeconomic status. The reason for this could be the fact that this study was done at Mathari Hospital where most of the patients seeking treatment at the hospital are from low socioeconomic class with few people from upper socioeconomic class.

5.2 Pattern of substance use and substance use disorders

The most commonly abused substances were alcohol, tobacco, cannabis and khat. This compares closely with other related studies. Othieno et al (2009) in a study on substance use in patients at rural and urban health centers found the most common substances used to be alcohol, tobacco, khat and cannabis. A study in Bugando hospital in Tanzania by Hauli et al (2011) showed the common used substances to be alcohol, tobacco and cannabis. The reason for this could be due to the low price and ease of availability of these substances. However, this finding differs with the

finding reported from the study done by Ndetei et al (2008) where the most common substances reported in the study were opioids, sedatives and stimulants. The reason for the difference especially in patients with opioid use could be because currently at Mathari hospital there is an outpatient treatment hence fewer patients with opioid use are treated as in- patients.

Among the illicit substances, cannabis was reported to be the most used, compared to hallucinogens, cocaine, opioids and amphetamines. This trend is similar to findings by earlier studies. For example, Hauli et al (2011) reported cannabis use in 29.3% of participants compared to cocaine and heroin which were reported by 1.6% and 2.1% respectively. Othieno et al (2009) and Rather et al (2013) also reported more cannabis use than the other illicit substances.. The reason for this could be that cannabis is easily available and costs less as compared to the other illicit drugs.

Majority of the participants in this study used more than one substance with only 9% reported use of only one substance. These findings compare closely to earlier studies, for example Rather et al (2013) reported 91.9% to have polysubstance use.

Alcohol, tobacco and cannabis were the drugs commonly associated with high risk of health problems and requiring intensive treatment. The reason for this could be the fact that they were the most commonly abused drugs. The other substances such as opioids, hallucinogens and amphetamines were less commonly used hence the low effect on health risk. This compares with the study done by Hauli et al, in which the substances associated with high risk of health problems were alcohol and tobacco with cannabis associated with moderate risk for health problems.

5.3 Pattern of exposure to Adverse Childhood Experiences

Majority of the participants reported having experienced at least one ACE with only 10.4% reporting no ACE. This compares with other ACE studies done. In the study by Almuneef et al (2014) on ACEs in Saudi Arabia, only 18% didn't have any ACE exposure. In the ACE study by Felitti et al (1998), 67% of the participants had experienced one or more ACEs. The reason for the high ACE score in this study compared to the Felitti et al (1998) study could be the use of different questionnaires. Also, studies on ACEs that have been done in developing countries report a higher ACE score as compared to developed countries (Almuneef et al, 2014). In contrast, the World Mental Health study (Kessler et al 2002), found out that only 38.8% reported having experienced any ACE. The reason for this difference could be due to the fact that the World Mental Health Study was done in the general population while the current study was carried out in a hospital on patients with substance use disorders.

Of the people reporting having experienced any ACE, most had more than 1 ACE with 46.2% reporting ≥4 ACEs. This compares with similar studies done. In the original ACE study, exposure to 1 ACE was reported by 26% of the participants, 16 % reported 2 ACEs and 10% and 16% reported 3 and ≥4 ACEs respectively (Felitti et al, 1998). In their study, Almuneef et al (2014) found that 23% had experienced only 1 ACE, 17 % reported 2 ACEs, 3 ACEs were reported by 10% and 32% reported ≥4 ACEs. The reason for this could be the fact that childhood adversities rarely occur in isolation but rather occur in groups as reported by Anda et al (2003).

The most common ACE reported in this study was 'one or no parent' which was reported by 50% of the participants, and 'household member treated violently' (48.51%). This is different from the findings in the original ACE study (Felitti et al, 1998) in which the commonest ACE reported was physical abuse, substance abuse by household member(both reported by 28%) followed by sexual abuse(reported by 21%) .The other types of ACEs studied were, emotional abuse (reported by 11%), physical neglect (reported by 10%), emotional neglect (reported by 15%), household dysfunction such as incarcerated relative (reported by 11%), mother treated violently (reported by 13%), mental illness (reported by 19%), parental divorce (reported by 23%). The major differences in occurrence of ACE were those ACEs related to violence (community/collective violence and household member treated violently). The reason for this could be that the Felitti study did not assess for community or collective violence in their study and the fact that the study had a bigger sample size compared to current study may have contributed to the differences noted.

This study found that females were exposed to ACEs less often than males. As noted in the reporting of all the ACEs, females comprised a lesser percentage of those reporting having experienced that ACE. This is also similar to findings by Felitti et al (1998) and Almuneef et al (2014). The reasons for this could be that the number of females in the study was less than that of males and also the fact that most cultures tend to be girl-sensitive hence during childhood the females tend to be protected from violent episodes in the community than male. Conversely, females could be reluctant to report adversity due to cultural reasons.

5.4 Association between adverse childhood experiences (ACEs) and substance use disorders

There was no statistically significant association observed between alcohol use and exposure to ACEs. This finding has differs from findings reported in earlier research studies done. For example, Anda et al (2002) in which the prevalence of alcoholism was higher among patients who reported parental alcohol use. Also, other studies have shown alcohol use associated with physical and sexual abuse (Kabiru et al, 2010 and Brown et al, 2009) and community violence

(Douglas et al, 2010). The reason for this difference could be that the sample size in the current study was smaller compared to that of previous studies.

Tobacco use was significantly associated with exposure to one ACE, 'household member treated violently'. This is similar to findings by Anda et al (1999) who in their study reported an association between ACEs and early initiation of smoking and Ford et al (2011) who reported that those exposed to ACEs had a higher risk of continued smoking and heavy smoking in adulthood.

The ACE found to be significantly associated with cannabis use was emotional neglect. This has been reflected in other studies such as the systemic review by Norman et al (2012) in which it was reported that physical abuse and neglect was associated with illicit substance use with (OR=1.92 95%CI 1.67-2.20 and OR=1.36 95%CI 1.21-1.54 respectively). Oledaji et al (2010) in their study in Nigeria on adverse childhood experiences as risk factors for psychiatric disorders reported that exposure to family violence, neglect and abuse was associated with drug abuse in adulthood.

Miraa use was significantly associated with reporting the ACE 'household member chronically depressed, mentally ill, institutionalized or suicidal'. This is in agreement to findings by Widmann et al (2014), in which khat use was associated with exposure to traumatic experiences.

Opioid use was associated with exposure to emotional neglect. This is in agreement to the finding of the systematic review by Norman et al (2012) in which neglect was found to increase the risk for drug use (OR= 1.36).

CHAPTER SIX

6.0 Conclusion and recommendation

6.1 Conclusion

There is a high prevalence of adverse childhood experiences among patients on treatment for substance use disorders at Mathari hospital. Therefore early screening and prevention of ACEs could be of importance to reduce their effect and help in management of patients.

Alcohol, tobacco, cannabis and khat are the most commonly used substances. In addition, use of these substances is associated with greater risk for health problems and need for intensive treatment. This could be of importance in guiding on where to focus the treatment and prevention strategies for substance use.

The commonest adverse childhood experience reported was growing up with one or no parent. Emotional neglect, household member treated violently and household member chronically depressed or mentally ill were significantly associated with use of substances. This could form a basis to more focused studies to establish the relationship of the above ACEs and substance use disorders.

6.2 Recommendations

Further to the findings of this study, the following are recommended;

1) Conduction of further studies on ACEs in different regions of the country (in both community and clinical settings) and use the findings to identify specific groups of people at higher risks of substance use disorders.
2) Management of patients with substance use disorders should include screening for ACEs.
3) Increase awareness of ACEs among health care workers especially those working in centers involved in treatment of patients with substance use disorders through training on ACEs, their association with substance use and how to screen for ACEs in patients.
4) ACEs to be included among the risk factors for substance use disorders hence incorporate strategies that address ACEs in the substance abuse prevention programs.

6.3 Limitations

1. The study was hospital based hence data collected was on patients who were admitted leaving out other patients with substance use disorders who may not be admitted. Therefore these findings may not be representation of all patients with substance use disorders.
2. The use of self-reporting measure may have resulted in over reporting or underreporting of adverse childhood experiences.
3. The data collected was retrospective which may have led to recall bias.
4. There could be confounding factors such as comorbid psychiatric illness which may have contributed to the association between ACEs and substance use disorders.

CHAPTER SEVEN

3. References

i. Almuneef, M., Qayad, M., Aleisa, M., Albuhairan, F., (2014). Adverse childhood experiences, chronic diseases and risky healthy behavior in Saudi Arabian Adults.: a pilot study . *Child Abuse and Neglect*. http://dxdoi.org/10.1016/j.chiabu2014.06.003

ii. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders, fifth edition(DSM -5). Washington, DC, American Psychiatric Association.

iii. Anda, R.F., Brown, D.W., Felitti, V.J., Giles, W.H., Dube, S.R. (2008). Adverse childhood experiences and prescription drug use in a cohort study of adult HMO patients. *BMC Public Health, 4(8),* 198

iv. Anda, R.F., Croft, T.B., Felitti, V.J., Nordenberg, D., Giles, W.H., Williamson, D.F., Glorino, G.A. (1999). Adverse childhood experiences and smoking during adolescence and adulthood. *Journal of the American Medical Association, 282,* 1652-1658

v. Andersen, S.L., Teicher, M.H. (2009). Desperately driven and no brakes: Developmental stress exposure and subsequent risk for substance abuse. *Neuroscience and biochemical reviews, 33,* 516-524

vi. Becker, W.A. (2009). Effects of early maltreatment on development. A descriptive study using the Vineland adaptive behavior scale-II. *Child welfare, 88*(2), 137-161.

vii. Brems, C., Johnson, M.E., Neal, D., Freeman, M. (2004). Childhood abuse history and substance use among men and women receiving detoxification services. *American journal of drug alcohol abuse, 30*(4), 799-821

viii. Brems, C., Namyniuk, C. (2002). The relationship of childhood abuse history and substance use in an Alaska sample. *Substance use misuse, 37*(4), 473-494

ix. Brown, D.W., Riley, L., Butchart, A., Meddings, D.R., Kann, L., Harvey, A.P. (2009). Exposure to physical and sexual violence and adverse health behavior in African children: Results from the global school-based student health survey. *Bull WHO, 87,* 447-455

x. Centres for Disease Control and Prevention. (2014). *Smoking and tobacco use: Health effects of second-hand smoke*. Retrieved from http://www.cdc.gov/tobacco/data/data-statistics/fact-sheets/secondhand-smoke/health-effects/

xi. Dong, M., Anda, R.F., Felitti, V.J., Dube, S.R., Williamson, D.F., Thiampson, T.J., Giles, W.H. (*2004).* The interrelatedness of multiple forms of abuse, neglect and household dysfunction. *Child Abuse and Neglect, 28(7),* 771-784

xii. Douglas, K.R., Chan, G., Gelertnter, J., Aries, A.J., Anton, R.F., Weiss, R.D. …Kranzler, H.R. (2010). Adverse childhood experiences as risk factors for substance dependence: Partial mediation by mood or anxiety disorders. *Addictive bahaviour,35*(1),7-13

xiii. Dube, S.R., Anda, R.F., Felitti, V.J., Chapman, D.P., Giles, W.H. (2003). Childhood abuse, neglect and household dysfunction and the risk of illicit drug use: The ACEs study. *Paediatrics, 111,* 564-572

xiv. Dube, S.R., Felitti, V.J., Dong, M., Giles, W.H., Anda, R.F. (2003). The impact of adverse childhood experiences on health problems: Evidence from four birth cohorts dating back to 1900. *Preventive Medicine, 37,* 268- 277

xv. Dube, S.R., Miller, J.W., Brown, D.W., Giles, W.H., Felitti, V.J., Dong, M., Anda, R.F. (2006). Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health, 38(4),* 444.e1-444.e10

xvi. Dubow, E.F., Boxer, P., Huesman, L.R. (2008). Childhood and adolescent predictors of early and middle adulthood alcohol use and problem drinking: The Columbian county longitudinal study. *Addiction, 103* (suppl 1), 36-47

xvii. Easton, C.J., Swan, S., Sinha, R. (2000). Prevalence of family violence in clients entering substance abuse treatment. *Journal of substance abuse treatment, 18 (1),* 23-28

xviii. Edwards, V.J., Anda, R.F., Dube, S.R., Felitti, V.J. (2007). Adverse childhood experiences and smoking persistence in aduts with smoking related symptoms and illness. *The Permanente Journal, 11,* 5-13

xix. Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edward, V., Koss, M.P., Mark, J.J. (1998). The relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American journal of preventive medicine, 14* (4), 245-258

xx. Ford, E.S., Anda, F.R., Tsai, J., Li, C., Croft, J.B., Edward, V.J., Perry, G.S., Zhao, G. (2011). Adverse childhood experiences and smoking status in five states. *Preventive medicine, 53,* 188-193

xxi. Grella, C.E., Joshi, V. (2003). Treatment processes and outcome among adolescents with a history of abuse who are in drug treatment. *Child Maltreatment, 81,* 7-18.

xxii. Gryczynski, J., Kelly, S.M., Mitchell, S.G., Kirk, A., O'Grady, K.E., Schwartz, R.P. (2015). Validation and performance of ASSIST among adolescent primary care patients. *Addiction, 110*(2), 240-247.

xxiii. Hameniuk, R., Ali,R., Babor, T.F., Formigoni, M.L., Jittiwutikam, J., de Lacerda R.B. ….Simon S. (2008). Validation of Alcohol Smoking and Substance involvement Screening Test (ASSIST). *Addiction, 103*(6), 1039-1047.

xxiv. Hauli, K. A., Ndetei, D. M., Jande, M. B., Kabangila, R., (2011). The prevalence of substance use among psychiatric patients: The case study of Bugando Medical Centre, Mwanza (Northern Tanzania). *Substance Abuse 32(4):* 238-241.

xxv. Jewkes, R.K., Dunkle, K., Nduna, M., Jama, P.N., Puren, A. (2010). Association between childhood adversity and depression, substance abuse and HIV and HSV_2 infection in rural South African youth. *Child abuse and neglect, 34*(11), 833-841.

xxvi. Johnson, R., Kohl, P.L., Drake, B. (2012). Child and adult outcomes of chronic child maltreatment. *Paediatrics, 129(5),* 839-845.

xxvii. Kabiru, C.E., Beguy, D., Crichton, J., Ezeh, A.C. (2010). Self-reported drunkenness among adolescents in four sub-Saharan African countries: Associations with adverse childhood experiences. *Child and adolescents psychiatry and mental health, 4*:17.

xxviii. Kendal Tacket. (2002). The health effects of childhood abuse: four pathways by which abuse can influence health. *Child abuse Neglect 26*,715-729.

xxix. Kessler, R.C., McLaughlin, K.A., et al (2010). Childhood adversities and adult psychopathology in WHO world mental health surveys. *British journal of psychiatry, 199(5),* 378-385.

xxx. Madruga, C.S., Larunjeira, R., Gaetano, R., Ribeiro, W., Zaleski, M., Pinsky, I., Ferri, C.P. (2011). Early life exposure to violence and substance misuse in adulthood: The first Brazilian national survey. *Addictive Behaviours,36,* 251-255.

xxxi. Mannelli, M., Piazza, P.V. (2002). Interaction between glucocorticoid hormone, stress and psychostimulants. *European journal of neuroscience, 16(*3), 387-394.

xxxii. Marijn, L., Hu, K., Swann, A.C. (2014) . Stress modulates illness course of substance use disorders: A translational review. *Frontiers in psychiatry: Review article*, 5(83).

xxxiii. Mugisha, F., Arinaitwe, J., Mugisha, B.O., Hagembe. (2013), Alcohol and substance and drug use among urban slum adolescents in Nairobi Kenya. *Science direct, 20*(4), 231-240.

xxxiv. National Institute on Drug Abuse (2012). *The science of drug abuse and addiction: Medical consequences of drug abuse*. Retrieved from http//www.drugabuse.gov/publication/medical-consequences-of-drug- abuse.

xxxv. National Institute on Drug Abuse. (2010). *The science of drug abuse and addiction: Are cocaine abusers at risk of contracting HIV/AIDS and Hepatitis B and C?* Retrieved from http://www.drugabuse.gov/publications/research-report/cocaine/are-cocaine-abusers-risk-contracting-hivaids-hepatitis-b-c

xxxvi. National Scientific Council on Developing Child. (2005/2014). *Excessive stress disrupts the architecture of the developing brain*: *Working paper No.3. updated edition*. Retrieved from http://www.developingchild.havard.edu.

xxxvii. Ndetei, D.M., Khasakhala, L., Maru, H., Pizzo, M., Mutiso Ongecha, Owur F.A., Kokonya, D.A. (2008). Clinical epidemiology in patients admitted at Mathari psychiatric hospital in Nairobi Kenya. Social *Psychiatry Epidemiol, 43(9),* 736-742.

xxxviii. Norman, R.E., Byambua, M., De, R., Butchart, A., Scot, J. (2012). The long-term consequences of child physical abuse emotional abuse and neglect: A systematic review and meta-analysis. *Public library of science medicine, 9*(11), 1-31.

xxxix. Oladeji, B.D., Makanjuola, V.A., Gureje, O. (2010). Family related adverse childhood experiences as risk factors for psychiatric disorders in Nigeria. *British Journey of Psychiatry,196, (3),* 186-191.

xl. Othieno, C.J., Kathuku, D.M., Ndetei, D.M. (2000). Substance abuse in outpatients attending rural and urban health centres in Kenya. *East Africa medical journal, 77(11),* 792-795.

xli. Palmer, J.A., Palmer, L.K., Williamson, D., Brian, T. (1995). Childhood abuse as a factor in attrition from drug rehabilitation. *Psychological report, 76,* 879-882.

xlii. Pearlman, L., Curtois, C. (2005). Clinical application of the attachment framework: Relational treatment of complex trauma. *Journal of traumatic stress 18(5),* 449-459.

xliii. Pierce, R.C., Kumaresan. (2006). The mesolimbic dopamine system: the final common pathway for reinforcing effects of drugs of abuse? *Neuroscience and behavioral reviews, 30*(2), 215-238.

xliv. Rather, Y. H., Bashir, W., Sheikh, A. A., Amin, M., Zahgeer, Y. A. (2013). Socio-demographic and Clinical Profile of Substance Abusers Attending a Regional Drug De-Addiction Centre in Chronic Conflict Area: Kashmir, India. *Malays J Med Sci. 20(3*): 31-38.

xlv. Shankarun, S., Lester, B.M., Das, A., Bauer, C.R., Bada, H.S., Lagasse, L., Higgin, R. (2007). Impact of maternal substance use during pregnancy on childhood outcomes. *Samin fetal neonatal med, 12*(20), 143-150.

xlvi. Simposon, T., Miller, W. (2002). Concomitance between childhood sexual and physical abuse and substance use problems: A review. *Clinical psychological review, 22,* 27-77.

xlvii. Substance Abuse and mental health services administration. (2012). *Prevention training and technical assistance; adverse childhood experiences.* Retrieved from http://captus.samhsa.gov/prevention-practice/targeted-prevention/adverse-childhood-experiences.

xlviii. Van der Kolk, Roth, S., Pelcoritz, D., Sunday, J., Spinazzola, J. (2005). Disorders of extreme stress. The empirical foundation of a complex adaptation to truma. *Journal of traumatic stress 18(5),* 389-399.

xlix. Widmann, M., Warsame, A.H., Mikulica, J., Beust, J., Isse, M.M., Ndetei, D.,… Odenwald M G, (2014). Khat use, PTSD and psychotic symptoms among Somali refugees in Nairobi – a Pilot Study. *Frontiers in Public Health, 2 (71).*

l. World Health Organisation. (2004). *The world health report 2004- changing history*. Retrieved from http://www.who.int/whr/2004/en/

li. World Health Organisation. (2009). *Global health risks: mortality and burdenof disease attributable to selected major risks.* Retrieved from, http://www.who.int/healthinfo/global-burden-disease/global-health-risks/en/.

lii. World Health Organization.(2002). *Management of substance abuse. The ASSIST screening test version 3.0.* Retrieved from http://www.who.int/substance-abuse/activities/assist-test/en/

liii. World health organization.(2011). *Violence and injury prevention; adverse childhood experiences international questionnaire (ACE-IQ).* Retrieved from http://www.who.int/violence/activities/adverse-childhood-experiences/en/

liv. Young, A.M., Boyd, C. (2000). Sexual trauma, substance abuse and treatment success in a sample of African-American women who smoke crack cocaine. *Substance Abuse, 21*(1), 9-1

APPENDICES

Appendix I: Consent Information Document (English Version)

Title:

Prevalence of Adverse Childhood Experiences among Patients with Substance Use Disorders at Mathari Hospital

Investigator:

Dr. Sarah Kanana

Supervisors:

Prof. Mary Wangari Kuria

Dr. Anne Obondo

Introduction

My name is Dr. Sarah Kanana, a postgraduate student at the University of Nairobi. I wish to conduct a study on the prevalence of adverse childhood experiences among patients with substance use disorders at Mathari Hospital.

I would like to invite you to participate in the study.

Description of the study and study objectives

This research is a cross-sectional descriptive study among patients receiving inpatient treatment for substance use disorders at Mathari National Teaching and Referral hospital, aged 18 years and above and willing to participate in the study.

The objective of this research is to determine the prevalence of adverse childhood experiences among patients with substance use disorders at Mathari hospital. It will have approximately 134 respondents and will take about 2 months to collect research data.

Requirements

For one to participate in the study you need to:

1. Be aged 18 years and above
2. Not have active psychopathology
3. Sign an informed consent form

Procedure

If you agree to participate in the study you will

1. Be asked to undertake a mental status examination
2. Be asked to sign a consent form expressing your voluntary participation
3. Be asked questions that relate to your socio-demographic information, substance use and your experiences in childhood. This will be in form of a questionnaire that will take about 30 minutes to complete

Benefits:

There are no direct benefits for participating in this study.

However, results from this study can help patients and clinicians to better understand the association between adverse experience in childhood and substance use disorders.

This will help in improving the management of patients with substance use disoders and also in implementation of strategies to prevent substance use disorders.

Risks:

It is possible that you might feel embarrassed or uncomfortable as you give information about substance use disorder and adverse experiences in your childhood, which are potentially sensitive topics.

In case there is psychological disturbance, it will be explained to you and you will be offered psychological support.

Voluntary Participation:

Your participation in this research is entirely voluntary and if you decide to participate, you are free to withdraw at any time. You may also choose not to answer specific questions. Your choice not to participate or choice to withdraw will not affect any treatment needs that you may have at Mathari Hospital now and in the future.

Confidentiality:

Your identity will be kept confidential. In addition, your name or any other personal identifier will not be used in any reports or publications arising from this study. Instead, you will be assigned a number to protect your identity.

The questionnaires that you will complete will be stored safely, with nobody having access to them apart from the investigator and the supervisors. The data collected from this study will be entered in computers and kept away from public access.

Compensation:

You will not be paid to participate in this study.

Additional Information:

If you have questions about the study that are not answered in the consent information, please ask them. In addition, if you have questions in the future you may contact the following:

1. Investigator:

    a. Dr. Sarah Kanana
    P.O Box 6495 – 00200,
    Nairobi
    Tel: (254) 725 756272

2. Supervisor:

    a. Prof. Mary Kuria
    P.O. Box 19676 – 00202, Nairobi
    Email: wangari2@gmail.com

3. Kenyatta National Hospital/U.O.N/ Ethics & Research committee

    a. Kenyatta National Hospital
    P.O Box 20723-00202 Nairobi
    Tel: (254) 020 726300, Ext 44102, 44355
    Fax: 725272 Telegrams: medsup, Nairobi
    Emai: uonknh_erc@uonbi.ac.ke

    b. University of Nairobi, College of Health Sciences
    P.O. Box 19676 – 00202 Nairobi
    Tel: (254) 020 2726300 Ext: 44355, Telegrams: varsity.

Appendix II: Informed Consent Form (English Version)

I .....(name of participant) have read/heard and understood the explanations given to me about this study entitled ***"Prevalence of Adverse Childhood Experiences Among Patients With Substance Use At Mathari Hospital"***.

I have had the opportunity to ask questions that have been clarified to my satisfaction by .....(name of person taking consent/researcher) in the language I understand.

I understand that my participation in this study is entirely voluntary and I can withdraw my participation at any time I want to without giving an explanation for doing so. I understand that if I withdraw my participation, it will not affect my livelihood or management in any way.

I understand that all the information I give, including private information will be kept confidential. I accept to give information that will help in this study and also that whatever information is received will be reported and published confidentially.

I agree to participate in this study.

Name of participant:.....

Signature of participant:..... Date:.....

Signature of witness:..... Date:.....

Name of person taking consent:.....
Signature:..... Date:.....

You will receive a copy of the signed consent form to take away with you.

If you have questions or would like to seek further clarification about this study, please contact:

1. Investigator:

    a. Dr. Sarah Kanana
    P.O Box 6495 – 00200,
    Nairobi
    Tel: (254) 725 756272

2. Supervisor:

    a. Prof. Mary Kuria
    P.O. Box 19676 – 00202, Nairobi
    Email: wangari2@gmail.com

3. Kenyatta National Hospital/U.O.N/ Ethics & Research committee
    a. Kenyatta National Hospital

    P.O Box 20723-00202 Nairobi

    Tel: (254) 020 726300, Ext 44102, 44355

    Fax: 725272 Telegrams: medsup, Nairobi

    Emai: uonknh_erc@uonbi.ac.ke

    b. University of Nairobi, College of Health Sciences

    P.O. Box 19676 – 00202 Nairobi

    Tel: (254) 020 2726300 Ext: 44355, Telegrams: varsity.

Appendix III: Consent Information Document (Swahili Version)

HATI YA RIDHAA

Andiko:

Idadi ya matukio mabaya utotoni miongoni mwa wagonjwa wenye matatizo ya matumizi ya madawa ya kulevya katika hospitali ya Mathari.

Mpelelezi:

Dr. Sarah Kanana

Wasimamizi:

Prof. Mary Kuria

Dr. Anne Obondo

Utangulizi

Mimi Dr. Sarah Kanana ni mwanafunzi wa uzamili katika chuo kikuu cha Nairobi.

Ningependa kufanya utafiti huu kuhusu idadi ya matukio mabaya utotoni miongoni mwa wagonjwa wenye matatizo ya matumizi ya madawa ya kulevya katika hospitali ya Mathari.

Ningependa kukukaribisha katika utafiti huu.

Maelezo kuhusu utafiti na lengo la utafiti

Huu ni utafiti wa maelezo miongoni mwa wagonjwa wanaopokea matibabu ya matatizo ya matumizi ya madawa ya kulevya na ambao wamelazwa katika hospitali kuu ya mafundisho na rufaa ya Mathari. Wagonjwa watakaohusishwa wako na umri wa zaidi ya miaka kumi na minane na wako tayari kushiriki katika utafiti

Huu utafiti unalenga kupata kiwango cha matukio mabaya utotoni miongoni mwa wagonjwa walio na matatizo ya matumizi ya madawa ya kulevya.

Washiriki wapatao mia moja, thelathini na wane (134) watahusishwa katika muda wa yapata miezi miwili katika ukusanyaji wa takwimu.

Mahitaji ya kushiriki

Ili kushiriki katika utafiti huu unahitajika;

1. Kuwa miaka kumi na minane au Zaidi
2. Uwe katika hali ya kuelewa kuhusu huu utafiti
3. Kutia sahihi fomu ya ridhaa

Utaratibu

Ukikubali kushiriki katika utafiti huu;

1. Utaulizwa kutafanyiwa uchunguzi wa hali ha akili.
2. Utaulizwa kutia sahihi fomu ya kuridhia kushiriki kwa hiari yako.
3. Utaulizwa maswali ya kibinafsi kuhusu jamii yako na maisha yako ya kila siku, maswali kuhusu matumizi ya madawa ya kulevya na kuhusu matukio mbalimbali utotoni. Hii itakuwa katika dodoso litalochukua muda wa dakika thelathini (30).

Faida

Hakuna faida ya moja kwa moja kwa kushiriki katika utafiti huu.

Hata hivyo, matokeo ya utafiti huu yatasaidia wagonjwa, walezi na madaktari kuelewa vyema ushirikiano baina ya matukio mabaya utotoni an matumizi ya madawa ya kulevya. Hii itasaidia kuboresha matibabu ya wagonjwa na pia katika utekelezaji wa mikakati ya kuzuia matumizi ya madawa ya kulevya.

Hatari Ya Usumbufu

Kuna uwezekano unaweza kuhisi haya au wasiwasi ukipeana habari kuhusu matatizo ya matumizi ya madawa ya kulevya na matukio mabaya utotoni mwako ambayo ni mada nyeti.

Iwapo utapata usumbufu wa kisaikolojia utaelezwa na pia utapewa usaidizi wa kisaikolojia.

Kushiriki Kwa Hiari

Kushiriki kwako katika utafiti huu ni kwa hiari yako na ukiamua kushiriki una uhuru wa kuondoka kwa wakati wowote. Unaweza pia kuamua kutojibu baadhi ya maswali.

Uamuzi wako kutoshiriki ama kuondoka kutoka kwa utafiti hautaadhiri matibabu yako katika hospitali ya Mathari kwa sasa au katika siku za usoni.

Faragha

Utambulisho wako utawekwa kwa faragha. Jina lako wala namna yoyote ya kukutambulisha hazitatumika kwa ripoti yoyote ya utafiti huu. Badala yake utapewa nambari ya kulinda utambulisho.

Dodoso (Fomu ya maswali ya utafiti) utakayojaza itahifadhiwa kwa usalama, hakuna mtu ataweza kuifikia isipokuwa mimi au wasimamizi wangu. Takwimu zitakazokusanywa katika utafiti huu zitahifadhiwa kwa komputa an kuzuiliwa kwa watu wengine. Komputa zitakazohifadhi takwimu zitalindwa na nywila au namba za kisiri ili kulinda takwimu kutokana na matumizi yasioidhinishwa, kupotea ama marekebisho.

Fidia

Hakuna fidia yoyote kwa kushiriki katika utafiti huu.

Maelezo Zaidi

Iwapo unahitaji ufafanuzi zaidi au una maswali yoyote kuhusu utafiti huu unaweza kuwasiliana na;

4. Mpelelezi kupitia anwani ifuatayo:

    a. Dr. Sarah Kanana
    P.O Box 6495 – 00200,
    Nairobi
    Tel: (254) 725 756272

5. Msimamazi wa upelelezi kupitia anwani ifuatayo:

    a. Prof. Mary Kuria
    P.O. Box 19676 – 00202, Nairobi
    Email: wangari2@gmail.com

6. Kamati ya maadili ya utafiti ya pamoja ya chuo kikuu cha Nairobi na Hospitali kuu ya Kenyatta

    a. Kenyatta National Hospital
    P.O Box 20723-00202 Nairobi

    Tel: (254) 020 726300, Ext 44102, 44355

    Fax: 725272 Telegrams: medsup, Nairobi

    Emai: uonknh_erc@uonbi.ac.ke

    b. University of Nairobi, College of Health Sciences

    P.O. Box 19676 – 00202 Nairobi

    Tel: (254) 020 2726300 Ext: 44355, Telegrams: varsity.

Appendix IV: Informed Consent Form (Swahili Version)

FOMU YA RIDHAA

Mimi,..... (jina la mshiriki) nimesoma/nimeskiza na kuelewa yaliyotolewa kuhusu utafiti huu " ***Idadi Ya Matukio Mabaya Utotoni Miongoni Mwa Wagonjwa Wenye Matatizo Ya Matumizi Ya Madawa Ya Kulevya Katika Hopitali Ya Mathari***".

Nilikuwa na nafasi ya kuuliza .....(jina la anyechukua ridhaa); maswali katika lugha ninayoelewa na sasa ni wazi na nimeridhika.

Naelewa kwamba kushiriki kwangu katika utafiti huu ni kwa hiari yangu kabisa na naweza kujiondoa wakati wowote natakapo bila ya kutoa maelezo kwa kufanya hivyo. Mimi naelewa kwamba kuondoa ushiriki wangu, hukutaadhiri huduma yangu kwa njia yoyote.

Naelewa kwamba taarifa zote nitakazotoa, pamoja na taarifa binafsi itakuwa siri.

Mimi ninakubali kushiriki katika utafiti huu.

Jina la mshiriki: .....

Sahihi ya mshiriki:.....Tarehe:.....

Sahihi ya shahidi:.....Tarehe:.....

Jina la anayechukua ridhaa:.....

Sahihi :..... Tarehe: .....

Utapokea nakala ya fomu hii.

Iwapo unahitaji ufafanuzi zaidi au una maswali yoyote kuhusu utafiti huu unaweza kuwasiliana na;

1. Mpelelezi kupitia anwani ifuatayo:

    a. Dr. Sarah Kanana
    P.O Box 6495 – 00200,
    Nairobi
    Tel: (254) 725 756272

2. Msimamazi wa upelelezi kupitia anwani ifuatayo:

    a. Prof. Mary Kuria

    P.O. Box 19676 – 00202,

    Nairobi

    Email: wangari2@gmail.com

3. Kamati ya maadili ya utafiti ya pamoja ya chuo kikuu cha Nairobi na Hospitali kuu ya Kenyatta

    a. Kenyatta National Hospital

    P.O Box 20723-00202 Nairobi

    Tel: (254) 020 726300, Ext 44102, 44355

    Fax: 725272 Telegrams: medsup, Nairobi

    Emai: uonknh_erc@uonbi.ac.ke

    b. University of Nairobi, College of Health Sciences

    P.O. Box 19676 – 00202 Nairobi

    Tel: (254) 020 2726300 Ext: 44355,

    Telegrams: varsity.

Appendix V: ACE-IQ (English Version)

Adverse Childhood Experiences International Questionnaire (ACE-IQ)

1	DEMOGRAPHIC INFORMATION	
1.1 [C1]	Sex (Record Male / Female as observed)	☐ Male ☐ Female
1.2 [C2]	How old are you?	☐ Below 20 years ☐ 21 - 25 years ☐ 26 - 30 years ☐ 31 – 40 years ☐ Above 40 years
1.3 [C3]	What is the highest level of education you have completed?	☐ No formal schooling ☐ Less than primary school ☐ Primary school completed ☐ Secondary/High school completed ☐ College/University completed ☐ Post graduate degree ☐ Refused
1.4 [C4]	Which of the following best describes your main work status over the last 12 months?	☐ Government employee ☐ Non-government employee ☐ Self-employed ☐ Non-paid ☐ Student ☐ Homemaker ☐ Retired ☐ Unemployed (able to work) ☐ Unemployed (unable to work) ☐ Refused
1.5 [C5]	What is your average monthly net income?	☐ Less than Ksh. 20,000 ☐ 20,001 – 35,000 ☐ 35,000 – 50,000 ☐ Above 50,000 ☐ Other (Specify)……
1.6 [C6]	What is your civic status?	☐ Married ☐ Divorced or separated ☐ Single ☐ Widowed ☐ Other ……

1.7 [C7]	At what age did you first use any substance of abuse?	☐ Less than 10 years ☐ 11 – 15 years ☐ 16 – 20 years ☐ 21 – 30 years ☐ Above 30 years ☐ Other……..
2	**RELATIONSHIP WITH PARENTS/GUARDIANS**	
When you were growing up, during the first 18 years of your life . . .		
2.1 [P1]	Did your parents/guardians understand your problems and worries?	☐ Always ☐ Most of the time ☐ Sometimes ☐ Rarely ☐ Never ☐ Refused
2.2 [P2]	Did your parents/guardians really know what you were doing with your free time when you were not at school or work?	☐ Always ☐ Most of the time ☐ Sometimes ☐ Rarely ☐ Never ☐ Refused
3.1 [P3]	How often did your parents/guardians not give you enough food even when they could easily have done so?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
3.2 [P4]	Were your parents/guardians too drunk or intoxicated by drugs to take care of you?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
3.3 [P5]	How often did your parents/guardians not send you to school even when it was available?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused

3	**FAMILY ENVIRONMENT**	
When you were growing up, during the first 18 years of your life . . .		
4.1 [F1]	Did you live with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs?	☐ Yes ☐ No ☐ Refused
4.2 [F2]	Did you live with a household member who was depressed, mentally ill or suicidal?	☐ Yes ☐ No ☐ Refused
4.3 [F3]	Did you live with a household member who was ever sent to jail or prison?	☐ Yes ☐ No ☐ Refused
4.4 [F4]	Were your parents ever separated or divorced?	☐ Yes ☐ No ☐ Not applicable ☐ Refused
4.5 [F5]	Did your mother, father or guardian die?	☐ Yes ☐ No ☐ Don't know / Not sure ☐ Refused
These next questions are about certain things you may actually have heard or seen IN YOUR HOME. These are things that may have been done to another household member but not necessarily to you.		
When you were growing up, during the first 18 years of your life . . .		
4.6 [F6]	Did you see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted or humiliated?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused

4.7 [F7]	Did you see or hear a parent or household member in your home being slapped, kicked, punched or beaten up?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
4.8 [F8]	Did you see or hear a parent or household member in your home being hit or cut with an object, such as a stick (or cane), bottle, club, knife, whip etc.?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
These next questions are about certain things YOU may have experienced.		
When you were growing up, during the first 18 years of your life . . .		
5.1 [A1]	Did a parent, guardian or other household member yell, scream or swear at you, insult or humiliate you?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
5.2 [A2]	Did a parent, guardian or other household member threaten to, or actually, abandon you or throw you out of the house?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
5.3 [A3]	Did a parent, guardian or other household member spank, slap, kick, punch or beat you up?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
5.4 [A4]	Did a parent, guardian or other household member hit or cut you with an object, such as a stick (or cane), bottle, club, knife, whip etc?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused

5.5 [A5]	Did someone touch or fondle you in a sexual way when you did not want them to?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
5.6 [A6]	Did someone make you touch their body in a sexual way when you did not want them to?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
5.7 [A7]	Did someone attempt oral, anal, or vaginal intercourse with you when you did not want them to?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
5.8 [A8]	Did someone actually have oral, anal, or vaginal intercourse with you when you did not want them to?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
6	**PEER VIOLENCE**	
These next questions are about BEING BULLIED when you were growing up. Bullying is when a young person or group of young people say or do bad and unpleasant things to another young person. It is also bullying when a young person is teased a lot in an unpleasant way or when a young person is left out of things on purpose. It is not bullying when two young people of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.		
When you were growing up, during the first 18 years of your life . . .		
6.1 [V1]	How often were you bullied?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused

6.2 [V2]	How were you bullied most often?	☐ I was hit, kicked, pushed, shoved around, or locked indoors ☐ I was made fun of because of my race, nationality or color ☐ I was made fun of because of my religion ☐ I was made fun of with sexual jokes, comments, or gestures ☐ I was left out of activities on purpose or completely ignored ☐ I was made fun of because of how my body or face looked ☐ I was bullied in some other way Refused
This next question is about PHYSICAL FIGHTS. A physical fight occurs when two young people of about the same strength or power choose to fight each other.		
When you were growing up, during the first 18 years of your life . . .		
6.3 [V3]	How often were you in a physical fight?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
7	**WITNESSING COMMUNITY VIOLENCE**	
These next questions are about how often, when you were a child, YOU may have seen or heard certain things in your NEIGHBOURHOOD OR COMMUNITY (not in your home or on TV, movies, or the radio).		
When you were growing up, during the first 18 years of your life . . .		
7.1 [V4]	Did you see or hear someone being beaten up in real life?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused

7.2[V5]	Did you see or hear someone being stabbed or shot in real life?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
7.3 [V6]	Did you see or hear someone being threatened with a knife or gun in real life?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
8	**EXPOSURE TO WAR/COLLECTIVE VIOLENCE**	
	These questions are about whether YOU did or did not experience any of the following events when you were a child. The events are all to do with collective violence, including wars, terrorism, political or ethnic conflicts, genocide, repression, disappearances, torture and organized violent crime such as banditry and gang warfare.	
	When you were growing up, during the first 18 years of your life . . .	
8.1 [V7]	Were you forced to go and live in another place due to any of these events?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
8.2 [V8]	Did you experience the deliberate destruction of your home due to any of these events?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
8.3 [V9]	Were you beaten up by soldiers, police, militia, or gangs?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Refused
8.4 [V10]	Was a family member or friend killed or beaten up by soldiers, police, militia, or gangs?	☐ Many times ☐ A few times ☐ Once Never ☐ Refused

Appendix VI: ACE-IQ (Swahili Version)

Fomu ya maswali ya utafiti kuhusu matukio mabaya utotoni (ACE-IQ)

1	MAELEZO KUKUHUSU	
1.1 [C1]	Jinsia	☐ Kiume ☐ Kike
1.2 [C2]	Umri Wako	☐ Chini ya miaka 20 ☐ Kati ya miaka 21 na 25 ☐ Kati ya miaka 26 na 30 ☐ Kati ya miaka 31 na 40 ☐ Zaidi ya miaka 41 ☐ Sitajibu swali hili.
1.3 [C3]	Kiwango cha elimu	☐ Sijawahi kuenda shule ☐ Chini ya shule ya msingi ☐ Nimekamilisha shule ya msingi ☐ Kamilisha shule ya upili ☐ Taasisi /Chuo Kikuu ☐ Masomo ya uzamili ☐ Sitajibu swali
1.4 [C4]	Ni gani kati ya hizi inaeleza kazi yako kwa miezi kumi na miwili iliyopita?	☐ Nimeajiriwa na serikali kuu/Serikali ya kaunti ☐ Nimeajiriwa na kampuni isiyo ya serikali ☐ Nimejiajiri ☐ Nafanya kazi ya kujitolea bila malipo ☐ Mwanafunzi ☐ Kukaa nyumbani ☐ Nimestaafu ☐ Sina ajira (naweza kufanya kazi) ☐ Sina ajira (siwezi kufanya kazi) ☐ Sitajibu swali
1.5 [C5]	Kiwango chako cha mapato kwa mwezi?	☐ Chini ya shilingi 20,000 ☐ Shilingi 20,001 – 35,000 ☐ Shilingi 35,000 – 50,000 ☐ Zaidi ya shilingi 50,000 ☐ Sina pato lolote

1.6 [C6]	Hali yako ya ndoa	☐ Nimeoa / Nimeolewa ☐ Tunaishi pamoja ☐ Tulitalikiana/Tulitengana ☐ Sijaoa/Sijaolewa ☐ Mjane ☐ Hali nyingine……
1.7 [C7]	Je, ulianza matumizi ya madawa ya kulevya katika umri gani?	☐ Chini ya miaka 10 ☐ Miaka 11 – 15 ☐ Miaka 16 – 20 ☐ Miaka 21 – 30 ☐ Zaidi ya miaka 30 ☐ Maelezo ya ziada……..
2	**UHUSIANO NA WAZAZI / WALEZI WAKO**	
Kakita miaka ya kwanza kumi na minane ya maisha yako . . .		
2.1 [P1]	Je, wazazi au walezi wako walielewa shida zako au wasiwasi yako?	☐ Kila mara ☐ Mara Mingi ☐ Wakati Mwingine ☐ Nadra (Mara Chache) ☐ Hapana ☐ Sitajibu swali hili
2.2 [P2]	Je, wazazi au walezi wako walijua ulichokuwa ukifanya katika muda wako wa ziada wakati hukuwa shule au kazini?	☐ Kila mara ☐ Mara Mingi ☐ Wakati Mwingine ☐ Nadra (Mara Chache) ☐ Hapana ☐ Sitajibu swali hili
3.1 [P3]	Je, mara ngapi mzazi au mlezi alikosa kukupa chakula cha kutosha hata ingawa angeweza?	☐ Mara mingi ☐ Mara chache ☐ Mara moja tu ☐ Hakuna ☐ Kataa Swali

3.2 [P4]	Je, wazazi au walezi wako waliwahi kulewa zaidi kwa pombe au madawa mengine wakashindwa kukutunza au kukuchunga??	☐ Mara mingi ☐ Mara chache ☐ Mara moja tu ☐ Hakuna wakati kamwe ☐ Kataa Swali
3.3 [P5]	Je, ni mara ngapi wazazi au walezi walikataa kukutuma shule hata kama ilikuwa inapatikana?	☐ Mara mingi ☐ Mara chache ☐ Mara moja tu ☐ Hakuna ☐ Kataa Swali
3	**MAZINGIRA YA KIFAMILIA**	
<u>Katika miaka kumi na minane ya kwanza ya maisha yako</u>. . .		
4.1 [F1]	Je, uliishi na mtu wa jamii aliyekuwa na shida ya kulewa pombe au kutumia madawa ya kulevya?	☐ Ndio ☐ La ☐ Sitajibu swali hili
4.2 [F2]	Je, uliishi na mtu wa jamii aliyekuwa na hali ya huzuni, ugonjwa wa akili au tishio la kujiua?	☐ Ndio ☐ La ☐ Sitajibu swali hili
4.3 [F3]	Je, uliishi na mtu wa jamii aliyefungwa jela?	☐ Ndio ☐ La ☐ Sitajibu swali
4.4 [F4]	Je wazazi wako waliwahi kutengana au kutalikiana?	☐ Ndio ☐ La ☐ Sitajibu swali ☐ Maelezo ya ziada……..
4.5 [F5]	Je, Baba, Mama au mlezi wako aliwahi kujiua?	☐ Ndio ☐ La ☐ Sijui/Sina uhakika ☐ Sitajibu swali ☐ Maelezo ya ziada……..

Sehemu zifuatazo zinahusu mambo ambayo huenda uliyaona au kusikia nyumbani mwenu. Yanaweza kuwa yalifanyika kwa mtu mwingine wa fimilia na sio kwako binafsi.		
Katika miaka kumi na minane ya kwanza ya maisha yako . . .		
4.6 [F6]	Je, ulishuhudia au kusikia mzazi au mtu wa jamii yenu akipigiwa kelele, kutukanwa au kufedheheshwa?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
4.7 [F7]	Je, ulishuhudia au kusikia mzazi au mtu wa jamii yenu akipigwa kofi, akipigwa teke au kuchapwa?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
4.8 [F8]	Je, uliona au kusikia mzazi au mtu wa jamii yenu akigongwa au kukatwa na chombo kama vile kijiti, chupa, rungu, kisu au kiboko?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
Sehemu ifuatayo inahusu mamba fulani ambayo unaweza kuwa ulipitia katika miaka kumi na minane ya kwanza ya maisha yako.		
Katika miaka kumi na minane ya kwanza ya maisha yako . . .		
5.1 [A1]	Je mzazi au mlezi wako au mtu yeyote wa familia yenu alikupigia kelele, kukutukana au kukuaibisha hadharani?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
5.2 [A2]	Je, mzazi au mlezi wako au mtu yeyote wa familia yenu aliwahi kutushia kukuacha pekee au kukutupa nje ya nyumba?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali

5.3 [A3]	Je, mzazi,mlezi wako au mtu yeyote wa jamii yenu amewahi kukuchapa, kukupiga kofi, kukupiga teke?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
5.4 [A4]	Je, mzazi, mlezi au mtu yeyote wa jamii yenu amewahi kukugonga au kukukata na chombo kama vile kijiti, chupa, rungu, kisu au kiboko.	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
5.5 [A5]	Je, kuna mtu yeyote aliyekushika kwa njia ya kingono wakati haukuwa unataka kufanya hivyo?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
5.6 [A6]	Je, kuna mtu yeyote aliyekufanya kumshika mwili wake kwa njia ya kingono wakati haukuwa unataka kufanya hivyo?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
5.7 [A7]	Je, kuna mtu alijaribu kufanya ngono kwa mdomo, njia ya choo, au kwa njia ya uke kwako wakati haukuwa unataka kufanya hivyo?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
5.8 [A8]	Je, kuna mtu ambaye alifanya ngono kwa mdomo, njia ya choo, au kwa njia ya uke kwako wakati haukuwa unataka kufanya hivyo?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali

6	**DHULUMA YA WANARIKA**	
Sehemu ifuatayo ni kuhusu dhuluma ya wanarika ulipokuwa unakua. Kudhulumiwa ni wakati mtu au kundi la watu linasema au kufanya mambo mabaya kwa mtu mwingine. Pia ni kuonewa wakati mtu fulani, haswa kijana anapoachwa nje ya mambo fulani kwa kusudi na vijana wa rika lake. Sio kuonewa wakati watu wengine nguvu sawa wanabishana na kupigana au kupeana msoha kwa njia ya kinafiki.		
Katika miaka kumi na minane ya kwanza ya maisha yako. . .		
6.1 [V1]	Ulidhulumiwa na wanarika mara ngapi?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja ☐ Sikudhulumiwa kamwe ☐ Sitajibu swali hili.
6.2 [V2]	Je ulidhulumiwa kivipi?	☐ Niligongwa, kupigwa teke, kusukumwa au kufungiwa ndani ya nyumba ☐ Nilidharauliwa kwa sababu ya rangi, au kabila langu ☐ Nilidharauliwa kwa sababu ya dini yangu ☐ Niliadharauliwa kwa utani wa ngono au ishara za kingono? ☐ Niliachwa nje ya shughuli kwa kusudi au kupuuzwa kabisa ☐ Nilidharauliwa kwa sababu ya jinsi mwili, uso au umbo langu lilivyo onekana ☐ Nilionewa kwa njia moja au nyingine ☐ Sitajibu swali hili

Sehemu inayofuata ni kuhusu kupigana au kupambana kimwili kati ya vijana wawili au zaidi wa rika moja.		
Katika miaka kumi na minane ya kwanza ya maisha yako . . .		
6.3 [V3]	Je, uliwahi kupigana au kuhusika katika mapambano ya aina yoyote ile?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
7	**VURUGU ZA KIJAMII**	
Sehemu inayofuata ni kuhusu vurugu za kijamii ambazo uliona au kusikia kwa majirani wako (sio nyumbani kwenu, kwa televisheni au kwenye radio)		
Katika miaka kumi na minane ya kwanza ya maisha yako. . .		
7.1 [V4]	Je, uliona au kusikia mtu akipigwa hadharani?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
7.2[V5]	Je, uliona au kusikia mtu akidungwa kisu au kupigwa risasi hadharani?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
7.3 [V6]	Je, uliona au kusikia mtu yeyote akitishiwa na kisu au bunduki hadharani?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali

8	MAPIGANO AU VITA	
Sehemu inayofuata ni kuhusu vurugu za pamoja kama vile vita, ugaidi, migogoro ya kisiasa au kikabila, mauaji ya kimbari, kukandamizwa, kutoroshwa, mateso au uhalifu wa kutumia nguvu uliopangwa kama vile majambazi, genge na kadhalika.		
Katika maika kumi na minane ya kwanza ya maisha yako . . .		
8.1 [V7]	Je, umewahi kulazimishwa kuhamia mahali pengine pa kuishi kwa sababu ya tukio lolote kati ya haya?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
8.2 [V8]	Je, ulishuhudia nyumba yenu ikiharibiwa kwa makusudi kwa sababu ya tukio lolote kati ya haya?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
8.3 [V9]	Je, ulishawahi kuchapwa na wanajeshi, polisi au genge lolote?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali
8.4 [V10]	Je, kuna mtu yeyote wa familia yako au rafiki aliyeuliwa, au kuchapwa na wanajeshi, askari polisi au genge lolote?	☐ Mara mingi ☐ Mara Chache ☐ Mara moja tu ☐ La hasha. ☐ Sitajibu swali

Appendix VII: ASSIST Questionnaire (Modified Version)

Interviewer Id _____ Country _____ Clinic _____

Patient Id _____ Date _____

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

These set of questions comes from a brief interview about alcohol, tobacco products and other drugs. These questions ask about your experience of using these substances across your lifetime and in the past two months. These substances can be smoked, swallowed, snorted, inhaled, injected or taken in the form of pills.

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

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

If "No" to all items, stop interview.

Probe if all answers are negative:

"Not even when you were in school?" *If "Yes" to any of these items, ask Question 2 for each substance ever used.*

In the past three months, how often have you used the substances you mentioned *(FIRST DRUG, SECOND DRUG, ETC)*? Katika miezi mitatu iliyopita, mara ngapi umetumia madawa uliyoyataja (dawa ya kwanza, ya pili ….)	Never kamwe	Once or Twice Mara moja au mbili	Monthly Mara moja kwa mwezi	Weekly Mara mooja kwa wiki	Daily or Almost Daily Kila siku/ karibu kila siku
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
d. Cocaine (coke, crack, etc.)	0	2	3	4	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	2	3	4	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	2	3	4	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	2	3	4	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	2	3	4	6
j. Other - specify:	0	2	3	4	6

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

Kama " kamwe" kwa sehemu zote za swali 2, enda swali 6

If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5 for <u>each substance</u> used.

Kama dawa yoyote katika swali 2 imetumika kwa miezi tatu iliyopita,endelea na maswali 3, 4 & 5 kwa kila dawa iliyotumika

Question 3

Swali 3

During the past three months, how often have you had a strong desire or urge to use *(FIRST DRUG, SECOND DRUG, ETC)*? *Katika miezi tatu iliyopita, je ni mara ngapi umekuwa na hamu kubwa ya kutimia madawa haya* ..?	Never kamwe	Once or Twice Mara moja au mbil	Monthly Mara moja kwa mwezi	Weekly Mara moja kwa wiki	Daily or Almost Daily Kila siku ama karibu kila siku
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3	4	5	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3	4	5	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3	4	5	6
d. Cocaine (coke, crack, etc.)	0	3	4	5	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3	4	5	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3	4	5	6
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3	4	5	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3	4	5	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3	4	5	6
j. Other - specify:	0	3	4	5	6

During the past three months, how often has your use of *(FIRST DRUG, SECOND DRUG, ETC)*led to health, social, legal or financial problems? Katika miezi tatu iliyopita, je ni mara ngapi utumizi wa madawa haya umesababisha shida za kijamii, sharia au pesa?	Never kamwe	Once or Twice Mara moja ama mbili	Monthly Mara moja kwa mwezi	Weekly Mara moja kwa wiki	Daily or Almost Daily Kila siku au karibu kila siku
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	4	5	6	7
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	4	5	6	7
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	4	5	6	7
d. Cocaine (coke, crack, etc.)	0	4	5	6	7
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	4	5	6	7
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	4	5	6	7

g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	4	5	6	7
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	4	5	6	7
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	4	5	6	7
j. Other - specify:	0	4	5	6	7

Question 5

During the <u>past three months</u>, how often have you failed to do what was normally expected of you because of your use of *(FIRST DRUG, SECOND DRUG, ETC)*? Je, katika miezi tatu iliyopita ni mara ngapi umekosa kutimiza jukumu zako kwa sababu ya madawa haya?	Never kamwe	Once or Twice Mara moja ama mbili	Monthly Mara moja kwa mwezi	Weekly Mara moja kwa wiki	Daily or Almost Daily Kila siku/karibu kila siku
a. Tobacco products	0	5	6	7	8
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	5	6	7	8
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	5	6	7	8
d. Cocaine (coke, crack, etc.)	0	5	6	7	8
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	5	6	7	8
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	5	6	7	8
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	5	6	7	8
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	5	6	7	8
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	5	6	7	8
j. Other - specify:	0	5	6	7	8

Question 6

Has a friend or relative or anyone else ever expressed concern about your use of *(FIRST DRUG, SECOND DRUG, ETC.)?* Je, rafiki ama jamaa wako ama mtu yeyote amekuwa na wasiwasi kuhusu jinsi unatumia madawa	No Never Hapana	Yes, in the past 3 months Ndio, katika miezi tatu iliyopita	Yes, but not in the past 3 months Ndio, lakini si katika miezi tatu imetha
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

Question 7

Swali 7

Have you ever tried and failed to control, cut down or stop using *(FIRST DRUG, SECOND DRUG, ETC.)?* *Je, umewahi kujaribu bila kufaulu kudhibiti, kupunguza au kuacha kutumia haya madawa ?*	No Never Hapana	Yes, in the past 3 months Ndio, katika miezi tatu iliyopita	Yes, but not in the past 3 months Ndio, lakini si kwa miezi tatu imepita
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3

f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

Question 8

Swali 8

	No Never La hata kamwe	Yes, in the past 3 months Ndio, katika miezi tatu iliyopita	Yes, but not in the past 3 months Ndio, lakini si katika miezi tatu iliyopita
Have you ever used any drug by injection? *(NON-MEDICAL USE ONLY)* *Je, ushawahi kwa wakati mmoja kutumia dawa yoyote kwa kujidunga?* *(ISIPOKUWA ULIYOPEWA KWA HOSPITALI)*	0	2	1

IMPORTANT NOTE:

Patients who have injected drugs in the last 3 months should be asked about their pattern of injecting during this period, to determine their risk levels and the best course of intervention.

PATTERN OF INJECTING	INTERVENTION GUIDELINES
Once weekly or less or Fewer than 3 days in a row	→ Brief Intervention including "risks associated with injecting" card
More than one per week or 3 or more days in a row	→ Further assessment and more intensive treatment*

HOW TO CALCULATE A SPECIFIC SUBSTANCE INVOLVEMENT SCORE

For each substance (labelled a. to j.) add up the scores received for questions 2 through 7 inclusive. Do not include the results from either Q1 or Q8 in this score. For example, a score for cannabis would be calculated as: Q2c + Q3c + Q4c + Q5c + Q6c + Q7c

Note that Q5 for tobacco is not coded, and is calculated as: Q2a + Q3a + Q4a + Q6a + Q7a

THE TYPE OF INTERVENTION IS DETERMINED BY THE PATIENT'S SPECIFIC SUBSTANCE INVOLVEMENT SCORE

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

NOTE: *FURTHER ASSESSMENT AND MORE INTENSIVE TREATMENT may be provided by the health professional(s) within your primary care setting, or, by a specialist drug and alcohol treatment service when available.

Appendix VIII: Approval Letter Mathari Hospital

Dr. Sarah Kanana

P.O.BOX 6495-00200 Nairobi

Tel:0725756272

15.09.2015

15/9/15

The Medical Superintendent

Mathari Teaching and Referral Hospital

P.O. BOX 40663-00100 Nairobi

Proceed with research study

FOR MEDICAL SUPERINTENDENT Date SIGN MATHARI HOSPITAL

Dear Sir,

Re: Approval to conduct study

I am a postgraduate student at the University of Nairobi, Department of psychiatry Reg. No. H58/69151/2013. I wish to conduct a study at Mathari Teaching and Referral Hospital.

The study is titled '*The Prevalence Of Adverse Childhood Experiences Among Patients With Substance Use Disorders At Mathari Hospital.*' This is inpartial fulfilment for the degree Master of Medicine, Psychiatry.My supervisors are Prof. Mary Kuria and Dr. Anne Obondo from the Department of Psychiatry, University of Nairobi.

The study population will be patients receiving inpatient treatment for substance use disorders at the hospital. The sample size will be 134 patients from the general wards and the Rehabilitation Centre. The screening tools to be used are Adverse Childhood Experiences International Questionnaire (ACE-IQ) and Alcohol and Substances Involvement Screening Tool (ASSST).

I have already obtained approval to conduct the study from the KNH/U.O.N. Ethics & Research Committee (KNH/UON ERC)

For any inquiries concerning the study you can contact the KNH/UON. ERC via Tel: 020 726300, Ext 44102, 44355

Yours Faithfully

Sarah Kanana

Appendix IX: Approval Letter KNH /UON- ERC

UNIVERSITY OF NAIROBI
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
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/349

11th August 2015

11 AUG 2015

Dr. Sarah Kanana
Dept.of Psychiatry
School of Medicine
University of Nairobi

Dear Dr. Kanana

Research Proposal – Prevalence of Adverse Childhood Experiences (ACEs) among Patients with substance use disorder at Mathari Hospital (P481/07/2015)

This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed and **approved** your above proposal. The approval periods are 11th August 2015 – 10th August 2016.

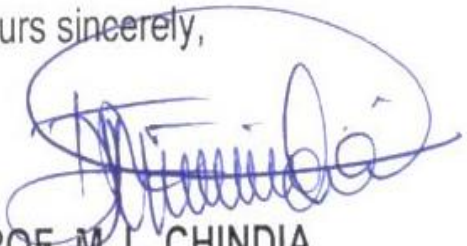
This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN ERC before implementation.
c) Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH/UoN ERC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72 hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
f) Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research Committee for each batch of shipment.
g) Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN ERC website **http://www.erc.uonbi.ac.ke**

Protect to discover

Yours sincerely,



PROF. M. L. CHINDIA
SECRETARY, KNH/UON-ERC

c.c. The Principal, College of Health Sciences, UoN
The Deputy Director CS, KNH
The Chair, KNH/UoN-ERC
The Dean, School of Medicine, UoN
The Chairman, Dept. of Psychiatry, UoN
Supervisors: Prof. Mary Kuria, Dr. Anne Obondo

Appendix X: Clearance Letter Mathari Hospital

MATHARI HOSPITAL

CLEARANCE TO UNDERTAKE RESEARCH IN MATHARI HOSPITAL

TO: Rehab, Wards incharge's Dates 8/10/2015

This is to inform you that (name/no. of students)

Sarah Kgnana

From (Name of training institution)

UON

Has/have been cleared by the office of the Medical Superintendent to undertake research at Mathari hospital from October to November 2015

Please accord them/him/her the necessary support.

Thanks

C.M.E.D.

In-Charge C.M.E.D

Appendix XI: Study Timeline and Budget

Table 16: Study Timeline

Activity	Duration	Dates
Drafting the proposal	4 months	February – May 2015
Seeking approval at ethics committee	3 months	June – August2015
Data collection	2 months	October – November 2015
Data analysis and report writing	3 months	January – March 2016

Table 17: Budget

Category	Remarks	Units	Cost (Ksh)	Total (Ksh)
Proposal development	Printing	3 x 71	10/page	2,130
	Photocopying	3 x 71	5/ page	1,065
	Internet charges	-	-	8,000
Data collection	Questionnares	150 x 45	5/ page	33,750
	Stationary (Assorted)	-	-	3,000
	Transport	5 days/ week for 8 weeks (40 days)	500/day	20,000
Data analysis and report writing	Biostatician	1	30,000	30,000
	Printing report	6		3,000
Contingencies	10% of total	-	10%	10,095
Grand total	-	-	-	111,040

The study was self-sponsored hence the researcher met all the costs in the budget.