

**PATTERNS OF TRAUMATIC EVENTS, SEVERITY OF POST TRAUMATIC  
STRESS DISORDER AND ALCOHOL USE AMONG HIGH SCHOOL  
STUDENTS IN TURKANA COUNTY**

**A RESEARCH DISSERTATION IN PARTIAL FULFILLMENT FOR THE  
DEGREE OF MASTER'S IN CLINICAL PSYCHOLOGY**

**BY**

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**REG. NO.: H56/7572/2017**

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**A RESEARCH DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT  
FOR THE REQUIREMENTS OF THE AWARD OF MASTER'S OF SCIENCE  
DEGREE IN CLINICAL PSYCHOLOGY OF UNIVERSITY OF NAIROBI,  
KENYA**

**JULY, 2021**

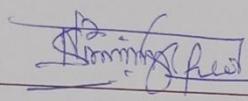
## DECLARATION

Student:

This research dissertation is my original work and has not been submitted for examination in this university or any other university.

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### APPROVAL OF SUPERVISORS

This research proposal has been submitted for review with our approval as the University of Nairobi supervisors.

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## **DEDICATION**

This research study is dedicated to all civilians and military persons who have undergone traumatic experiences. The study is also dedicated to residents of Turkana County who are currently experiencing mental health problems resulting from adverse environmental stressful situations.

## **ACKNOWLEDGEMENTS**

I thank the almighty God for the gift of life during the process of writing this research proposal.

I take this opportunity to express my gratitude to my supervisors Dr. Khasakhala and Dr. Mbwayo for tirelessly reviewing my research work and moulding it to the expected standards.

I also acknowledge the Kenya Defence Forces for providing the financial support and time to study.

Am heavily indebted to the sacrifices made by my family in support of my academic pursuit. I appreciate my wife Jennifer Namoe, my children Caleb, Michelle and Adiel for the moral support.

## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>AD:</b>	Alcohol dependence
<b>ASSIST:</b>	Alcohol, Smoking and Substance Involvement Screening Test
<b>AUD:</b>	Alcohol Use Disorder
<b>KDF:</b>	Kenya Defence Forces
<b>KNH:</b>	Kenyatta National Hospital
<b>LEC:</b>	Life Event Checklist
<b>PTSD:</b>	Post traumatic stress disorder Operation Enduring Freedom
<b>PTS:</b>	Post traumatic stress
<b>LEC-UCLA:</b>	Life event checklist- University of California
<b>UoN:</b>	University of Nairobi
<b>WHO:</b>	World Health Organization

## OPERATIONAL DEFINITIONS

**Traumatic Events:** are described as those events or activities that poses a threat of serious injury or death to oneself or others, and elicits feelings of intense fear, helplessness, or horror. They are events that can lead to chronic health conditions resulting in acquired disabilities.

**Post-Traumatic Stress Disorder:** is a disorder that is characterized by a failure to recover after experiencing or witnessing a terrifying event and the condition may persist for longer period (months or years), with triggers that can bring back memories of the trauma accompanied by intense emotional and physical reactions.

**Alcohol Use:** is the consumption of beverages containing ethyl alcohol. Alcoholic beverages are consumed largely for their physiological and psychological effects, but they are often consumed within specific social contexts and may even be a part of religious practices.

**Painful medical treatment:** Any invasive procedure that causes fear and pain such as surgery, and in this study Male circumcision

**Education:** is the process by which learning is facilitated or the acquisition of knowledge, skills, values, beliefs, and habits.

**High School:** is an academic institution that offers secondary school education.

**Student:** in this study, a student is anyone attending high school for the acquisition of knowledge, skills or values.

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## ABSTRACT

**Introduction:** Turkana is one of the counties with numerous insecurities matters that has caused many intra and inter community traumatic experiences among the residents. Consequently, such insecurity coupled with high poverty levels has exposed the adolescent group into increasing the traumatic events.

**Objective:** To explore the patterns of traumatic events, assess the severity of post-traumatic stress disorder (PTSD) and alcohol use among high school students in Turkana County and determine socio-demographic correlates of these disorders.

**Methodology:** A cross sectional research design was adopted in this study. This is a method used to describe patterns of traumatic situations as well as the severity of PTSD and alcohol use among students in high schools in Turkana County, Kenya. A sample size of 312 participants was chosen using multi-stage stratified random sampling method. Set tools Socio-demographic questionnaire, Alcohol Smoking and Substance Involvement Screening Tool (ASSIST) and Life Events Checklist-University of California Los Angeles (LEC-UCLA) were used for data collection.

**Results:** Results from this study are presented in form of graphs and frequency tables with data being entered into excel for analysis and SPSS version 25 was used to analyse the results. The patterns of traumatic events, severity of PTSD, alcohol use and Socio-demographic correlates among high school students in Turkana County will be analysed. A total of 305 students participated in the study. 60.9% were male, the mean age of 19 years. 72% attended boarding schools, average number of siblings was five with 82% of them having a guardian. Out of the participants 63.7 % reported to have experienced at least one traumatic event at one point in their lives. Traumatic patterns identified included being in a war environment and death of a loved one. PTSD prevalence was 53.1%, with 37.7% having mild symptoms, 55.6% moderate, and 6.8% having severe symptoms. Alcohol use had a prevalence of 26.3%; of these 31.3% showed mild severity and 68.7% had moderate usage. There was a significant association between traumatic events and PTSD and alcohol use with post-election violence ( $p=0.011$ ), natural disasters (floods, fire, famine ( $p=0.027$ ), being exposed to war environment ( $p=0.003$ ), physical assault ( $p=0.001$ ), seeing a dead body ( $p= 0.030$ ), violent death of loved ones ( $p=0.005$ ) and painful medical treatment ( $p= 0.002$ ) being pronounced. A multivariate analysis indicated that gender (OR 1.269 95% CI 0.732 to 2.201), presence of a guardian (OR 1.053 95% CI 0.540 to 2.053) and type of school (OR 1.610 95% CI 0.722 to 3.590) increased the odds of PTSD occurrence; PTSD and alcohol had an odds ratio of 0.98, meaning that students with PTSD symptoms are 0.986 more likely to use alcohol.

**Conclusion:** Results generated from the study reveal that high school students do face traumatic events and as a result develop PTSD and alcohol use problems. More studies are needed to explore the extent of this problem in Turkana County and what the community and government can do to alleviate the problem. These results would contribute to the body of knowledge existing on severity of PTSD and alcohol use among high school students.

# **CHAPTER ONE: INTRODUCTION AND BACKGROUND INFORMATION**

## **1.1 Introduction**

Turkana County, one of the counties in Kenya, is the second largest after Marsabit and sparsely populated. The county is characterized by multiple intra and inter-communal conflicts and provision of security by the national government is very low. The locals depend mainly on services of National Police Reservists (NPR) who lack training and offer their services on a voluntary manner. The insecurity in the region has made the local communities to acquire illegal arms for self-defence and hence increased arms trade from neighbouring countries like Ethiopia, South Sudan, Uganda and Somalia; heightened by civil wars and unrest.

The intercommunity conflict in the region have been fuelled by competition over water, grazing land and livestock resources and this has affected both internal and international boundaries of Turkana County. The county has experienced conflicts from varied directions, for instance, conflict between Dassenech and Merille, two communities from Ethiopia in the Northern and also Ileret in Marsabit County. Additionally, the Nyangatom from Ethiopia, and from South Sudan (Toposa) as well as Dodoth from Uganda, are some of other cross border communities attacking Turkana. Internally, the county has experienced attacks from Pokot, which has become severe and occurred almost daily affecting the entire transport and education due to cattle rustling and road banditry and first quarter of 2015 witnessed an average of 12 attacks per month.

In addition, the discovery of oil in some parts of Turkana County has complicated the search for peace among communities, escalating the existing enmity. The relationship between the local communities and investors experiencing challenges mainly in terms of community expectation, opportunities, participation and communication. Consequently, these numerous tribal conflicts expose growing traumatic experiences to high schools' students which causes severe stress response.

### **1.2.1 Post-Traumatic Stress Disorder (PTSD)**

Post-Traumatic Stress Disorder is a psychiatric disorder that can occur upon exposure to traumatic situations and is characterized by intrusive symptoms that are associated to events that are traumatic, persistent avoidance of stimulants, poor cognition and low mood, slow arousal and reactivity. The common co-occurrence among alcohol use disorders which is rated between 30%-59% is one of the common clinical issues complicating the treatment of PTSD. In their study Swenden et al (2010) investigated mental disorders and its relationship to substance use, abuse as well as dependence and reports that co-occurrence can result to a serious prognosis in the disorder. According to their findings published in chapter of Diagnostic and statistical manual of mental disorders 5<sup>th</sup> Edition (DSM-5), the disorders affecting children and adolescents are adjustment disorder, acute stress disorder, reactive attachment, stress or related disorders and unidentified trauma and stress or related disorder (American Psychiatric Association, 2013).

Globally, the high burden of trauma can be linked to man-made events, and evidence shows trauma is and will still continue to occur in many social contexts a notable example is that a family and community abuse of the children as well as adolescents, various gender-based violence, institutional violence, huge disasters and terrorist attacks tend to cause or lead to traumatic experience (Yattam et al, 2018).

Atwoli et al (2015) in an epidemiological research on trauma and PTSD focusing on global connection. This included prevalence, risk factors and the results in society show that the level of exposure was high among low-income states compared with high income countries. Additionally, their study showed that the PTSD prevalence rates were similar in many countries but with higher rates found in post-conflict environment. The PTSD and trauma related risk factors can be distributed evenly in the low-income nations in comparison to high-income nations and socio-demographic elements that contribute mainly to the risk in the high income compared to lower income nations.

### **1.2.2 Alcohol Use**

The DSM 5 has recognized the substance related disorders that come from 10 separate types of drugs with one of the common being alcohol. As noted by Hibell et al (2010) individuals aged between 12-16 years in the age category at which adolescent always go out for the first time due to parental influence which decreases while friends increase. Moreover, part of the phase is experimenting using stimulants but a growing concern regarding use of alcohol among adolescent. Recent research show that students drink alcohol at early ages and growing trends reveal more young individuals drink alcohol excessively (Steketee, et al, 2012).

Continued research in the area of alcohol shows increasing global attention on substance abuse among young people especially those aged 10-24 years. Moreover, this is the age in which adolescent age brain undergoes cognitive and emotional development. Degenhardt et al, (2013) in a study found that at peak age which is the start of alcohol use, and also tobacco and other related substance use becomes the common substance to be abused by the young people.

### **1.3 Problem Statement**

Trauma adversely affects mainly the neurobiological system that is responsible for cognitive development and the emotional and behaviour regulation. It is often argued that in adolescent stages it can lead to delay in development process that can at times allow them consider the implications of the behaviour. Consequently, young people who can suffer from the trauma can be reckless and also prone to some risk-taking behaviour; tend to spend their energy both emotional and mental in responding to coping and attempting to come into terms with the situation.

Studies conducted in USA by American National survey of Adolescents show that one in every four children and young people have experienced one potentially traumatic situation before attaining the age of 16 years and 13% among 17 years old adolescent, while one in every eighth adolescent have suffered from PTSD in at least once in their lives. Moreover, the young people often access many substances including alcohol which tend to cause stress and increases the chances that adolescent group can experience trauma. A study by Yvonne and Chasser (2016) estimates that 29% of the

adolescents have used illegal drugs by the time they complete their eighth grade and 41% have used alcohol. They reported every year, an estimated one in five adolescents in USA who are aged 12-17 have engaged in the use of alcohol.

#### **1.4 Justification of the study**

Turkana County is located in the arid part of Kenya which is characterized by famine and drought. The county is not only characterized by cattle rustling with neighboring communities but also frequent attacks by the neighbouring countries. The young people who are students in high schools are mostly affected because they are the productive members of the community and are always in the front line in conducting raids and protecting the older members and children from harm. These violent activities predispose the young people to PTSD and alcohol use.

PTSD and use of alcohol among students in high school within Turkana County remains largely unnoticed. Young people are supposed to be the most productive population but for this group of young people to be dealing with the effects of PTSD and use of alcohol the negative effects and consequences could compound to greater mental health problems. This problem needs to be addressed at regional, national, community, institutional and individual level. This can be achieved if there is enough data.

This study seeks to explore the traumatic events, determine severity of PTSD and alcohol usage among students in high schools in Turkana County. The study findings will be added to scholarly literature on PTSD and alcohol use and will aid in formulating policies regarding integration of PTSD and alcohol use services. It is for this reason that this study explores the severity of PTSD and alcohol use among high school students in Turkana County.

## **1.5 Research Questions**

- i. What are the patterns of traumatic events among high school students in Turkana County?
- ii. What is the severity of PTSD and usage of alcohol among students in high school in Turkana County?
- iii. Is there any relationship between forms of trauma and severity of PTSD and use of alcohol among high school students in Turkana County?
- iv. What is the effect of socio demographic correlates on the severity of PTSD and use of alcohol among high school students in Turkana County?

## **1.6 Study Objectives**

### **1.6.1 Broad Objective**

To explore the patterns of traumatic events, severity of post-traumatic stress disorder and alcohol use among High School Students in Turkana County and determine the effect of socio-demographic correlates.

### **1.6.2 Specific Objectives**

- i. To explore the patterns of traumatic events among high school students in Turkana County.
- ii. To determine the severity of PTSD and alcohol use among high school students in Turkana County.
- iii. To establish the associations between patterns of trauma and severity of PTSD and alcohol use among high school students in Turkana County.
- iv. To assess the effect of socio-demographic correlates on the severity of PTSD and alcohol use among high school students in Turkana County.

## **1.7 Significance of the Study**

The current study will contribute to the body of knowledge in the area of trauma events, prevalence of PTSD, and alcohol use. Previous studies which were mainly carried on western countries such as US, UK, Australia, and Canada mainly focused on specific populations in the military. Few studies have been done among civilians in

conflict prone areas like Turkana. The relevance of the study lies in the examination of patterns of traumatic events, severity of post-traumatic stress disorder and alcohol use among High School students. Therefore, the findings from this study would help in creating credible information that can be used by policy makers to intervene through programs targeting the youth.

Therefore, this study will be relevant in identifying the prevalence of PTSD and alcohol use in a bid to address problems affecting the youth especially as Kenya is rolling out the universal healthcare for all its citizens.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter looks at the previous scholarly work done on PTSD and use of alcohol among high school students globally, in Africa and in Kenya. There are limited current studies which have been done in Kenya recently.

### **2.2 Patterns of Trauma among Students in High School**

Numerous studies in the area of trauma among children, have reported negative effect of these children at a later date of their lives and this include alcohol dependence. Schwangt et al, (2013) examined the occurrence of many types of childhood trauma among patients seeking treatment from alcohol dependency. They used multiple mediation analysis and found that prevalence of five categories of trauma emotional abuse among children and also sexual as well physical abuses, emotional abuses as well as physical mistreatments. The data collected was among 280 patients under treatments; alcohol dependent patients and 137 controls questionnaire. Their finding showed that trauma among children was significantly strong and severe in those who are alcohol dependent group. Moreover, trauma influence alcohol dependence severity, and impact is mediated by neuroticism.

Individually, emotional abuses strongly predicted alcohol dependence severity while physical exploitation exhibited moderate direct outcome on the alcohol dependence severity. In their findings, mediation showed no link between child trauma and alcohol use disorder identification text score in the control group.

A sexual assault historically can be linked to high risk of drinking problem and abuse among women, yet there is little is known regarding mediations associated to the trauma in general to women's drinking. Other studies investigated several categories of trauma, and abusing substance and PTSD that is related to previous drinking problem especially women who have experienced women assault. Data from sample of 1863 women who had sexual assault was analysed using structural equation model to test link between trauma, substance use, PTSD symptoms and previous drinking behaviour as well as use of drugs. The result sowed that PTSD symptoms mediates the relationship non-interpersonal traumatic events and use of substance to cope. (Ulman et al,2013). They reported partial link between interpersonal traumatic situations and child sexual abuse.

More closely related studies were conducted by Schiff et al (2012) focusing on post-traumatic symptoms among high school students and the abuse of substance and also participation in violence follows wars. This study used data collected from 4151 Jewish and Arab students mainly a year following their exposure to events war on the adolescent's post-traumatic stress symptoms (PTS) to address whether trauma rose to address vulnerabilities of Israel children to PTS and risk behaviours if exposed PTS and risk behaviours if exposed to wars. They reported in their findings that high exposure to wars to these children (both Israel and Arabs) and physical abuse was linked to high levels of PTS symptoms, alcohol abuse and they participate in violent activities. According to their findings Arab students had higher vulnerabilities compared to Jewish. The study also found that the students used more cannabis, exhibited higher PTS Symptoms and more involvement in school violence.

On the incidences of PTSD and depressions among the students attending junior middle school in China, Wang et al (2012), in their study found that earthquake (some of the natural calamities) contributes to traumatic disorder. They used a data collected from a sample of 1841 in students attending junior middle school in China using population – based mental health survey. They found that prevalence rate for PTSD was 28.7 and 33.7 among females with male (24.7) in a severe exposure while 23.37 among the mild exposure group. The study further concludes that the traumatic events experienced by young people during earthquake were strongly associated with symptoms of the PTSD.

More recent studies confirm that secondary traumatic stress continue to receive attention mainly among the survivors, therapists, researchers and family members. Bilewicz et al, (2018) in a research reports that people who get exposed to late traumatic events after visiting areas such as Museum exhibitions are likely to develop secondary traumatic symptoms. The study reported signs of secondary traumatic stress among high school students who had visited Auschwitz memorial museum. About 137 high schools' students who visited the museum showed high levels of secondary trauma even a month after the visit to the museum.

Traumatic brain injury; another form of traumatic event has received attention among scholars. For example, Cole et al (2016) using a 19-item survey instrument collected data from 159 students attending Kentucky High school in USA and the focus was all-terrain vehicles driving, duration of riding, weekly member of riding and the number of helmets is used. Cole and team reported that men high score among the items except frequency of all-terrain vehicles and number of times helmet is used showed no difference. Their study showed that about 9% of the students often wore helmets while driving or riding with 61% having no helmet or had worn their helmets. Moreover, they found that 83% had either driven all-terrain driving or the second rider. Some of the students (217) sustained serious injuries –concussion unconsciousness, fractures in the skull, elbow and dislocations of the hips.

Regarding child neglect and bullying Edwards et al (2016) conducted a study to examine configurations of caregivers and mistreatments that takes place in high school students. They utilized Kruskal Wallis H and Mann-Whitney U Test to examine the cases of bullying and rate of victimization among high students who stayed with their caregivers that is undertaken away from home; using data from a sample of 3793 participants they reported high school students sent out of home placements were victims and not perpetrators of bullying many times than their peers. In a study of post-traumatic stressful situations and their relationship with substance use behaviours in alternative high school, Arpaweng et al (2015) reported that higher PTG score was linked to low frequency of alcohol use, binge drinking, use of marijuana and the low substance abuse. According to their study PTG didn't moderate relationship sum score of SLEs and the behaviours in substance use.

Empirical evidence links childhood maltreatment to urge to use alcohol or other substance. Taplin et al (2014) carried out a cross-sectional study to examine the long-term and the challenge in treating intravenous opiates users of Northern American Opiate Medical Institute. The study was conducted at Vancouver and Montreal in Canada and used a sample of 87 children who were being or had been abused and were followed for 12 months. The study found alcohol consumed by matters had significantly linked to child sexual abuse, emotional abuse and physical abuse. Taplin et al., (2014) found that alcohol use by paternal and use of drug has significant linkages with child physical abuse.

In Africa studies have looked at the link between political violence and PTSD. For example, Moussa *et al* (2015) in a research done in Egyptian school children attending public schools, they found that a higher proportion of depression, anxiety and PTSD. The sample used by the researchers was 515 children attending schools within one kilometre of Tahir square in Egypt. Duplessing *et al* (2015) in another investigated how various forms of violence contributed to internalization and the externalization symptoms among young people (adolescents) in schools in South Africa. Using data collected from 616 high school students, who completed self-assessment form, they found that all six forms of violence led to PTSD among adolescent group.

It is reported that exposure to violent situation poses a higher risk for PTSD and increase in aggressive behaviours. Sommer *et al.* (2017) in a study carried out in South Africa's Cape Town rehabilitation centre hosting offenders used data from a sample of 290 subjects who were recruited to participate in the study. They found that there were high societal disapprovals associated with many cases of PTSD symptoms and greater aggressions.

Moreover, past experiences of recognition were also linked to PTSD symptoms and high number of violent offences. They conclude that besides violence, other issues that play an essential role in the severity of PTSD and aggressions are social acknowledgement. Atwoli *et al* (2015) carried out a study on the relationship between people who witness traumatic event and the outcome such as mood, anxiety and substance use. They utilized regression model to assess mood, anxieties and substance disorders among the individuals as seen in the stress and health studies in South Africa. They found that people who witnessed traumatic situations were common among men and also those with lower average education. Their study further showed that those who witnessed trauma had elevated likelihoods of mood as well as anxiety disorders but not substance use disorders.

Studies have also linked attachment orientation to severity PTSD and Elklit *et al* (2016) investigated the link between different types of trauma, attachment, and PTSD using data from 3735 participants with Harvard Trauma Questionnaires and Revised Audit Attachment Scale as data collection instruments. They found that a secure attachment style was linked to a lower PTSD severity. In addition, they reported that

an insecure attachment style was associated with higher levels of PTSD severity. Even though attachment dimensions are associated with PTSD severity, the attachments anxiety exhibited greater prediction of PTSD. As such, PTSD symptoms categories do not depend on attachment dimensions.

They concluded that while the trauma among individuals who survived illnesses within the family and secure attached group were found to have lower PTSD severity among injury overcomers of illness and physical wellbeing, the pompously connected people demonstrated the most minimal degree of PTSD seriousness, contrasted with other connection gatherings.

It has also been shown that adolescent in South Africa encounter high levels of trauma - childhood maltreatment. In a study, Van den Heuvel et al., (2018), utilized a cross-sectional structure to research impacts of youth abuse on disguising and externalizing issue in injury presented young people and to survey the intervening impact of post-horrible pressure issue (PTSD) on these affiliations. They focused on 262 young people matured somewhere in the range of 12 and 18 years of age and Childhood Maltreatment and PTSD seriousness were evaluated utilizing the Childhood Trauma Questionnaire and the Child PTSD Checklist, individually. Their study revealed that sexual maltreatment was fundamentally connected with disguising issue while physical maltreatment and sex were related with externalizing issue, yet the expansion of PTSD seriousness didn't altogether modify these affiliations.

In Kenya, Harder, et al. (2012) carried out a study to examine effects of post-election violence among adolescent group. Using a random sampling, they selected 552 youth who were living in the informal settlement areas in Nairobi County. Their findings reveal that 47% of the young adults reported more than five major traumatic events which they had experienced including seeing a dead body, watched or seen somebody being tortured or shot, being in a spot where a war was going on, general injury during postelection savagery, being in a shoot or flood, and sexual abuse. The three classifications of horrible accidents that received support by over 20% of the two kids and teenagers looked at someone being beaten or gave, seeing a dead body, and being in a spot where there were continuous wars.

In a study by Mbwayo (2020) in Kenya involving high school students estimated prevalence and covariates of PTSD among secondary school students using

UCLA PTSD reaction index; findings revealed that there is a high percentage of school children aged between 11-17 years witnessing traumatic events.

## **2.2 Severity of PTSD and alcohol use among high school students**

Katie et al (2013), in an investigation of horrendous introduction and posttraumatic stress issue drew a national example from 6,483 pre-adult and parent matches in the National Comorbidity Survey Replication Adolescent. A national overview of young people matured 13 to 17 years in which ages exposures to relational viciousness, mishaps/wounds, arrange/seeing, and other Post injury exposures were evaluated alongside DSM-IV post-traumatic stress disorder and different pain, dread, conduct, and substance issue was finished. The study reported that 62% of young people had encountered a lifetime post injury presentation. Lifetime predominance of DSM-IV PTSD was 5% and was essentially higher among females (about 7%) than among guys (2%). It additionally uncovered that, Exposure to relational brutality was most elevated among young people not living with both natural guardians and with previous conduct issue.

Ranney et al, (2016) in a cross-sectional review on PTSD, digital harassing and friend savagery and looked to discover the commonness and associates among pre-adult crisis division patients (among young people matured 13-17 years) introducing to the emergency office under any circumstances. Their examination was led from August 2013 to March 2014 utilizing approved self-report measures to quantify psychological wellness side effects, savagery introduction and unsafe practices. They performed Multivariate calculated relapse examination to decide balanced contrasts in relationship between indications reliable with PTSD and anticipated connects. Their results demonstrated that out of 353 teenagers, 23.2% detailed current indications predictable with PTSD, about 14% had moderate or higher burdensome side effects and 11% revealed past-year self-destructive ideation. Furthermore, young people regularly revealed physical friend viciousness (47%), digital harassing (46.7%) and presentation to network brutality (59%). On multivariate calculated relapse, physical companion brutality, digital tormenting exploitation, introduction to network viciousness, female sexual orientation and liquor or other medication utilize emphatically related with indications reliable with PTSD.

Additionally, Zachary et al (2014) while investigating the prevalence and predictors of PTSD and depression among 2000 youth victims of tornado outbreak in Spring 2011. This sample comprised adolescents and their caregivers who were randomly recruited from communities that were affected by Tornado and telephone interviews were performed and it was found that the prevalence of PTSD and MDE was calculated by age, gender and total study. Hierarchical logistic regression was used to classify the PTSD and MDE risk factors. The findings found that, 7% of youths met analytic conditions for PTSD and 8% of teenagers met indicative criteria for MDE since the tornado. Young ladies were altogether almost certain than young men to meet demonstrative criteria for MDE, and more seasoned youths were more probable than more youthful teenagers were requested to report. Female sexual orientation, earlier injury introduction, and a harmed relative were related with more serious hazard for PTSD. Explicit occurrence qualities (losing administrations, worry about others' wellbeing) were related with more prominent PTSD hazard; earlier debacle introduction was related with lower MDE chance.

Cenat and Derivois (2015) concentrate on information examination on the Long-term results among kid and youthful overcomers of the 2010 Haitian tremor utilizing data gathered from June to July 2012 using a sample of 872 members who were between the ages of 7-17 years of every 12 schools, entryway to-entryway campaigning and two habitats for road kids at Port-au-Prince. Results indicated that 322 (37%); and 403 (46%) announced a clinically noteworthy side effects of PTSD and despondency individually, which were fundamentally higher among young ladies.

Liu et al (2013) concentrate on prevalence and indicators of PTSD and burdensome manifestations among 3052 kid survivor one year after the Wenchuan seismic tremor in China whereby members were controlled children post-traumatic stress disorder symptom scales and the centre for the epidemiologic research, the depression scale used among children and also the earthquake scale. The discoveries showed that the pervasiveness paces of likely PTSD and gloom were about 9% and 43% respectively.

Demographic factors such as age and sex and most parts of seismic tremor encounters including direct presentation, close ones' introduction, dread for the security

of close ones, earlier introduction to injury, living area, and house harm, except for sort of lodging) made special commitments to PTSD and burdensome manifestations. What's more, the directing impact of sex on the connections between age and PTSD and burdensome indications was huge.

Somewhere else, Dierkhising (2013) concentrated on injury narratives among equity included children in Europe showed that age of beginning of injury presentation was inside the initial five (5) years of life for 62% of youth and around 33% of youth report introduction to numerous or co-happening injury types every year into immaturity. It additionally demonstrated that the mental health problems predominated with 24 percent of youth meeting the PTSD requirements, 66 percent in the outsourcing range and 45.5 percent in the disguising category. Similarly, early period of onset of injury presentation was linked differently to psychological health problems and associated danger factors among men and women.

Frounfelker, et al, (2013) concentrate on trauma and post-traumatic stress issue among the youth with genuine emotional well-being conditions uncovered that 94% members had a background marked by injury, of which 36% had PTSD. It was discovered that sexual maltreatment was fundamentally connected with a PTSD and the main one-of-a-kind indicators of PTSD and progress age youth in upheld network lodging had higher paces of injury presentation and PTSD than the general pre-adult populace.

Moreover, Steketee, et al (2013) concentrate on Alcohol use Among Adolescents in Europe showed that 89% of understudies drank mixed refreshments at any rate once in a blue moon and 78% in the earlier year. Furthermore, at any rate once in a blue moon 42% of understudies were smashed and 30% in the earlier year and at any rate once in the earlier month 32.0% of understudies had at least five beverages in succession. It additionally uncovered that young men took liquor more regularly and got drunk more frequently than young ladies.

In other studies on substance use and drug use, Greenery (2014) utilized information from Wave 4 of the Add Health Survey on early juvenile examples of liquor, cigarettes, and pot polysubstance use and youthful grown-up substance use results in a broadly delegate test among 4245 young people preceding age 16. Their

results demonstrated that albeit 34% of people detailed no substance use before age 16, 34.1% announced either early utilization of liquor and marijuana or liquor, weed and cigarettes, showing the generally high predominance of this sort of polysubstance use conduct among U.S. young people. This early juvenile utilization of each of the three substances was most unequivocally connected with a range of youthful grown-up substance use issues, just as DSM-IV substance use issue analyse.

Valter et al (2012) methodical audit of the writing to discover the prevalence of liquor and the use of tobacco among youths in Brazil with authors utilizing google scholar, pubmed, web of science and Lilacs. The study adopted Portuguese and English languages and there was no restriction on the time of production (up to June 2011). From the hunt, 59 examinations met all the incorporation criteria: to include Brazilian teenagers matured 10-19 years. They found that commonness of current liquor use extended from 23% to 68%. The mean pervasiveness was 35%. A huge extent of the examinations assessed predominance of continuous liquor use (67%) and overwhelming liquor use (36.8%) of over 10%. The Brazilian writing has featured that ecological element such as strict rules, the working conditions as well as use of substance among couples. and psychosocial factors, (for example, clashes with guardians and sentiments of negativeness and dejection) to be related with the tobacco and liquor use among youths.

### **2.3 Forms of trauma and the severity of PTSD and alcohol use**

Early Life Affliction (ELA) and PTSD are related with less fortunate mental and physical wellbeing. Potential fundamental instruments and arbiters stay to be explained, and the way of life propensities and qualities of people with ELA as well as post-traumatic stress disorder hasn't been completely investigated. Research is undertaken to examine whether the nearness of ELA as well as post-traumatic stress disorder linked to sustenance, physical action, resting and dozing and smoking. The authors adopted cross-sectional research design with a total sample of 151 both male and female experienced anthropometric estimations, just as nitty gritty surveys for dietary evaluation, physical movement, resting and dozing, smoking propensities and psychosocial appraisals. A forthcoming follow-up visit of 49 people for nearly three years after the fact and similar results were evaluated.

Both disorders were assessed as indicators, notwithstanding a variable surveying the joined nearness/seriousness of ELA-PTSD. The study findings showed that children with high levels of Early Life Affliction and PTSD seriousness were found to have a more unfortunate eating regimen quality including further utilization of trans-unsaturated fats; the distinctions were fundamentally constricted invalid in the wake of changing essentially for training or salary or potentially race.

Salazar et al (2013) concentrate on Trauma introduction and PTSD among more established youths in child care found that dominant part of respondents had encountered, in any event, one injury in the course of their life. While by and large injury predominance didn't contrast by sex, guys were bound to encounter relational savagery and ecological injury, while females were bound to encounter sexual injury. Caucasian members revealed higher paces of injury presentation than African-American members. The kinds of injury related with the most elevated likelihood of a lifetime PTSD conclusion were assault, being tormented or a casualty of psychological oppressors, and attack.

In another study, Kate et al (2012) exploratory examination on the issues that are related to PTSD in Adolescence utilizing considers distributed from 2000 to 2011. They reported that young people are at more serious danger of encountering injury than either grown-ups or kids, and that the commonness of PTSD among youths is 3-57%.

Moreover, age, sexual orientation, kind of injury, and rehashed injury are examined as elements identified with the expanded paces of juvenile PTSD. The study also revealed that PTSD in pre-adulthood is additionally connected with suicide, substance misuse, poor social help, scholastic issues, and poor physical wellbeing. McCart et al (2012) concentrate on relationship between posttraumatic stress issue (PTSD) side effects and future relational exploitation among young people, subsequent to representing the effect of early exploitation presentation, sexual orientation, ethnicity, family unit pay and hazardous liquor use.

They established that PTSD manifestations essentially anticipated age-related increments in relational exploitation, much subsequent to representing the impacts of prior exploitation encounters. Moreover, it uncovered that PTSD side effects fill in as a hazard factor for ensuing exploitation among young people, well beyond the hazard gave by earlier exploitation.

#### **2.4 Effect of socio demographic on the severity of PTSD and alcohol use**

A cross sectional study conducted by Wu et al (2011) to assess the psychological symptoms associated with the aftermath of a snowstorm disaster in the Hunan province of China in January 2008. Their findings revealed that students living in Hunan were surveyed at a three-month follow-up after the disaster. They also found that students with higher school-to-home distances had higher levels of PTSD symptoms compared to students who lived shorter distances from school.

Students with emotional support from their teachers reported significantly lower levels of PTSD symptoms compared to students with no emotional support from teachers. These findings show that the risk factors that have a significant influence on the onset of posttraumatic stress reactions in students living in Hunan, China following a snowstorm disaster were; the school-to-home distance, negative coping, neuroticism, and teacher's emotional support.

There is also a significant increase in use of psychoactive substances among adolescents in Africa. Despite the heavy use of alcohol among adolescents in Nigeria is growing, there are no clear policies of alcohol sales to regulate drinking patterns among this population group. Among this population group, the findings have revealed more current and lifetime alcohol use among males than females. The findings also revealed that the common reasons for using alcohol include; staying awake in order to study at night, drinking to forget one's problems, drinking to reduce anxiety and drinking for recreational purposes.

The results further indicated that peer pressure associated with satisfying friends or to not be seen as different from others predicted alcohol use, while problems associated with substance use were also reported among substance users. Amongst other factors, the absence of alcohol control policies increased alcohol availability in schools and also increased alcohol use (Dumbili, 2015).

In Africa, Hamdulay et al (2011) conducted studies on the patterns of substance use and associated factors among high school students in Mitchells Plain, Cape Town in South Africa and among secondary school students in an urban setting in Nigeria respectively. Findings revealed that alcohol use had a significant association with age, substance use by other members of the household, carrying a knife, attempted suicide

and higher sexual risk, being male, relief from stress, self-medication and to stay awake at night to study.

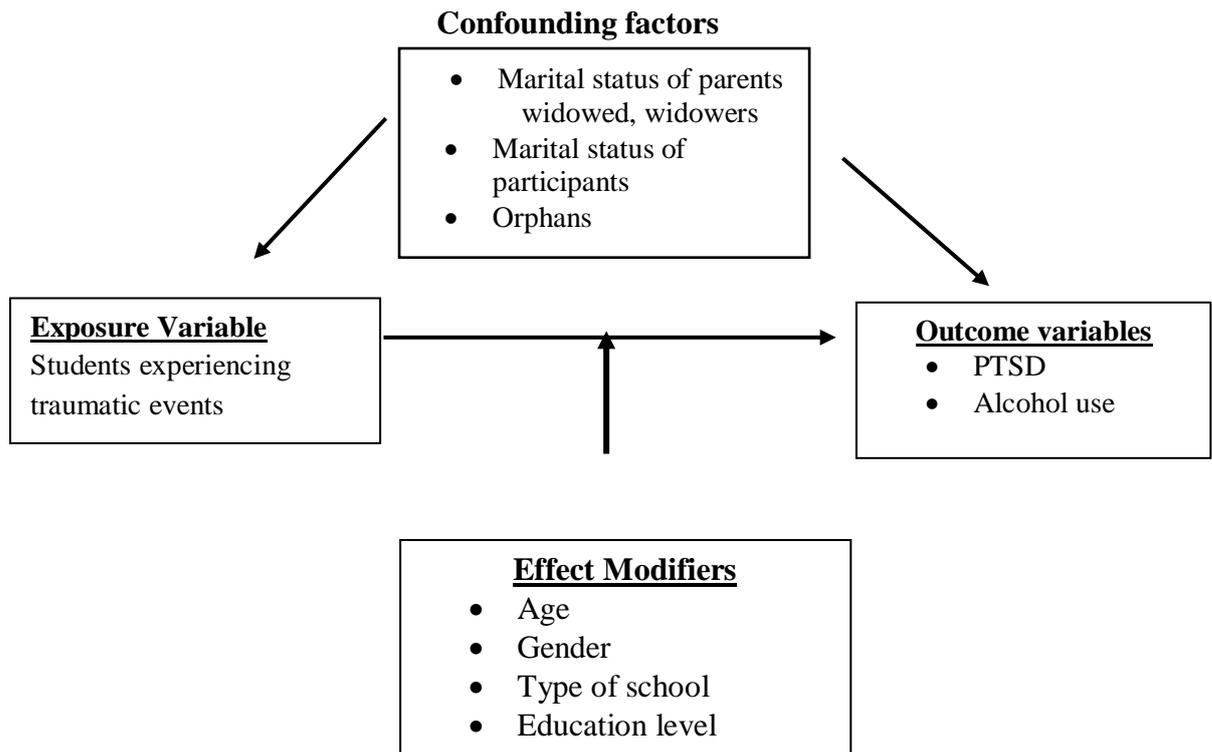
Harder et al (2012) study on multiple traumas, postelection violence, and posttraumatic stress among impoverished Kenyan youth in Nairobi six months after the end of violence. The findings revealed that avoidance was identified as the predominant symptom in diagnosing PTSD according to the DSM-IV-TR. The frequency of trauma experiences had a significant influence on PTSD outcomes. The findings revealed no significant difference in terms of age and gender.

## **2.5 Conceptual Framework**

This study examines the patterns of traumatic events, severity of post-traumatic stress disorder and alcohol use among high school students in Turkana County.

In this study, several variables interact, for example, the exposure variable will be altered to measure the changes that will occur in the outcome variable. When intentionally choosing to alter the students experiencing traumatic events' exposure, it is possible to increase or decrease the exposure by precise amounts.

The confounding factors influences both independent variables and dependent variable to produce and causes false association and considering there are various subgroups participating in this study, effect modifiers help in providing precise estimating effect on the variables producing exposure effects.



**Figure 1: Conceptual framework (researcher 2021)**

### **Interaction of variables**

Exposure to traumatic events among high school students in Turkana County is the independent variable that may predispose them to either post-traumatic stress disorder or alcohol use. These are the outcomes or the dependent variables. This relationship can be affected by age, gender, home location, socio-economic status and education level. Socio-demographic correlates acting as confounders have effects on both the exposure variable and outcome variable.

## **2.6 Theoretical framework**

### **2.6.1 Theoretical model for PTSD development follows the Stress response theory by Horowitz (1976, 1986)**

This theory has origins in the psychodynamic observations of normal and abnormal bereavement reactions. It has a long practice highlighting people's change of individual assumptive worlds. Horowitz argued that initial response when faced with trauma, is outcry at the awareness of the suffering. Following the initial response, the individuals try to assimilate the new trauma information with prior knowledge. At this point, many individuals experience a period of information overload during which they

are unable to match their thoughts and memories of the trauma with the way that they represented meaning before the trauma.

Psychological defence mechanisms try to address the tensions and the intrusive memories that accompany traumatic events. It is not possible to completely deal with consequences of trauma as a break into consciousness in form of nightmares, flashbacks and intrusions are used to reconcile the new and the old information to create a balance. These consciously experienced trauma memories provide the individual with an opportunity to try to reconcile them with pre-trauma representations. It becomes apparent that, according to Horowitz, there are now two opposing processes at work: One to defend the individual by suppressing trauma information and one promoting the working through of the traumatic material by bringing it to mind. Therefore, the individual oscillates between avoidance and intrusions of the trauma.

### **2.6.2 Theoretical model for substance use**

This study has employed two theoretical frameworks for substance use.

#### **Edward Khantzian's Self-Medication Hypothesis of substance use disorders.**

The self-medication theory suggests that individuals who misuse alcohol avoid emotions that are distressing by employing rigid defences that can result in disillusioned states. According to Dodgen and Shea, 2000 alcohol has relaxing and sedating features which are thought to relieve emotional tension as they allow defensive structures to be softened (Khantzian, 1997).

#### **A motivational model of alcohol use by Miles Cox and Eric Klinger (1988)**

Another proposition by Miles Cox and Eric Klinger (1998) brings the idea of conscious and deliberate decision in the part of the person involved. He/she decides consciously or unconsciously to consume or not to consume any drink of alcohol. According to these individuals the positive affective consequences of drinking will outweigh those of not drinking. The factors reinforcing the drinking habit may include past experiences with drinking and the current life situation. These factors are always modulated by person's neurochemical reactivity to alcohol. Other incentives and their prospects would lead the person either to engage in the activity or not.

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Introduction**

This section gives a conversation of the exploration system that was utilized. It examined the execution plan particularly as for the decision of the structure. In particular, the chapter discusses research design, site to undertake the study, target population, sampling and data collection instruments as well as how to analyse the data.

### **3.2 Research Design**

A cross-sectional research design was used in this study. The cross-sectional design can only measure differences between or from among a variety of people, subjects, or phenomena rather than change. In this research design, the researcher was able to measure outcomes and the exposure of research subjects in the same time. The design has been chosen because it was not costly and saves time.

### **3.3 Study Site**

The study site is Turkana County, one of the largest counties after Marsabit that covers an estimated surface area of 77,000 Square Kilometres. The county borders Uganda to the West, South Sudan to North and Ethiopia to the East.

It has an expected populace of 1,400,000 individuals. It is officially partitioned into 7 sub regions. The inhabitants are generally pastoralists. It is set apart by global and multi ethnic populace. The secondary school populace is evaluated to be 6,680 students in government/public schools, this is as per Turkana regional government second yearly strategic plan of 2017.

### **3.4 Study Population and Target Population**

According to Turkana County Integrated Development Plan 2013-2017, the high school population is estimated to be 6,680 students in 33 schools, spread in the county and has a population of 225 government teachers. The targeted population for this study would be drawn from high school students attending public schools and includes mixed, girls only, and boys' only schools. While the youth constitutes the majority in the county, this study has selected high school because they represent diverse groups within the county, ethnic groups and also schools are convenient for the researcher.

**Table 3.4 Target Population**

No	Subcounty	No. of school	No. of Students
1	Turkana Central	8	1,940
2	Turkana North	5	980
3	Turkana South	4	560
4	Turkana East	3	450
5	Turkana West	4	840
6	Kibish	3	450
7	Loima	6	1,460
	Total	33	6,680

Source: Turkana County Integrated Development Plan 2013-2017

The study targets one sub-county selected randomly from the seven sub-counties. Then from the selected sub-county one boys' school, one mixed (boys and girls) and one girls' secondary school.

### **3.5 Determination of Sample Size**

In determining the sample size of students which will be drawn from the study population the researcher will adopt a formula by Krejcia and Morgan (1972)

$$n_0 = \frac{X^2 * N * P * (1 - P)}{(ME^2 * (N - 1) + (X^2 * P * (1 - P)))}$$

$n_0$  = sample size

$\chi^2$  = Chi-Square for particular Confidence Level when set at 1.96 since the confidence interval is 95%. Confidence level is the probability that a measured quantity will fall within a given confidence interval.

N = Population Size

P = Proportion (0.50)

ME = desired margin of Error (expressed as a proportion). This expresses the amount of random sampling error in a survey's results (0.05).

On substitution of values.

$$n_0 = \frac{3.846^2 \times 1648 \times 0.50 \times (0.50)}{(0.05^2 \times (1648 - 1) + (3.846^2 \times 0.50 \times (0.50)))} = 312$$

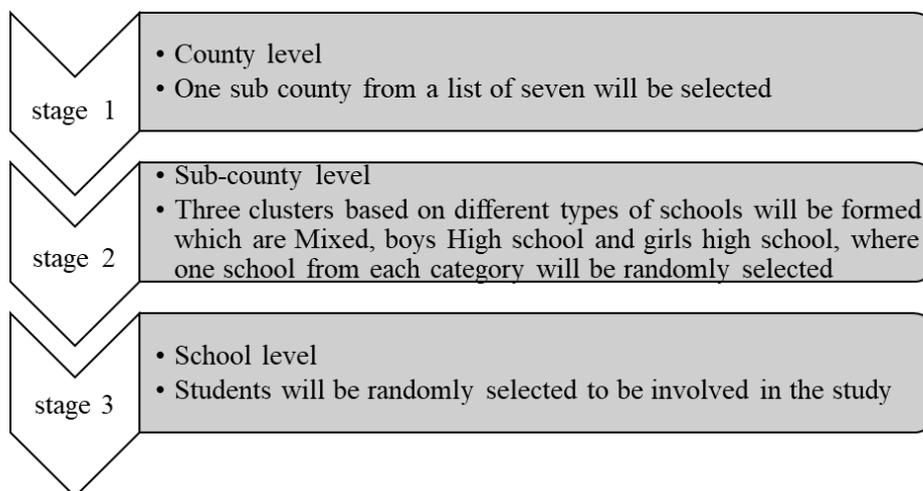
The sample size in this study will be adjusted to the three secondary schools where the study will be carried out. Therefore, the sample size for this study is 312.

### 3.6 Sampling Method

#### 3.6.1 Study Design and Sampling Plan

The study will be carried out among high school students in Turkana County. The Researcher would utilize multi-stage sampling method. The study has selected multi-stage sampling because it allows the researcher to apply cluster or random sampling after determining the groups and the researcher make clusters and sub-clusters until the researcher reaches the desired size or type of group (Taherdoost, 2016). Furthermore, the study considered this sampling technique for the study because it reduces data collection costs.

A single sub county will be randomly chosen from a list of six. Clusters of three different types of schools which is Mixed schools, Boys High schools and Girls high school, then from each cluster a single school will be randomly selected. The sample size will be proportionately divided according to the different school’s student population until the required sample size is attained for the study on severity of PTSD and alcohol use among high school students in Turkana County as shown in the illustration below:



**Figure 2:** Turkana County sample selection (researcher 2021)

#### 3.6.2 Sampling Frame

According to Ishak, Bakar and Yazid (2014) sampling frame is a list of all subjects in a population who can be sampled and can include individuals, households

or institutions. The study will be carried out among secondary school students in Turkana County in Kenya. Therefore, the sample frame for this study will be a list of schools according to the number of students, and also region where the school is located.

### **3.6.3 Inclusion and Exclusion Criteria**

In order to ensure that only the selected study subjects with similar characteristics participate, those subjects that are disqualified from the study, it is good to define who should be included and who should be excluded. As such, the study will consider the following for inclusion in the study: Students who will assent and consent, students who will be present at the school during the period of study, and those aged between ages 14- 24 years. On the other hand, the study will exclude study subjects who will be under the age of 14 years, anyone who will refuse to participate voluntarily, and those who will be out of school for more than two weeks.

### **3.6.4 Variables**

The researcher will use PTSD and Alcohol use as dependent variables; students experiencing traumatic events as the independent variable; home location, socio economic status, education level as the mediating factors and marriage status, home status as confounding factors.

### **3.6.5 Data Collection Instruments**

The study used structured questionnaires for the study which will consist of three sections to be completed by the participants. First part was to include researcher developed questions assessing socio-demographic factors including gender, age, sex, and type of school among others.

Secondly, the study used a tool (Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)) developed by World Health Organization (WHO) in 2012. The study participants were encouraged to answer the ASSIST with regards to the standard drinks. The tool has been tested severally going through three sequential phases (I, II and III).

The third section is the life event scale -UCLA and this is a homogeneous self-report rating scale used examination of trauma life events and the key symptoms of PTSD. It has been modified to fit the Kenyan population at different time frames. Respondents state whether they have experienced any trauma and indicate using a 5-point scale how much they have been bothered by a symptom over the past month. Researcher then added up all items for a total severity score. The tool was valid and reliable having been used in Kenyan populations. Administration time was 20-30 minutes.

### **3.6.6 Data Collection Procedures**

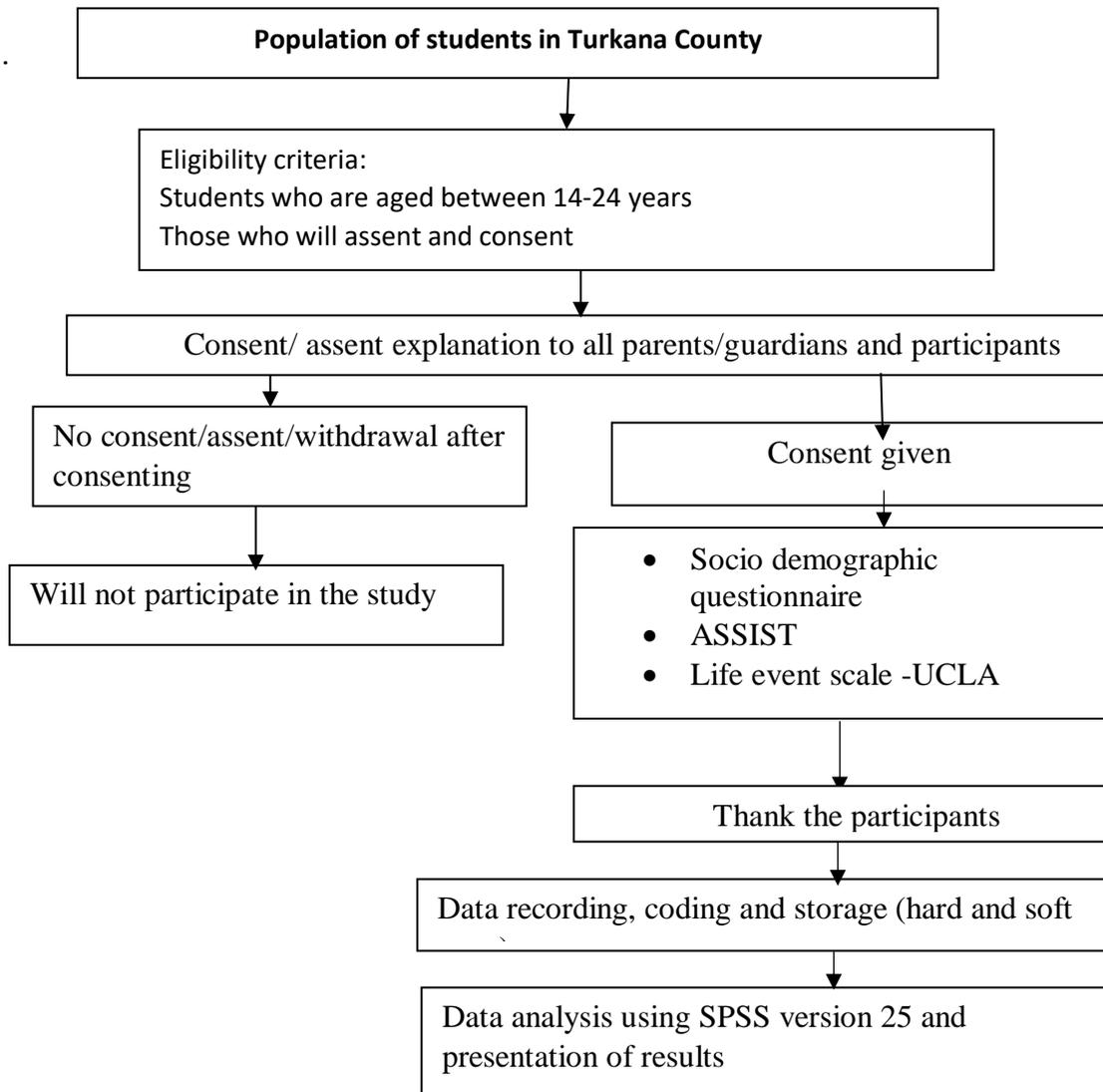
As part of the data collection procedures, the researcher will systematically follow the following steps. First, upon approval of the proposal by the university after successful defence of research proposal, the researcher will apply for approvals from Ethics Research Committee at Kenyatta National Hospital and University of Nairobi. Secondly, the study will apply for research permit from the National Commission for Science, Technology and Innovation (NACOSTI). Thirdly, the study will apply permission from County Education Coordinator and subsequently County Commissioner at Turkana County to conduct the research within the County.

Finally, the study applied for permission from the relevant administration to conduct the research within the targeted schools. The schools received notification of researcher's intention to undertake the study, its purpose, objectives and the benefits that will possibly come out from this study in the future. The researcher pre-visited the secondary schools to present to the school principal the written approvals. The researcher will then randomly select participants from the sample frame starting from form ones onwards until the sample size required is achieved.

Participation in the study was completely voluntary and no student will be forced to participate in the study. Since the students are all minors, selected students will be given consent forms to give their parents or the teacher who acts as guardian to sign and allow their children to take part in the study. If the students have given an assent to take part in the study and the parents/ teacher have not given consent, such students will not be allowed to participate in the study. Those who will be selected will

be enrolled to participate in the study the same day. Teachers were kept away from the hall to prevent coercing participants. The researcher was present throughout as participants were filling the questionnaires to offer any required assistance. Data collection duration was three weeks.

### 3.6.7 Recruitment and Consenting Procedures Sampling Flow Chart



**Figure 3: Recruitment and Consenting Procedures Sampling Flow Chart**

### 3.6.8 Pre-test study

The researcher carried out pre-test study among 10 students at St. Kevin’s mixed secondary school to establish the appropriateness of the instruments and to evaluate the process (recruitment rate and eligibility criteria), resources (time) and management (problems with data management).

### **Validity of Instrument**

Validity of an instrument is the extent to which the analysis of the data actually represents the variables under study. It is the exactness of an instrument used to measure the variable that it is intended to measure. The questionnaire used enables the researcher to probe more from the participants. A pilot study's data was subjected to Cronbach's alpha which is a coefficient of reliability that gives an unbiased estimate of data.

### **Reliability**

The consistency of a measure is referred to as Reliability. It is the extent by which the results are dependable over time and if the results of a study can be reproduced under similar methodology, then the research instrument is considered to be reliable. When the study gives consistent results after repeated trials, its deemed to be passing the reliability test. This study used the Coefficient Alpha (Cronbach's Alpha) which is a coefficient of reliability that gives unbiased estimate of data generalizability (Taber, K. S. (2018)).

### **3.7 Data management**

The information collected was patterned for completeness then coded for confidentiality. It was then sent for data entry and was stored in both hard and soft copy. Soft copy documents were protected using unique passwords which were to be known only to the researcher and the hard copies were locked securely in the researchers' cabinet away from public access. The soft copies were ready for data analysis.

### **3.8 Data Analysis**

The study collected both mainly quantitative data which was entered into a computer and analysed. Statistical Package for Social Science version 25 (SPSS version 25) was used to analyse and understand the data in order to present the study findings in a friendly format. Descriptive statistics for Socio demographic characteristics, ASSIST and scores from life event scale-UCLA were presented. This study used linear regression to determine the effect of students experiencing traumatic events on PTSD on alcohol use among secondary school students in Turkana County. Socio demographic data was also analysed under which linear regression analysis was done to determine its influence on PTSD and alcohol use among secondary school students in Turkana County. Findings were analysed to give the scores to show the presence and severity of self-reported Alcohol use and PTSD. Findings were then presented in form of tables, graphs, and frequency tables.

### 3.8.1 Dummy Tables of Expected Results

**Table 1 Patterns of traumatic events**

Forms of trauma	Frequency	Percentage (%)

**Table 2 Severity of post-traumatic stress disorder**

	Severity		
Substance	Mild	Moderate	Severe
Alcohol			

**Table 3 Severity of post-traumatic stress disorder (PTSD)**

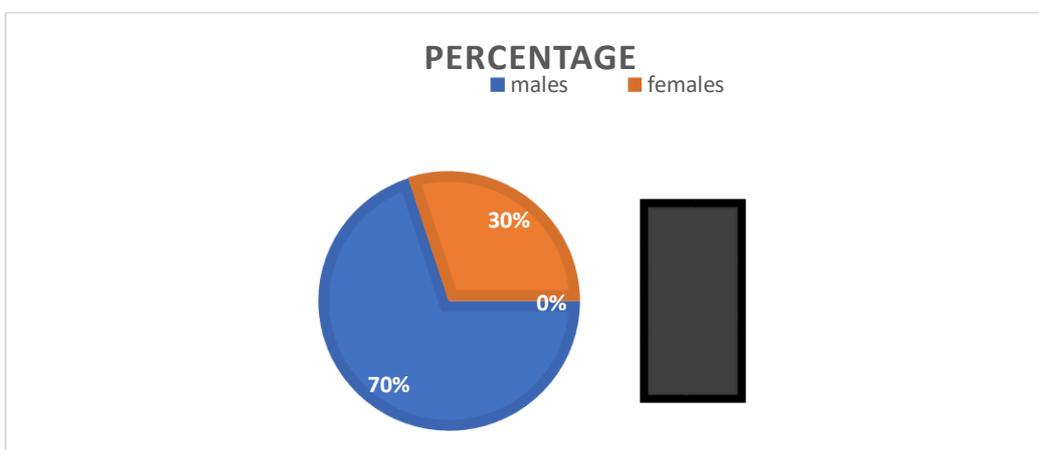
Variable	Severity		
	Mild	Moderate	Severe
PTSD			

**Table 4 Association between forms of trauma and PTSD**

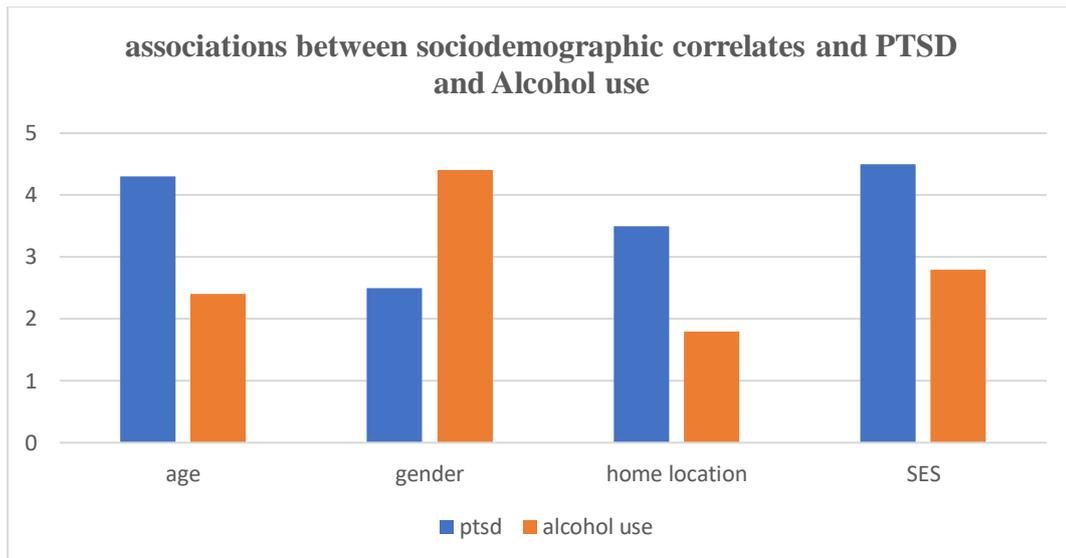
Forms of trauma	PTSD		
	Mild	moderate	Severe

**Table 5 Association between forms of trauma and Alcohol use**

Forms of trauma	Alcohol use		
	Mild	moderate	Severe



**Figure 4 Proportion of male and females' students who developed PTSD and alcohol use**



**Figure 5 Associations between sociodemographic correlates and PTSD and Alcohol use**

### 3.9 Ethical Procedures

As part of adhering to the research ethical principles, the study proposal was submitted to Ethics and Research Committee for approval. A letter obtained from the Ethics committee was given to the college supervisor in charge before the research was undertaken. Informed consent and assent was then obtained from all participants in writing and the objectives of the study were well explained to the school, parents and the students.

### Confidentiality

For confidentiality purposes, students' names were not used in the study. Instead, they were given identification numbers so that no one can link the results to each individual respondent. The data was kept in a computer with passwords so that it will not be accessible to anyone, and it was kept in a locked drawer.

### Risks

Since the study involves interviewing the participants about their traumatic experiences, participation in the study may result in recollection of painful life experiences which may be distressing to the respondents. If the respondents are distressed by their participation in the study, the researcher would refer to the nearest

medical facility for appropriate psychological support. In case there is no facility nearby the researcher would offer brief psychological interventions as arrangement is being made for psychiatric evaluation and management.

The students were verbally assured that the information obtained will be kept confidential especially from the authorities and that all questionnaires will be anonymous.

Any personal information that was obtained in connection with this study that could be identified with any participant will remain confidential; this will be enhanced by keeping the data collected under lock and key. After computing of data, all filled research questionnaires will be destroyed.

Information that was gathered is to be published in my thesis; however, names and other personal details that may reveal one's identity will not be published.

The participants were given liberty to choose if they will or not participate in this study. Participation in this study was purely voluntary and one could withdraw any time without consequence of any kind.

### **3.10 Study Limitation**

The study was done among secondary school students in Turkana County which presented unique demographic characteristics from other counties and hence the findings may not be generalized to explain the situation of patterns of traumatic events, severity of post-traumatic stress disorder and alcohol use among high school students in other counties in Kenya.

Some of the schools in Turkana County are day schools and the study encountered challenges in terms of sample because some of those selected for the study missed school due to problems at home. This, therefore, affected the study sample and researcher had to delay to capture more respondents from those absent to avoid negative impact on the findings.

## **CHAPTER FOUR: RESEARCH RESULTS**

### **4.1 Introduction**

The aim of the study was to explore the patterns of traumatic events, severity of Post-Traumatic Stress Disorder (PTSD) and alcohol use among High School Students in Turkana County and determine the effect of socio-demographic correlates. The study used life Event Scale (LES-UCLA) and ASSIST to investigate the patterns of trauma, severity of Post-Traumatic Stress Disorder (PTSD) and alcohol use among High School Students in Turkana County. Descriptive statistics was used to describe patterns of trauma, severity of alcohol and PTSD symptoms among High school students in Turkana County. Chi square was used to determine the association between patterns of trauma and severity of alcohol use, PTSD, as well as to assess the effect of socio-demographic correlates of PTSD and alcohol use among high school students in Turkana County.

### **4.2 Response Rate**

The researcher distributed 312 questionnaires to the targeted respondents. Out of the 312 questionnaires 305 of them were returned completed, therefore the return rate stood at 97.8%; the unreturned questionnaires were 7 which translated to 2.2 %. The reasons stated for non-response were filling wrongly (spoiled) and some respondents were not willing to continue participating in the study.

### **4.3 Socio demographic characteristics**

In the study, boarding schools were the most represented 72.5 % (n=221). The average age of the respondents was 19 years with majority of students being aged between the age group of 17 and 19 years, followed by 20-22 years. The minimum age was 16 years and the maximum was 24 years. The male gender 60.9% (n=185) being the most represented than the female gender 39.1% (n=120). They also stated that on average the number of siblings they have was five (5). Among these respondents, 82.0% (n=250) of them stated that there was presence of a guardian, whereas 18.0% (n=55) reported that there was no guardian.

**Table 4.1: Socio demographic characteristics**

Socio demographic characteristics		Frequency	Percentage
Type of school	Boarding schools	221	72.5
	Day schools	84	27.5
	<b>Total</b>	<b>305</b>	<b>100</b>
Age	N	296	
	Mean	19.01	
	Std. Deviation	1.338	
	Minimum	16	
	Maximum	24	
Gender		<b>Frequency</b>	<b>Percentage</b>
	Male	185	60.9
	Female	120	39.1
	<b>Total</b>	<b>305</b>	<b>100</b>
Number of Siblings	N	290	
	Mean	5.15	
	Std. Deviation	2.846	
	Minimum	0	
	Maximum	26	
Presence of Guardian		<b>Frequency</b>	<b>Percentage</b>
	Yes	250	82.0
	No	55	18.0
	<b>Total</b>	<b>305</b>	<b>100</b>

#### 4.4 Exploring patterns of traumatic events among secondary school students in Turkana County

The life events scale UCLA was used to examine traumatic life events experienced by high school students in Turkana County to ascertain which traumatic event was mostly faced by the students. Majority of the students stated that they have encountered the various traumatic events, (n= 162). For those who stated that they have encountered these traumatic events; violent death of loved ones (n=136), Being exposed to a war environment (n=135), natural disasters (floods, fire, famine) (n=115), seeing a dead body (n=114) and physical assault (n=101) were the most pronounced. The painful

medical treatments cited included voluntary male circumcision which the community is not practicing. The traumatic event of seeing a dead body was explained as including sudden viewing of mutilated or undisposed dead bodies on the streets or unexpected places. These excluded normal viewing in mortuary and at burial ceremonies which was deemed normal.

**Table 4.2: Trauma experience among high school students in Turkana County**

<b>Trauma Experience</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	196	64.3%
<b>No</b>	109	35.7%
<b>Total</b>	<b>305</b>	<b>100</b>

**Table 4.3: Traumatic events exposure by high school students**

<b>S/NO</b>	<b>Traumatic event</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
1.	Violent death of loved ones	136	46.7
2.	Being exposed to a war environment	135	45.5
3.	Natural disasters (floods, fire, famine)	115	41.4
4.	Seeing a dead body	114	38.6
5.	Physical assault	101	34.1
6.	Painful medical treatment	97	33.3
7.	Post-election violence	87	33.0
8.	Sexual assault	39	13.2
9.	Bad accidents i.e. car accidents	25	8.4

**Table 4.4 Severity of PTSD and alcohol use among high school students in Turkana County**

Life events scale UCLA was used to assess the severity of PTSD symptoms among the respondents. Among the 305 respondents who completed the questionnaire, 162 of them had PTSD symptoms. For the 162 respondents who had PTSD symptoms, 37.7% (n=61) of them had mild symptoms, 55.6% (n=90), had moderate symptoms, and 6.8% (n=11) had severe PTSD symptoms. The cut off points for PTSD symptoms were mild 1-17, moderate 18-40, and severe 41-68.

**Table 4.5: prevalence of PTSD**

<b>PTSD</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	162	53.1%
<b>No</b>	143	46.9%
<b>Total</b>	<b>305</b>	<b>100</b>

**Table 4.6: Severity of PTSD**

<b>Severity</b>	<b>Frequency</b>	<b>Percentage</b>
Mild	61	37.7
Moderate	90	55.6
Severe	11	6.8
<b>Total</b>	<b>162</b>	<b>100</b>

For alcohol use, majority of the respondents 73.7% (n=225) had not taken alcohol at any point in their lives, only 26.3% (n=80) reported to be using alcohol. Table 4.6

**Table 4.7: Prevalence of alcohol use**

<b>Alcohol usage</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	80	26.3
<b>No</b>	225	73.7
<b>Total</b>	<b>305</b>	<b>100.0</b>

For respondents who reported that they are using alcohol, ASSIST was used to assess the severity of alcohol use. The ASSIST scoring are as follows: 0-10 mild, 11-26 moderate, 27 and above severe. From the respondents who used alcohol 31.3% (n=25) are using in mild amount, and 68.8% (n=55) are using in moderate amount. None of them were using alcohol severely. Table 4.7

**Table 4.8: Severity of alcohol use**

<b>Severity</b>	<b>Frequency</b>	<b>Percentage</b>
Mild	25	31.3
Moderate	55	68.8
<b>Total</b>	<b>80</b>	<b>100</b>

**4.6 Associations between patterns of trauma and severity of PTSD and alcohol use among high school students in Turkana County.**

To establish if the association between trauma and PTSD was statistically significant a chi-square test was done. The findings revealed a statistically significant association between post-election violence and PTSD, (p-value=0.011,  $\chi^2=6.922$ ), natural disasters and PTSD (floods, fire, famine (p-value=0.027,  $\chi^2=5.103$ ), being exposed to war environment and PTSD (p-value=0.003,  $\chi^2 = 9.436$ ), physical assault and PTSD (p-value=0.001,  $\chi^2 = 10.917$ ), seeing a dead body and PTSD (p-value = 0.030,  $\chi^2 = 5.309$ , violent death of loved ones (0.005,  $\chi^2 = 8.882$ ) and painful medical treatment and PTSD (p-value = 0.002,  $\chi^2 = 9.605$ ). The odds that post-election violence, Natural disasters (floods, fire, famine), Bad accidents i.e. car accidents, being exposed to a war environment, Physical assault, seeing a dead body, Sexual assault, Violent death of loved ones and Painful medical treatment influencing experiencing PTSD symptoms was 2.996, 2.282, 1.187, 2.914, 4.000, 2.246, 3.189, 2.719 and 3.506 respectively.

**Table 4.9: Association between patterns of trauma and PTSD**

Traumatic event		Students with PTSD symptoms		N	$\chi^2$ (p-value)	Odds ratio (95% confidence interval)
		Frequency [n (%)]				
		Yes	No			
Post-election violence	Yes	58(87.9%)	8(12.1%)	66	6.922 (0.011)	2.996 (1.287 to 6.834)
	No	88(71%)	36(29%)	124		
Natural disasters (floods, fire, famine)	Yes	66(84.6%)	12(15.4%)	78	5.103 (0.027)	2.282 (1.104 to 4.758)
	No	84(70.6%)	35(29.4%)	119		
Bad accidents i.e. car accidents	Yes	15(78.9%)	4(21.1%)	19	0.085 (1.000)	1.187 (0.374 to 3.763)
	No	139(76%)	44(24%)	183		
Being exposed to a war environment	Yes	84(85.7%)	14(14.3%)	98	9.436 (0.003)	2.914 (1.449 to 5.860)
	No	70(67.3%)	34(32.7%)	104		
Physical assault	Yes	66 (85.7%)	10 (13.0%)	77	10.917 (0.001)	4.000 (1.684 to 9.501)
	No	87 (69.6%)	38 (30.4%)	125		
Seeing a dead body	Yes	74(84.1%)	14(15.9%)	88	5.309 (0.030)	2.246 (1.118 to 4.515)
	No	80(70.2%)	34(29.8%)	114		
Sexual assault	Yes	27(90%)	3(10%)	30	3.684 (0.064)	3.189 (0.923 to 11.023)
	No	127(73.8%)	45(26.2%)	172		
Violent death of loved ones	Yes	85(85%)	15(15%)	100	8.882 (0.005)	2.791 (1.401 to 5.560)
	No	67(67%)	33(33%)	100		
Painful medical treatment	Yes	64(88.9%)	8(11.1%)	72	9.605 (0.002)	3.506 (1.535 to 8.005)
	No	89(69.5%)	39(30.5%)	128		

To establish if the association between trauma and alcohol use was statistically significant a chi-square test was done. The findings revealed a statistically significant association between being exposed to war environment and alcohol use (p-value=0.035,  $\chi^2 = 8.93$ ), physical assault and alcohol use (p-value=0.040,  $\chi^2 = 5.741$ ), seeing a dead body and alcohol use (p-value = 0.045,  $\chi^2 = 3.407$ ), sexual assault and alcohol use (0.005,  $\chi^2 = 7.921$ ) and painful medical treatment and alcohol use (p-value = 0.036,  $\chi^2 = 12.826$ )

The odds that post-election violence, Natural disasters (floods, fire, famine), Bad accidents i.e. car accidents, being exposed to a war environment, Physical assault,

seeing a dead body, Sexual assault, Violent death of loved ones and Painful medical treatment influencing experiencing PTSD symptoms was 1.275, 1.161, 0.828, 1.061, 1.728, 1.665, 2.671, 1.395 and 1.610 respectively. Table 4.12

**Table 4.10: Association between patterns of trauma and alcohol use**

Traumatic event		Alcohol use		N	$\chi^2$ (p-value)	Odds ratio (95% confidence interval)
		Frequency [n (%)]				
		Yes	No			
Post-election violence	Yes	24(28.2%)	61(71.8%)	85	0.748 (0.445)	1.275 (0.709 to 2.292)
	No	41(23.3%)	135(76.7%)	176		
Natural disasters (floods, fire, famine)	Yes	26(22.8%)	88(77.2%)	114	0.386 (0.572)	1.161 (0.465 to 2.899)
	No	42(26.1%)	119(73.9%)	161		
Bad accidents i.e. car accidents	Yes	7(28%)	18(72%)	25	0.096 (0.811)	0.828 (0.472 to 1.450)
	No	68(25.2%)	202(74.8%)	270		
Being exposed to a war environment	Yes	35(26.1%)	99(73.9%)	134	8.93 (0.035)	1.061 (0.627 to 1.795)
	No	40(25.2%)	119(74.8%)	159		
Physical assault	Yes	28(28.1%)	72(71.9%)	100	5.741 (0.040)	1.728 (0.996 to 2.996)
	No	45(23.35%)	147(76.65%)	192		
Seeing a dead body	Yes	35(31%)	78(69%)	113	3.407 (0.045)	1.665 (0.974 to 2.846)
	No	38(21.3%)	140(78.7%)	178		
Sexual assault	Yes	17(43.6%)	22(56.4%)	39	7.921 (0.005)	2.671 (1.329 to 5.368)
	No	57(22.5%)	196(77.5%)	253		
Violent death of loved ones	Yes	39(28.9%)	96(71.1%)	135	1.603 (0.223)	1.395 (0.819 to 2.377)
	No	34(22.4%)	118(77.6%)	152		
Painful medical treatment	Yes	30(31.6%)	65(68.4%)	95	12.826 (0.036)	1.610 (0.929 to 2.790)
	No	43(22.4%)	149(77.6%)	192		

**Table 4.11: Association between PTSD and alcohol use among high school students in Turkana County**

Chi-square was also used to assess the association between experiencing PTSD symptoms and alcohol use. the findings revealed a statistically significant association ( $p = 0.002$ ,  $\chi^2 = 11.553$ ). Odds ratio which is a measure of exposure and an outcome showed that students with PTSD symptoms are 0.986 more likely to use alcohol.

**Table 4.12: association between PTSD and alcohol  
4.8: Effects of socio-demographic correlates on the severity of PTSD and alcohol**

Experiencing PTSD symptoms	Alcohol use		N	$\chi^2$ (P-value)	Odds ratio (95% confidence interval)
	Yes	No			
Yes	41	112	153	11.553 (0.002)	0.986
No	13	35	48		
N	54	147	201		

**use among high school students in Turkana County**

Chi-square was used to assess the association between the socio demographic correlates and PTSD. The findings revealed a statistically significant association between gender and PTSD (p-value = 0.024,  $\chi^2$  = 10.745), presence of a guardian and PTSD (p-value = 0.046,  $\chi^2$  = 10.023) and type of school and PTSD (p-value = 0.001,  $\chi^2$  = 12.770). The odds that the Gender of the participants, age, education level, presence of a guardian and type of school influencing alcohol use was 1.269, 0.771, 0.934, 1.053 and 1.610.

**Table 4.13: Association between Socio-Demographic correlates and severity of PTSD**

Socio-Demographic correlates		Students with PTSD symptoms		$\chi^2$ (p-value)	Odds ratio (95% confidence interval)	Adjusted odds ratio (95% confidence interval)
		Frequency [n (%)]				
		Yes	No			
Gender	Male	98(74.2)	34(25.8)	10.745 (0.024)	1.269 (0.732 to 2.201)	1.05 (0.79 to 2.04)
	Female	55(79.7)	14(20.3)			
Age	14 to 16	2(100)	0(0)	1.410 (0.703)	0.771 (0.679 to 0.876)	0.53 (0.48 to 2.23)
	17 to 19	98(76.6)	30(23.4)			
	20 to 22	47(72.3)	18(27.7)			
	23 and above	1(100)	0(0)			
Education Level	Form One	57(85.1)	10(14.9)	1.542 (0.457)	0.934 (0.393 to 2.224)	0.67 (0.33 to 1.60)
	Form Two	34(50.7)	12(17.9)			
	Form Three	31(46.3)	11(16.4)			
	Form Four	40(59.7)	6(9)			
Presence of Guardian	Yes	123(75.9)	39(24.1)	10.023 (0.046)	1.053 (0.540 to 2.053)	1.333 (1.19 to 2.52)
	No	27(77.1)	8(22.9)			
Type of school	Boarding	49 (21.3%)	181 (78.7%)	12.770(0.001)	1.610 (0.722 to 3.590)	2.12 (1.22 to 3.68)
	Day	31 (42.5%)	42 (57.5%)			

Majority of the students experiencing PTSD symptoms were from Boarding schools and the association was statistically significant (p-value=0.0169,  $\chi^2$ -value=11.373).

**Table 4.14: Type of school and experiencing PTSD symptoms**

Type of school	Experiencing PTSD symptoms		N	$\chi^2$ (P-value)
	Yes	No		
Boarding	130 (77.8%)	37 (22.2%)	221	
Day	24 (68.6%)	11 (31.4%)	84	11.373 (0.0169)
<b>Total</b>	<b>154 (76.2%)</b>	<b>48 (23.8%)</b>	<b>305</b>	

Chi-square was also used to assess the association between the socio demographic correlates and alcohol use. The findings revealed a statistically significant association between gender and alcohol use ( $p \leq 0.001$ )  $\chi^2 = 14.333$ ), type of school and alcohol use ( $p = 0.043$ ,  $\chi^2 = 7.201$ ) and presence of a guardian and alcohol use ( $p = 0.034$ ,  $\chi^2 = 8.340$ ). The odds that the Gender of the participants, age, education level, presence of a guardian and type of school influencing alcohol use was 3.074, 0.734, 0.815, 1.058 and 1.368 respectively.

**Table 4.15: Association between Socio-Demographic correlates and alcohol use**

Socio-Demographic characteristics		Substance use- alcohol use		$\chi^2$ (p-value)	Odds ratio (95% confidence interval)	Adjusted odds ratio (95% confidence interval)
		Frequency [n (%)]				
		Yes	No			
Gender	Male	62(33.9)	121(66.1)	14.333 ( $\leq 0.001$ )	3.074 (1.691 to 5.589)	2.40 (1.38 to 4.17)
	Female	17(14.3)	102(85.7)			
Age	14 to 16	1(33.3)	2(66.7)	0.982 (0.806)	0.734 (0.363 to 1.484)	0.93 (0.78 to 1.11)
	17 to 19	54(28.9)	133(71.1)			
	20 to 22	24(23.8)	77(76.2)			
	23 and above	1(33.3)	2(66.7)			
Education Level	Form One	20(23.5)	65(76.5)	1.234 (0.512)	0.815 (0.410 to 1.620)	0.78 (0.72 to 1.00)
	Form Two	18(21.7)	65(78.3)			
	Form Three	12(17.1)	58(82.9)			
Presence of Guardian	Form Four	30(46.2)	35(53.8)	8.340 (0.034)	1.058 (0.866 to 1.292)	0.72 (0.27 to 1.93)
	Yes	64(25.7)	185(74.3)			
Type of school	No	14(29.8)	33(70.2)	7.201 (0.023)	1.368 (1.111 to 1.684)	0.86 (0.67 to 1.85)
	Boarding	49(21.3%)	181(78.7%)			
	Day	31(42.5%)	42(57.5%)			

The association between type of school and alcohol use was statistically significant, with a significant representation of those who consume alcohol coming from Day schools 42.5% (n=31). The odds that the type of school students attend influencing alcohol usage was 1.684.

**Table 4.16: Type of school and alcohol use**

Type of school	Alcohol use		N	$\chi^2$ (P-value)	Odds ratio (95% confidence interval)
	Yes	No			
Boarding	49 (21.3%)	181 (78.7%)	230	12.770 (0.001)	1.368 (1.111 to 1.684)
Day	31 (42.5%)	42 (57.5%)	73		
<b>Total</b>	<b>80 (26.9%)</b>	<b>223 (73.1%)</b>	<b>303</b>		

Chi-square was also used to assess the association between experiencing PTSD symptoms and alcohol use. the findings revealed a statistically significant association ( $p = 0.002$ ,  $\chi^2 = 11.553$ ). Odds ratio which is a measure of exposure and an outcome showed that students who take alcohol are 0.986 more likely to be experience PTSD symptoms.

**Table 4.17 PTSD and Alcohol use**

Experiencing PTSD symptoms	Alcohol use		N
	Yes	No	
Yes	41	112	153
No	13	35	48
N	54	147	201
$\chi^2$ (p-value)	<b>11.553 (0.002)</b>		
Odds ratio	<b>0.986</b>		

Chi-square was also used to assess the association between ages of students and experiencing post-election violence. The findings revealed a statistically significant association ( $p = 0.035$ ,  $\chi^2 = 12.010$ ). Odds ratio which is a measure of exposure and an outcome showed that students ages was 0.66 times more likely to influence the experience of post-election violence. More older students (72.3% ) reported to have been affected by the post-election violence. Among the students who answered the question on post-election violence, 51.5 % were aged 17 to 19 years, 72.3% aged 20 to 22 years, 100% of those aged 23 and above years.

**Table 4.18 Age of students experiencing Post election violence**

Covariant	Post-election violence			N	$\chi^2$ (p-value)	Odds ratio (95% confidence interval)
	Frequency [n (%)]					
	Yes	No				
	17 to 19	17(51.5)	16(48.5)	33		
Age of students	20 to 22	29(72.3)	22(43.1)	51	12.010 (0.035 to 0.037)	0.66 (0.35 to 1.98)
	23 and above	2(100)	1(33.3)	3		

## **CHAPTER FIVE: DISCUSSION CONCLUSION AND RECOMMENDATION**

### **5.1 DISCUSSION**

The aim of this chapter is to provide discussions for findings as derived from the presentation, analysis and interpretation of the data linked to the objectives of the study. From the study it was established that a larger number of the students were aged 19 years as the mean, they were male (60.9%), had 5 siblings on average, they attended day and boarding schools and acknowledged the presence of a guardian.

The first objective was to explore patterns of traumatic events among high school students in Turkana County. Majority of the respondents (72.8%, n=222) reported that they have experienced at least one traumatic event in their lives. For those who stated that they have encountered these traumatic events; violent death of loved ones (n=136), Being exposed to a war environment (n=135), natural disasters (floods, fire, famine) (n=115), seeing a dead body (n=114) and physical assault (n=101) were the most pronounced.

The post-election violence was reported as one of the traumatic events experienced by the high school students. Those who answered the question on affirmative were mainly older students aged between 17 years and 23 years. They explained to the researcher that their families were displaced from various places such as Nakuru, Eldoret, Kisumu and Transzoia. While in Turkana County they were allocated land in a village which the locals called "Ichakun" meaning those who have landed from nowhere. These derogatory terms led to the young children realizing that something had happened. As they grew up some have engaged in alcohol intake to self-medicate as a coping mechanism. More have shown symptoms of PTSD as depicted by the significant association (p=0.011)

Violent death of a loved one caused by raids from neighboring counties was cited as causing a lot of psychological trauma and emotional disturbances. The environment of war due to internal wrangles and the infiltration from the international boarders has led to uncertainties among the residents as they have to survive the constant wars. Turkana county having constant droughts has led to scarcity of pasture for their animals necessitating constant migrations from one location to another. This

has caused school disruption as the need to survive takes over. The school disruptions lead to delayed completion hence the high average secondary school age of 19 years.

The painful medical treatments cited included voluntary male circumcision that the community from which the sample is drawn is not practicing. Apart from other regular medical treatments such as general surgeries, invasive procedures could be tolerated than male circumcisions. Self-medication hypothesis explains the resultant association between this traumatic event to alcohol use and PTSD symptoms development. Traumatic event of seeing a dead body was explained as seeing a dead body on the streets or in unexpected place like the house excluding normal viewing in mortuary and at burial ceremonies which was deemed normal and included elaborate rituals that helped the bereaved overcome the grief and loss.

Different studies have identified various patterns of trauma among adolescents. A study done in Kenya by Harder and colleagues in 2012 to examine the effects of post-election violence among 552 youths revealed that 47 % of young adults experienced more than five major traumatic events and these included; having seen a dead body, watched or seen somebody being tortured or shot, being in a spot where a war was going on, general injury during post-election savagery, being in a shoot-out or flood, and sexual abuse. The findings of that study are consistent with the findings of the present study as similar forms or patterns of traumatic event have also been identified.

Another study conducted by (Maina, Munene, & Tuikong, 2019) revealed that violent death of loved ones and being exposed to a war environment were the most prevalent traumatic events experienced by this population group. These findings are similar to the ones of the present study as similar patterns of trauma were also identified.

Nyagwencha, Munene, James, Mewes and Barke (2018) conducted a national survey in Kenya on Violence against Children in 2010. From the survey, levels of violence (sexual, emotional or physical) against children and adolescents prior to 18 years of age were found to be 26% among females and 32% among males. The same findings were corresponding to another study conducted in rural Kenya among 13–20-year-old students that established that 94.8% of the students had been exposed to

potentially traumatic events like rape (9.8%), physical assault (22.5%), sexual abuse (19.8%), physical abuse (27.8%), bullying (32.2%) and childhood neglect (25.3%) . The current study has identified violent death of a loved one (46.7%), exposure to war environment (45.5%), natural disasters and physical assaults (34.1%) as the prevalent forms of traumatic events.

It is evident that many children experience PTSD in Kenya in both urban and rural settings, Turkana County included. Despite the different settings, the secondary school students have reported similar patterns of trauma. Therefore, it's prudent to bear in mind the key patterns of trauma experienced by the high school students in Turkana County as being exposed to war environment, violent death of a loved one and natural disasters such as famine and floods. Turkana County high school students also experience traumatic events in the same magnitude as other students in the country and outside the country. It is clear that secondary schools' students in this region have experienced some adverse childhood trauma at one point in their lives, therefore it is an important finding that would help local government authorities in planning education and health coverage for students and young adolescents.

The second objective was to assess the severity of PTSD and alcohol use among high school students in Turkana County. In terms of PTSD the present study revealed that exposure to traumatic events increased chances of developing PTSD symptoms at moderate levels

A study conducted by Ndeti et al (2007) among 1110 secondary school students in Nairobi, Kenya revealed that half of the students who took part in the study (50.5 %, n=561) had PTSD while the current study shows 53.1 %, (n=162) of the students had PTSD in varying degrees of severity. The present study further revealed that approximately half of the students (55.6%) had moderate PTSD symptoms and about one tenth (6.8 %, n=11) had severe PTSD symptoms whereas the study conducted by Ndeti revealed that 4-5 % had partial or moderate PTSD symptoms. These findings are consistent because they focused on the same population group which is secondary school students. The slight increase in the severity of PTSD symptom in this study can be explained by the fact that students in the study conducted by Ndeti and colleagues

were from urban set-up (Kenyan capital city- Nairobi) while the present study was carried in rural set-up on the furthest northern part of Kenya bordering Uganda, South Sudan and Ethiopia. This set-up has harsh environmental factors such as drought, floods and problems are compounded by the porous international boarder points. The cattle rustling vice might have contributed to the increased PTSD levels.

Another recent study conducted by Peter M. et al (2019) in Nyeri county, Kenya among 160 adolescents in children homes revealed that 152 (95 %) had PTSD symptoms. For these children with PTSD symptoms, majority had moderate PTSD symptoms (58.7%) followed with those with mild symptoms (23%). The prevalence of PTSD is relatively higher (32.1%) in this study compared to the current study (26.7%). This is mainly because the study by Peter and colleagues specifically focused on adolescents from children's homes (rescue homes) who had adverse childhood experiences whereas the present study focused on normal children in schools.

On overall the findings highlight that the severity of PTSD symptoms displayed by many of participants was in the moderate category. The findings indicate substantial mental health problems in young people that can be traced to the various types of traumas therefore these students need to be educated on clinical symptoms of PTSD and be encouraged to seek medical care when they encounter such symptoms.

Wechsler-Zimring and Kearney's (2011) study of adolescents who experienced different types of maltreatment found that almost 90% of their sample fit criteria for PTSD. The adolescents who had experienced physical abuse had higher mean scores for each of the symptoms observed by the Children's PTSD Inventory (CPTSD-I). The current study shows that there is an association between the severity of PTSD and occurrence of trauma.

Most of the traumatic events reported were linked to PTSD except bad accidents and sexual assault. This presents a different finding from the other researches. The researcher while seeking an explanation of this rare phenomenon realized that the community practices have suppressed reports of sexual abuse and have normalized them by way of family settlement of the cases through animals like cows and goats despite government agencies carrying out sensitization programs.

In terms of alcohol use, the findings revealed that majority of students (73.7%) are not using alcohol, and for those using alcohol (26.3%), they only used in mild and moderate amounts. No student scored severe for alcohol use.

Reda, Moges, and Wondmagegn, (2012) conducted a study on Alcohol drinking patterns among high school students in Ethiopia. Their findings showed that the prevalence of alcohol among these sampled high school students was 22.2 %. The study further revealed that about 10% of the students who reported that they have drunk in the past 30 days have experienced at least one traumatic event in their life. The current study agrees with these findings as 68.8 % of the high school students reported to be using alcohol at moderate severity levels.

A study conducted by Atwoli et al (2015) on the relationship between people who witness traumatic event and the outcomes such as mood, anxiety and substance use revealed that, individuals who witnessed trauma had elevated likelihoods of mood as well as anxiety disorders but not substance use disorders. These findings are consistent with the findings of the present study as most students have not used alcohol despite experiencing different forms of trauma. However, the prevalence of alcohol use among this population group is still high (26.3%) compared to the general population.

Other studies have indicated that children with childhood trauma are more likely to be negatively affected in later stages of their lives, including being dependent on alcohol. A study conducted by Muller et al, (2013) examined the occurrence of many types of childhood trauma among patients seeking treatment from alcohol dependency. They found out that traumatized patients, childhood sexual abuse was shown to be associated with increased stress in later life. Other findings revealed that those with childhood trauma were more alcohol dependent in the future compared to those with no history of childhood trauma. These findings suggest that although these children may not be using alcohol at the moment, their experience of childhood trauma may have a negative influence in their lives including alcohol dependence. Therefore, there is need to closely monitor and assess periodically students who have experienced childhood trauma.

The third objective was to identify any association between patterns of trauma and severity of PTSD and alcohol use among high school students in Turkana County. Chi-square test was done to establish if the association was significant.

In terms of PTSD, the findings revealed a statistically significant association between post-election violence and PTSD, ( $p=0.011$ ), natural disasters and PTSD (floods, fire, famine ( $p=0.027$ ), being exposed to war environment and PTSD ( $p=0.003$ ), physical assault and PTSD ( $p=0.001$ ), seeing a dead body and PTSD ( $p = 0.030$ ), violent death of loved ones ( $p=0.005$ ) and painful medical treatment and PTSD ( $p = 0.002$ ). The only traumatic event that showed no statistically significant association to PTSD was bad accidents ( $p=1.00$ ) and sexual assault ( $p=0.064$ ). This phenomenon can be explained as due to the fact that Turkana County is still a rural setting where the number of vehicles is still low and as a result road traffic accidents are fewer. The lack of association between sexual assault and PTSD might be attributed to lack of awareness due to cultural suppression and fear of being victimized.

A study by Salazar et al (2013) conducted on Trauma introduction and PTSD established that among youths in child care homes in Nyeri, majority had encountered at least one traumatic event in the course of their life. The kinds of traumatic events that mostly elevated the likelihood of a lifetime PTSD were sexual assault and physical attacks. The current study shows that physical assault and being in a war environment were significantly associated with development of PTSD symptoms.

David J. Grelotti, et al (2018) in a study on the Prevalence of stressful life events and their association with post-traumatic stress disorder among youth attending secondary schools in Haiti established that Sexual assault, but not famine, showed a significant association with PTSD. Interpersonal violence had a greater impact on PTSD than natural disaster in this study.

The current study depicts sexual assault ( $p=0.064$ ) as having a lower impact to the causes of PTSD. During the interaction with teachers and students when collecting data, it was found that some students, especially females had their own families (married). In Turkana County, it is common for young girls to be married at such an early age especially after sexual assault as the community is patriarchal, and believes in settling such vices through heavy livestock compensation despite the psychological

trauma the victims undergo. As a result of these malpractices, such students develop feelings of hopelessness and helplessness in reporting such trauma for fear of being victimized.

In terms of alcohol, a chi-square test was done to establish if the association between trauma and alcohol use was statistically significant. The findings revealed a statistically significant association between being exposed to war environment and alcohol use (p-value=0.035), physical assault and alcohol use (p-value=0.040), seeing a dead body and alcohol use (p-value = 0.045), sexual assault and alcohol use (0.005,) and painful medical treatment and alcohol use (p-value = 0.036). Violent death of a loved one (p=0.223), post-election violence (p=0.445), natural disasters (p=0.572), and bad accidents (p=0.811) had no association with increased severity of alcohol use.

Ertl, Saile, Neuner, and Catani, (2016) did a cross sectional study on trauma, alcohol abuse and psychopathology in a post conflict setting of soldiers who embarked from Iraq. The findings show that most participants are drinking to ease the burden of facing post-traumatic stress disorders. The gradual attenuation of the dose-effect points at more alcohol-related problems reported which is consistent with the self-medication hypothesis that has been advocated by this study.

A study by Abbey et al (2004) on sexual assault and alcohol consumption reported that approximately half (50%) of all sexual assaults were either associated to the perpetrator's alcohol consumption, the victim's alcohol consumption or both. The current study could not establish the perpetrators use of alcohol but rather showed that there was an association between sexual assault to the victim and alcohol consumption.

Fetzner, et al. (2011) did a study titled "What is the association between traumatic life events and alcohol". The findings revealed that substance abuse can be seen as a way to escape the emotional burden associated with extreme poverty and unemployment, at the same time being an attempt to cope with trauma-related symptoms, and thus, is a form of self-medication. The current study shows an association between some patterns of trauma such as physical assault and severity of alcohol use. Of the 26.3% who reported to be consuming alcohol, about two thirds of them were drinking in moderate amount (68.8%). Turkana county has high poverty

levels and these could be leading to more increased intake of alcohol as a way of self-medication.(Seedat, Nyamai, Njenga, Vythilingum, & Stein, 2004)

The association between having PTSD and developing alcohol use problems was explored. Chi-square was used to assess the association between experiencing PTSD symptoms and alcohol use. The findings revealed a statistically significant association ( $p = 0.002$ ,  $\chi^2 = 11.553$ ). Odds ratio which is a measure of exposure and an outcome showed that students with PTSD symptoms are 0.986 more likely to use alcohol. These findings are in agreement with what other studies have reported. In a study done by Ndegwa et al (2017) among daystar university students found that depression, anxiety, PTSD, and academic performance were found to have an association with respondents' drug use.

The fourth objective was to assess the effect of socio-demographic correlates on the severity of PTSD and alcohol use among high school students in Turkana County. The sociodemographic correlates evaluated included gender, age, educational level, presence of a guardian and the type of school. Gender (PTSD:  $p=0.024$ , Alcohol use: 0.001), presence of a guardian (PTSD:  $p=0.046$ , Alcohol use: 0.034) and type of school (PTSD:  $p=0.001$ , Alcohol use: 0.001) have a statistically significance to both severity of PTSD and alcohol use respectively, among high school students in Turkana County.

In terms of gender more females (79.7%) than males (74.2%) presented with PTSD symptoms while more males (33.9%) than females (14.3%) had alcohol use problems. These findings differ from the results from Ndeti et al (2007) study published in the journal of child and adolescent mental health, which found that there were no significant differences between males and females regarding PTSD severity. More females are likely to show symptoms of PTSD unlike men who may avoid describing how they feel but would prefer to take alcohol as a way of coping with the psychological disturbances arising from traumatic events or otherwise.

The findings of this study showed that presence of a guardian influences the severity of PTSD symptoms and also alcohol use. This concurs with other studies by

Elklit et al (2016) who investigated the link between different types of traumas, attachment, and PTSD. They found that a secure attachment style was linked to a lower PTSD severity. This is also in agreement with Waki (2008), who reported many cases of forced circumcision and other forms of violence that led to diverse psychological disturbance including increased alcohol use among the youth.

A study by Atwoli L. et al (2014) noted that bullying was the commonest traumatic event in all domestic care environments, followed by physical and sexual abuse. These traumatic events were commonest among the street youth followed by charitable children's institutions (CCIs). Prevalence of PTSD was highest among street youth (28.8%), then households (15.0%) and CCIs (11.5%). Post-traumatic stress symptoms (PTSS) scores were also highest among street youth, followed by CCIs and households and was associated with higher PTSS scores and PTSD. These findings clearly show agreement with the present study which shows the need of a parent or a responsible guardian to have reduced levels of PTSD and alcohol use.

In terms of the type of school; the association between type of school and PTSD was significant ( $p$ -value = 0.001,  $\chi^2 = 12.770$ ) as well as to alcohol use ( $p = 0.043$ ,  $\chi^2 = 7.201$ ). In this study more boarding school students showed high levels of PTSD and alcohol use. The explanations for this could be previous encounters with traumatic experiences and also the school environments that are prone to attacks from the cattle rustlers.

According to Ndetei (2007) the boarders had significantly higher levels of PTSD but at a low level of significance, contrary to expectation. He explains that Day scholars are more likely to be re-exposed to accidents and violent crimes unlike boarding students because they commute each day between school and home and are exposed to crime, especially those in slums.

An assessment of the association between ages of students and experiencing post-election violence revealed a statistically significant association ( $p = 0.035$ ). Odds ratio which is a measure of exposure and an outcome showed that students ages was 0.66 times more likely to influence the experience of post-election violence. Among the students who answered the question on post-election violence, 51.5 % were aged 17 to 19 years, 72.3% aged 20 to 22 years, 100% of those aged 23 and above years. This shows that more older students (72.3%) reported to have been affected by the

post-election violence. Further interaction with the students revealed that they live in designated villages that were allocated by the Turkana County government after they were displaced from other major towns of Kenya like Nakuru, Eldoret, Transzoia and Kisumu. The students grew up being segregated and hence had developed maladaptive coping mechanisms of taking alcohol and avoidance further traumatization.

## **5.2 CONCLUSION**

Conclusively, this study provides further evidence that exposure to traumatic events is a fact of life since high school students do face a variety of traumatic events that increase the chances of developing post-traumatic stress disorder and increased alcohol use. The studies that do explore severity generally only look at severity of symptoms as mediated by other factors or explore severity in adult survivors of trauma. Only a limited amount of research is available that focuses on the severity of PTSD symptoms and alcohol use resulting from different patterns of traumatic events. From cited past studies, limited research has been conducted among high school students in the Kenyan northern counties who might be experiencing various traumatic events and have severe PTSD symptoms and alcohol use.

The association between exposure to trauma and severity of PTSD and alcohol use was statistically significant. The relationship between patterns of traumatic events that lead to PTSD and alcohol use in children and adolescents is important in creating developmentally appropriate treatment of these specific disorders. Understanding what kinds of trauma are frequently linked with PTSD and the severity of symptoms will help to ensure that children and adolescents receive the best possible treatment. This would be a priority when dealing with such mental disorders in the future.

It is also important to understand the importance of socio-demographic factors which influences development of PTSD and alcohol use among high school girls in Turkana County. Presence of a guardian has been shown to have a significant influence in both alcohol use and PTSD therefore it is important for caregivers to be educated on the impact of being absent in these children's lives, and be encouraged to be part of their children's development. Male students also have higher prevalence of substance

use which may be attributed to their maladaptive coping mechanism to the daily trauma that they experience.

### **5.3 Recommendations**

- Students and other members of Turkana community should be educated on the symptoms of PTSD and alcohol use disorder. This would enable them identify the problem at early stages and seek help through well-organized awareness programs
- There is need for students to be offered counselling when they are affected by traumatic events.
- Sexual assault and gender-based violence sensitization needs to be given priority by the local government and school administration to allow freedom of students reporting whenever there is an incidence
- A Gender-Based Violence (GBV) centre need to be set up to cater for girls who may have fear reporting the sexual assaults they have experienced.
- More studies especially the longitudinal ones, are needed to find out the environmental factors such as cultural malpractices that could be contributing to the traumatic events experienced by the young people in Turkana County.

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## **APPENDICES**

### **APPENDIX A: PARENTAL CONSENT FORM**

Title of Study: **Patterns of traumatic events, severity of post-traumatic stress disorder and alcohol use among high school students in Turkana County, Kenya**

Principal Investigator and institutional affiliation: **Simon Esinyen Ngipuo, University of Nairobi**

#### **Introduction:**

I would like to tell you about a study being conducted by the above listed researchers. The purpose of this consent form is to give you the information you will need to help you decide whether or not your child should participate in the study. Feel free to ask any questions about the purpose of the research, what happens if your child participates in the study, the possible risks and benefits, the rights of your child as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide if you want your child to be in the study or not. This process is called 'informed consent'. Once you understand and agree for your child to be in the study, I will request you to sign your name on this form. You should understand the general principles which apply to all participants in a medical research: i) Your child decision to participate is entirely voluntary ii) You child may withdraw from the study at any time without necessarily giving a reason for his/her withdrawal iii) Refusal to participate in the research will not affect the services your child is entitled to in this health facility or other facilities.

#### **May I continue? YES / NO**

For children below 18 years of age we give information about the study to parents or guardians and teachers. We will go over this information with you and you need to give permission in order for your child to participate in this study. We will give you a copy of this form for your records.

If the child is at an age that he/she can appreciate what is being done the he/she will also be required to agree to participate in the study after being fully informed).

## WHAT IS THE PURPOSE OF THE STUDY?

The researcher will be interviewing individuals who have experienced trauma. The purpose of the interview is to find out severity of Post-traumatic stress disorder and alcohol use among high school students in Turkana. Participants in this research study will be asked questions about their experience of trauma. There will be approximately 312 participants in this study randomly chosen. We are asking for your consent to consider your child to participate in this study.

## **What Will Happen If You Decide You Want Your Child To Be In This Research Study?**

If you agree for your child to participate in this study, the following things will happen: the child would be interviewed by a trained interviewer in a private area where he/she feels comfortable answering questions. The interview will last approximately 20 minutes. The interview will cover topics such as trauma experiences in Turkana, severity of post-traumatic stress disorder and alcohol use.

We will ask for a telephone number where we can contact you if necessary. If you agree to provide your contact information, it will be used only by people working for this study and will never be shared with others.

## **Are There Any Risks, Harms, Discomforts Associated With This Study**

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

Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. You have the right to refuse the interview or any questions asked during the interview. It may be embarrassing for you to have experienced a traumatic event in the past. We will do everything we can to ensure that this is done in private. Furthermore, the researcher is

a professional with special training in these interviews. Also, sharing your experiences about the traumatic experiences may be stressful.

Your child may feel some discomfort when being asked about their experiences of trauma in Turkana County. In case of psychological stress or complications related to this study, contact the researcher right away at the number provided at the end of this document. The researcher will treat your child for minor conditions or refer the child to the nearest medical facility for treatment for conditions that require more extensive care.

### **Are There Any Benefits Being In This Study?**

Your child may benefit by receiving free information about trauma and how it impacts their psychological wellbeing. He/she may be counselled on minor psychological disturbances resulting from their experience of trauma. We will refer your child to a hospital for care and support if necessary. Also, the information you provide will help us better understand severity of PTSD and alcohol use among high school students in Turkana.

### **What If You Have Questions in Future?**

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

For more information about your child's rights as a research participant you may contact the Secretary/Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email [uonknh\\_erc@uonbi.ac.ke](mailto:uonknh_erc@uonbi.ac.ke).

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

### **What Are Your Other Choices?**

Your decision to have your child participate in this research is voluntary. You are free to decline or withdraw participation of your child in the study at any time without injustice or loss of benefits. Just inform the researcher and the participation of your child in the study will be stopped. You do not have to give reasons for withdrawing

your child if you do not wish to do so. Withdrawal of your child from the study will not affect the services your child is otherwise entitled to in this health facility or other health facilities.

For more information contact the researcher at mobile number: **0722885733 from 8 am to 5pm**

**Consent Form (Statement of Consent)**

The person being considered for this study is unable to consent for him/herself because he or she is a minor (a person less than 18 years of age). You are being asked to give your permission to include your child in this study.

**Parent/guardian/teacher statement**

I have read this consent form or had the information read to me. I have had the chance to discuss this research study with the study researcher. I have had my questions answered by him in a language that I understand. The risks and benefits have been explained to me. I understand that I will be given a copy of this consent form after signing it. I understand that my participation and that of my child in this study is voluntary and that I may choose to withdraw it any time.

I understand that all efforts will be made to keep information regarding me and my child's personal identity confidential.

By signing this consent form, I have not given up my child's legal rights as a participant in this research study.

I voluntarily agree to my child's participation in this research study: Yes No

I agree to provide contact information for follow-up: Yes No

Parent/Guardian/teacher signature /Thumb stamp: \_\_\_\_\_

Date \_\_\_\_\_

Researcher's statement I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has knowingly given his/her consent.

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_ Signature: \_\_\_\_\_

Role in the study: \_\_\_\_\_ [i.e. Researcher who explained informed consent form.]

## **APPENDIX B: PARTICIPANT INFORMATION AND ASSENT FORM**

### **Child Assent Form**

Project Title: Patterns of traumatic events, Severity of Post-Traumatic Stress Disorder (PTSD) and alcohol use among high school students in Turkana County, Kenya.

Investigator(s): **Simon Esinyen Ngipuo**

We are doing a research study about traumatic experiences, stress and alcohol use

Permission has been granted to undertake this study by the Kenyatta National Hospital-University of Nairobi Ethics and Research Committee (KNH-UoN ERC Protocol No.

**P192/03/2020**

This research study is a way to learn more about people. At least 312 students will be participating in this research study with you.

If you decide that you want to be part of this study, you will be asked to share with the researcher about your traumatic experiences and alcohol use in the past.

There are some things about this study you should know. The study may take slightly longer than expected and you might feel uncomfortable sharing the traumatic experiences.

Not everyone who takes part in this study will benefit. A benefit means that something good happens to you. We think these benefits might be an awareness of yourself, sharing of traumatic experiences may relieve you and more knowledge on PTSD and alcohol.

When we are finished with this study, we will write a report about what was learned. This report will not include your name or that you were in the study.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parents know about the study too. If you decide you want to be in this study, please sign your name.

I, \_\_\_\_\_, want to be in this research study.

\_\_\_\_\_ (Signature/Thumb stamp) \_\_\_\_\_ (Date)

## APPENDIX C: TIMELINES AND BUDGET

### Timetable

S/NO	ITEM	TIME
1	Research proposal	Sept 2019- Feb 2020
2	Research proposal at KNH/UON ERC	March 2020
3	Data collection	October 2021
4	Data cleaning, coding and analysis	Jan-February 2021
5	Final draft	March 2021

### Budget

No	Activity	Qty	Duration/Days	Cost	Total Amount
	<b>A. Salaries and Wages</b>				
1	Computer programmer	1	5	2,000.00	10,000.00
2	Data managers or analysts	2	3	2,500.00	15,000.00
3	Editorial assistant	1	4	2,000.00	8,000.00
4	Technicians	2	3	2,000.00	12,000.00
	<b>B. Materials and Supplies</b>				
5	Office supplies specifically for project (assorted)			14,000.00	14,000.00
6	Communications (airtime, emails)			18,000.00	18,000.00
7	Questionnaire forms (printing)	320	8	5.00	12,800.00
8	Report materials and supplies			12,000.00	12,000.00
	<b>C. Travel</b>				
9	Travel for researcher	1	10	2,500.00	25,000.00
10	Travel for research assistants	5	5	300.00	7,500.00
11	Subsistence	8	5	500.00	20,000.00
	<b>D. Services</b>				
12	Computer use/data storage			16,000.00	16,000.00
13	Photographic/graphic services			6,000.00	6,000.00
14	Data analysis			24,000.00	24,000.00
15	Other			36,000.00	36,000.00
	<b>Total Amount</b>				<b>281,300.00</b>

### APPENDIX D: QUESTIONNAIRE:

#### Socio-Demographic Data, Assist and Life Events Scale- UCLA

#### Section A: Socio Demographic Data

1. Gender of the respondent:
  - 1 = Male
  - 2 = Female
2. Age in years.....
3. Education level
  - 1 = Form one
  - 2 = Form two
  - 3 = Form three
  - 4 = Form four
4. Number of siblings if any .....
5. Distance to school in Kms .....
6. Type of school .....
7. Presence of a guardian.....

**Section B: Alcohol Smoking and Substance Involvement Screening Test**

**(ASSIST) questionnaire (Adapted):**

Please answer the following questions about your experience with alcohol, across your lifetime and in the past 3 months.

**QUESTION 1**

<b>In your life, which of the following substance have you ever used?</b>	<b>Yes</b>	<b>No</b>
Alcohol beverages		

If the answer is **Yes** to the above item, please proceed to question 2, if **No** to all items, please do not proceed.

**QUESTION 2**

<b>In the past three months, how often have you used the substances mentioned?</b>	Never (1)	Once or twice (2)	Monthly (3)	Weekly (4)	Daily or almost daily (5)
Alcohol beverages					

If **Never** in question 2, skip to question 6. If either of the other options (once or twice, monthly, weekly or daily or almost daily) in question 2 was used in the past 3 months, continue with questions 3, 4, and 5 for each substance used.

**QUESTION 3**

<b>During the past three months, how often have you had a strong desire to use substance?</b>	Never (1)	Once or twice (2)	Monthly (3)	Weekly (4)	Daily or almost daily (5)
Alcohol beverages					

**QUESTION 4**

<b>During the past three months, how often has your use of substance led to health, social, legal or financial problems?</b>	Never (1)	Once or twice (2)	Monthly (3)	Weekly (4)	Daily or almost daily (5)
Alcohol beverages					

**QUESTION 5**

<b>During the past three months, how often have you failed to do what was normally expected of you because of your use of substance?</b>	Never (1)	Once or twice (2)	Monthly (3)	Weekly (4)	Daily or almost daily (5)
Alcohol beverages					

**QUESTION 6**

<b>Has a friend or relative or anyone else ever expressed concern about your use of substance?</b>	No, never (1)	Yes, in the past 3 months (2)	Yes, but not in the past 3 months (3)
Alcoholic beverages			

**QUESTION 7**

<b>Have you ever tried and failed to control, cut down, or stop using substance?</b>	No, never (1)	Yes, in the past 3 months (2)	Yes, but not in the past 3 months (3)
Alcoholic beverages			

**QUESTION 8**

<b>Have you ever used any drug by injection (non-medical use only)</b>	No, never (1)	Yes, in the past 3 months (2)	Yes, but not in the past 3 months (3)
Alcoholic beverages			

**Responses for Questions 2-5****Never:** Not used in the last 3 months**Once or twice:** 1 or 2 times in the last 3 months**Monthly:** 1 to 3 times in one month**Weekly:** 1 to 4 times per week**Daily or almost daily:** 5 to 7 days per week**ASSIST SCORING****SEVERITY**

<b>Substance</b>	<b>Low</b>	<b>Moderate</b>	<b>Severe</b>
Tobacco products	0-3	4-26	27+
Alcohol beverages	0-10	11-26	27+
Marijuana	0-3	4-26	27+

### Section C: Life Event Scale -UCLA

Below is list of **Very Scary Dangerous or Violent** things that sometimes happen to people. These are times where someone was **Hurt Very Badly or Killed**, or could have been. Some people have had these experiences, some children have not had those experiences. Please be honest in answering if the violent thing happened to you, or if it did not happen to you.

Hapa chini ni orodha ya vitu vya kuogopesha hatari au vurugu ambavyo hutokea watu. Huu ni wakati ambapo mtu aliumizwa vibaya au kuuliwa au angeumizwa na kuuliwa . watu wengine wamepitia haya, wengine hawajapitia. Tafadhali kuwa mkweli unapojibu kama vurugu lilitokea kwako au kama haikutokea kwako.

**For Each Question:** Tick “yes” if this scary thing **Happened to You** “No” if it **Did Not** happen to you

**Kwa Kila Swali.** Tia alama “Ndiyo” kama hichi kitu cha kuogopesha kilitokea kwako. Tia alama “la” kama hakikutokea kwako.

### Live Event Scale UCLA: Children

Childs Name\_\_\_\_\_ Age\_\_\_\_\_ Sex (circle) Boy / girl

Jina la mtoto Umri Jinsia (.Mddhara) Msichana

Mvulana

Today's Date (day, month, year)\_\_\_\_\_Class in school\_\_\_\_\_

Tarehe ya leo (siku, mwezi, mwaka) Kiwango au darasa shuleni

School \_\_\_\_\_Teacher \_\_\_\_\_town/village\_\_\_\_\_

Shule Mwalimu mji/kijiji

1) During the post-election violence did you experience anything scary or violent

Yes No

Wakati wa mzozo baada ya uchaguzi, ulishuhudia tukio la kuogopesha au vurugu

Ndio La

2) Have you ever been in a disaster, like a fire or flood?

Yes No

Kuwa katika msiba kama moto au mafuriko

Ndio La

- 3) Have you ever been in a bad accident, like a very serious car accident? Yes No  
 Kuwa kwa ajali mbaya kama ajali ya gari Ndio La
- 4) Have you ever been in a place where a war was going on around you? Yes No  
 Kuwa sehemu ambayo vita viliendelea kukuzunguka Ndio La
- 5) Have you ever been hit, punched, or kicked very hard at home Yes No  
 Kupigwa, panchi au kupigwa teke kwa nguvu sana ukiwa nyumbani. Ndio La  
 (usiweke vita vya kawaida kati ya dada na kaka)
- 6) Seeing a family member being hit, punched or kicked very hard at home. Yes No  
 Kuona mmoja wafamilia akipigwa panchi au teke kwa nguvu sana akiwa.  
 Ndio La  
 Nyumani (usiweke vita vya kawaida kati ya dada na kaka)
- 7) Being beaten up, shop at or threatened to be hurt badly in your town. Yes No  
 Kupigwa, kulengwa risasi au kutisha kuumizwa vibaya katika mji wako. Ndio  
 La
- 8) Seeing someone in your town being beaten up, shot at or killed. Yes No  
 Kuona mtu katika mji wako akipigwa, akilengwa risasi au akiuliwa. Ndio  
 La
- 9) Seeing a dead body in your town (do not include funeral) Yes No  
 Kuona maiti katika mji wako (usiandika mazishi) Ndio La
- 10) Having an adult or someone much older touch your private sexual body. Yes No  
 parys When you did not want them to  
 Kiwa na mtu mzima au mzee akishika sehemu zako za siri kama hutaki.  
 Ndio La
- 11) Hearing about the violent death or serious injury of a loved one Yes No  
 Kusikia kuhusu kifo kinachotokana na vurugu au dhari la hatari kwa  
 Unayempenda Ndio La

12) Having painful and scary medical treatment in a hospital when you  
 Were very sick or badly injured. Yes No  
 Kupata uchungu na matibabu nya kuogopesha kwa hospitali ukiwa  
 Mgonjwa Sana au umeumizwa vibaya. Ndio La

13) Other than the situation described above, has anything else ever  
 Happened to you that was really scary, dangerous or violent? Please write what  
 happened \_\_\_\_\_  
 Mbali na mikasa iliyosimuliwa elezawajuu, kuna kitu chochote  
 Kilichokutokea ambacho kilikuwa cha kuogopesha, hatari au vurugu?  
 Tafadhali andika kilichotokea  
 \_\_\_\_\_  
 \_\_\_\_\_

14) A) if you answered: YES” to only ONE thing in the above list of question #1 to  
 #13, place the number of that thing (#1-#13) in this blank,# \_\_\_\_\_  
 Kama umejibu “NDIYO” kwa kitu kimoja pekee katika jiyo orodha ya maswali  
 #1 mpaka #13, weka / andika namabari ya hicho kitu (#1-#13) katika hili pengo  
 # \_\_\_\_\_

B) If you answered “YES” to MORE THAN ONE THING, place the number  
 of the thing that BOTHERS YOU THE MOST NOW in this  
 blank# \_\_\_\_\_

Kama umejibu “NDIYO” kwa kitu zaidi ya kimoja, andika/ weka nambari ya kitu  
 ambacho kinakusumbua zaidi sana kwenye hili pengo # \_\_\_\_\_

How long ago did this bad thing (your answer to A or B)

Happen to you? \_\_\_\_\_

Ni muda gani tangu hicho kitu kibaya (jibu lako la A au B) kikutendekee?

Write what happened \_\_\_\_\_

Tafadhali andika nini kilitendeka \_\_\_\_\_

\_\_\_\_\_

**SECTION D: Post traumatic stress disorder (PTSD)**

FOR THE NEXT QUESTIONS, please TICK (YES) or (NO) to answer HOW YOU FELT during or right after the experience happened that you just wrote about in question 14

KWA MASWALI YANAYOFUATA, tafadhali TIA ALAMA (NDIYO) au (LA) kujibu VILE WEWE ULIHISI wakati au punde baada ya mkasa kutokea ulioandika kwenye swali nambari 14.

- 15) Were you scared that you would die? Yes No  
Je uliogopa kwa kuwa ungekufa? Ndio La
- 16) Were you scared that you would be hurt badly? Yes No  
Je uliogopa kwa kuwa ungeumizwa sana? Ndio La
- 17) Were you hurt badly ? Yes No  
Je uliumizwa sana? Ndio La
- 18) Were you scared that someone else would die? Yes No  
Je uliogopa kwa kuwa mtu mwingine angekufa? Ndio La
- 19) Were you scarred that someone else would be hurt badly? Yes No  
Je uliogopa kwa kuwa mtu mwingine angeumia vibaya? Ndio La
- 20) Was someone else hurt badly? Yes No  
Jje mtu mwingine aliumizwa vibaya? Ndio La
- 21) Did someone die? Yes No  
Kuna mtu alikufa Ndio La
- 22) Did you feel scared, like this was the scariest experience ever? Yes No  
Je ulihisi uliogopa, kama jambo hili lilikua la kuogopesha maishani mwako Ndio  
La
- 23) Did you feel you could not stop what was happening or that you needed  
Someone to help? Yes No  
Je ulihisi ya kwamba haungeweza kusimamisha jambo hili kutokea au ulihitaji  
Usaidizi wa mtu mwingine Ndio La
- 24) Did you feel that what you saw was disgusting or gross? Yes No  
Je ulihisi kitu kile uliona kilikuchukiza au kukupa uzito mkubwa? Ndio La
- 25) Did you run around or act like you were very upset? Yes No  
Je ulikimbia au kupagawa sana? Ndio La
- 26) Did you feel confused? Yes No  
Je ulichanganyikiwa sana ? Ndio La

27) Did you feel like what was happening did not seem real, like I was going on in a movie instead of real life. Yes No

Je ulihisi kama kilichokuwa kikitokea hakikuuwa kweli kwa njia nyingine, Kama ilikuwa ikiendelea kwa filamu badala ya kweli. Ndio La

Here is a list of problems people sometimes have after very stressful experiences. Please THINK about the bad thing that happened to you that you wrote about in Question #14. Then READ each problem on the list carefully. CIRCLE ONE of the numbers (0,1,2,3,4 or 5) that tells how often the problem has happened to you in the past month. Refer to the Rating sheet (in page 6) to help you decide how often the problem has happened. PLEASE BE SURE TO ANSWER ALL QUESTIONS.

Hapa ni orodha ya matatizo ambayo watu wakati mwingine huwa nayo baada ya kupitia matukio ya kufadhaisha. Tafadhali jikiria kuhusu matukio ya mfadhaiko yaliyotokea kwako ambayo uliandika katika swali la 14 kisha soma kila tatizo katika orodha kwa makini. Viringa moja ya nambari (0,1,2,3,4 ama 5) ambayo inakuelezea ni mara ngapi tatizo hilo limefanyika kwako kwamuda wa mwezi uliopita . rejelea katika ukurasa wa kukadiria matokeo (ukurasa wa sita) ili kukusaidia kuamua in mara ngapi tatizo hili limefanyika.

TAFADHALI HAKIKISHA UMEJIBU MASWALI YOTE.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>NONE</b>	<b>LITTLE</b>	<b>SOME</b>	<b>MUCH</b>	<b>MOST</b>
How much time during the past month	None	Little	Some	Much Most
Ni mara ngapi katika mwezi uliopita?	Hakuna	Kiasi	Wingi	Sana

I watch out for danger or things that I am scared of

Ninatahadhari kabla ya hatari au vitu ninavyoogopa **0 1 2 3 4**

When something reminds me of what happened i get

Very upset, scared or sad

Wakati kitu/ jambo linalonikumbusha juu ya **0 1 2 3 4**

Yaliyotendeka ninafadhaiks au ninakasirika

I have upsetting pictures or sounds of what happened

Come into my mind when I do not want them to **0 1 2 3 4**

Nina mafikira ya kufadhaisha, picha na sauti za  
Yaliyotokea yakinijia kwenye akili yangu kama sitaki

I feel grouchy, angry or mad.

Ninahisi kununa unika/ hasira au wazimu 0 1 2 3 4

I have dreams about what happened or other bad  
dream

ninakuwa na ndoto kuhusu yaliyotokea au ndoto  
nyingine mbaya 0 1 2 3 4

I feel like I am back at the time when the bad thing  
happened, living through it again

ninahisi kama nimerudi wakati jiccho kitu kibaya  
kilitokea na ninaishi nikipitia tena 0 1 2 3 4

I feel like staying by myself and not being with my  
Friends

Ninahisi kuwa peke yangu na sio na marafiki 0 1 2 3 4

I feel alone inside and not close to other people

Ninahisi upweke ndani sio na ilihusiano wa karibu na  
Watu 0 1 2 3 4

I try not to talk about or have feelings about

What happened. 0 1 2 3 4

Hujaribu nisiongee wala kufikiria au kuhisi  
Kilichotendeka

I have trouble feeling happiness or love

Ninasumbuka kuhisi furaha au mapenzi 0 1 2 3 4

I have trouble feeling sadness or anger

Ninasumbuka kuhisi huzuni au hasira 0 1 2 3 4

I feel jumpy or startle easily, like when I hear a loud

Noise or when something surprises me

Huwa situlii na hushituka upesi, kwa mfano **0 1 2 3 4**

Ninaposikia sauti ya juu au kuona kitu kinachonishangaza

I have trouble going to sleep or I wake up often

During the night. **0 1 2 3 4**

Ninasumbuka kulala (kupata usingizi) au huamka

Mara kwa mara usiku.

I think that some part of what happened is my fault.

Ninajilaumu kwa machache yale yaliyo tendeka **0 1 2 3 4**

I have trouble remembering important parts of what

happened. **0 1 2 3 4**

Ninasumbuka kuwa makini

I stay away from people, places or things that make

Me remember what happened.

Ninajaribu kukaa mbali/ kando na watu, sehemu au **0 1 2 3 4**

Vitu vinavyofanya nikumbuke kilichotolea

When something reminds me of what happened I

Have strong feelings in my body like my heart beats

Fast, my head aches, or my stomach aches **0 1 2 3 4**

Kikinikumbusja kuhusu yaliyotokea, huwa na hisia

Kali kwenye mwili kama moyo kupiga haraka, kichwa

Kuuma na tumbo kuuma.

I think I will not live a long life

Ninafikiria kuwa sitaishi maisha marefu **0 1 2 3 4**

I am scared that the bad thing will happen again

Ninaogopa kuwa mambo mabaya yatatokea tena

I have arguments or physical fights					
Mimi hugombana au kupigana	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
I feel pessimistic or negative about my future					
Huhisi sina matumaini au nina mtazama mbaya	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Kuhusu maisha yangu ya baadaye					

**FREQUENCY RATING SHEET**

**UKURASA WA KUKADIRIA MATOKEO**

**Instructions:** People sometimes after extremely stressful events or experiences, Referring to the traumatic event that still troubles you most now, how much have you been bothered during the PAST SEVEN (7) DAYS by each of the following problems that occurred or became worse after an extremely stressful event/experience? Please respond to each item by marking (Y or X) one box per row

How Often or How Much Of The Time During The Past Month, That Is Since \_\_\_\_\_ Does The Problem Happen?

Ni Mara Ngapi Au Wingi Wa Wakati Wa Mwezi Uliopita, Hiyo Ni Tangu \_\_\_\_\_, Je Shida Hiyo Inatokea

**0                    1                    2                    3                    4**  
**NONE    LITTLE                    SOME                    MUCH                    MOST**

							Clinician
		Not at all	A little bit	Moderate	Quite a bit	Extremely	Item score
1	Having “flashbacks” that is, you suddenly acted or felt as if a stressful experience from the past was happening all over again (for example you are experienced parts of stressful experience by seeing, hearing, smelling, or physical feeling parts of the experience.	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	

2	Feeling very emotionally upset when something reminded you of a stressful experience	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	
3	Trying to avoid thoughts, feelings, or physical sensations that reminded you of a stressful experience	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	
4	Thinking that a stressful eventful happened because you or someone else (who didn't directly harm you) Did something wrong or because of something about you?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	
5	Having a very negative emotional state (for example, you were experiencing lots of fear, anger, guilt, shame, or horror) after a stressful experience?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	
6	Losing interest in activities you used to enjoy before having a stressful experience?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	
7	Being "super alert" on guard or constantly on the lookout for danger?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	
8	Feeling jumpy or easily startled when you hear an unexpected noise?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	
9	Being extremely irritable or angry to the point where you yelled at other people, got into fights, or destroyed things?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	
Total/ partial raw score							
Prorated total raw score: if 1-2 item left unanswered							

Name \_\_\_\_\_ Age \_\_\_\_\_

Sex: Male / female Date \_\_\_\_\_

APPENDIX E: MAPS



## APPENDIX F: NACOSTI PERMIT

 <b>REPUBLIC OF KENYA</b>	 <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
Ref No: <b>217992</b>	Date of Issue: <b>11/January/2021</b>
<b>RESEARCH LICENSE</b>	
	
<b>This is to Certify that Mr., simon ESINYEN ngipuo of University of Nairobi, has been licensed to conduct research in Turkana on the topic: PATTERNS OF TRAUMATIC EVENTS, SEVERITY OF POST TRAUMATIC STRESS DISORDERS AND ALCOHOL USE AMONG HIGH SCHOOL STUDENTS IN TURKANA COUNTY for the period ending : 11/January/2022.</b>	
License No: <b>NACOSTI/P/21/8164</b>	
<b>217992</b> Applicant Identification Number	 Director General <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
Verification QR Code	
	
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is Guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014

CONDITIONS

1. The License is valid for the proposed research, location and specified period
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies
5. The License does not give authority to transfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one year of completion of the research
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice

National Commission for Science, Technology and Innovation  
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Mobile: 0713 788 787 / 0735 404 245  
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Website: www.nacosti.go.ke

## APPENDIX G: ETHICS APPROVAL



UNIVERSITY OF NAIROBI  
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### KNH-UoN ERC

Email: [uonknh\\_erc@uonbi.ac.ke](mailto: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](https://twitter.com/UONKNH_ERC)

Ref: KNH-ERC/A/361

19 October 2020

Simon Esinyen Ngipuo  
Reg. No. H56/7572/2017  
Dept. of Psychiatry  
School of Medicine  
College of Health Sciences  
University of Nairobi



Dear Simon

**RESEARCH PROPOSAL – PATTERNS OF TRAUMATIC EVENTS, SEVERITY OF POST TRAUMATIC STRESS DISORDERS AND ALCOHOL USE AMONG HIGH SCHOOL STUDENTS IN TURKANA COUNTY (P192/03/2020)**

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 19<sup>th</sup> October 2020 – 18<sup>th</sup> October 2021.

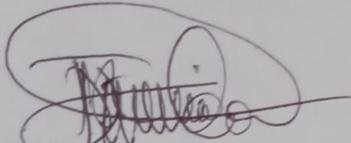
This approval is subject to compliance with the following requirements:

- Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
- 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.
- 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.
- Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- 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*).
- 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.

Protect to discover

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

Yours sincerely,



**PROF. M. L. CHINDIA**  
**SECRETARY, KNH-UoN ERC**

- c.c. The Principal, College of Health Sciences, UoN  
The Senior Director, CS, KNH  
The Chairperson, KNH- UoN ERC  
The Assistant Director, Health Information Dept, KNH  
The Dean, School of Medicine, UoN  
The Chair, Dept. of Psychiatry, UoN  
Supervisors: Dr. Lincoln Khasakhala, Dept.of Psychiatry, UoN  
Dr. Anne Mwayo, Dept.of Psychiatry, UoN