ASSESSMENT OF ASSOCIATION BETWEEN ANXIETY, DEPRESSION AND ALCOHOL USE DISORDERS AMONG THE DEAF IN NAIROBI EAST

By

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DECLARATION

I, Naomi Idah Anyango do hereby declare that this dissertation is the result of my original work and to the best of my knowledge has not been submitted either wholly or in part, to, any institution for any award whatsoever.

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DEDICATION

To my late father, Dalmas O. Oduor, though you were not there to share with me the joy of

my achievement, thank you for your constant words of encouragement and believing in me

I also dedicate this work to my mother Christine, my son Raphael and all the participants.

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ABBREVIATIONS.

AIDS	Acquired Immune Deficiency Syndrome
AUDIT	Alcohol Use Disorders Identification Test
BAI	Beck Anxiety Inventory
BDI-II	Beck Depression Inventory, 2nd revision
CBD	Central Business District
CDC	Centers for Disease Control
dB	Decibel
DEK	Deaf Empowerment Kenya
DSM V	Diagnostic Statistical Manual Five
HIV	Human Immunodeficiency Virus
HL	Hearing Loss
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
ILO	International Labour Organization
KSL	Kenyan Sign Language
NIH	National Institute of Health (America)
NIHL	Noise Induced Hearing Loss
WHO	World Health Organization
SCL-25	Hopkins Symptom Checklist

ABSTRACT.

Background: Globally, few studies have been done amongst the Deaf, resulting in little empirical data which relates to the prevalence and distribution of psychiatric symptoms and diseases amongst this population. Regionally as well as locally, the same can be inferred as true.

Objective: This study therefore aimed at determining the prevalence of anxiety and depression among the deaf in Nairobi East Dandora. It also looked at assessing the association between anxiety, depression and alcohol use disorders amongst the Deaf in Nairobi East (Dandora, Kayole/Soweto, Mukuru, Kariobangi /Huruma).

Study design: This was a cross sectional descriptive study employing quantitative approach in data collection.

Methodology: A random system search for respondents was done and numbers of respondents were generated. The numbers were extracted from the Deaf Empowerment Kenya register. The respondents upon consent filled in a structured questionnaire consisting of 17 items to check their socio demographic status. Anxiety was measured using the Beck Anxiety Inventory, Depression was measured using the Beck Depression Inventory and Alcohol Use Disorders was measured using the Alcohol Use Disorders Identification Test respectively. A total of 159 respondents took part in the study.

Hypothesis to be tested were:

H_1 There is no positive association between anxiety, depression and alcohol use amongst the Deaf.

H_0 There is a positive association between anxiety, depression and alcohol use disorders among the Deaf.

Analysis was done using Statistical Package for Social Sciences (SPSS) version 22 and the results are presented in form of tables, frequency polygons, pie charts as well as bar graphs and narrative. Associations between variables were determined using the Chi square, Correlations was determined using the Cramers Phi Coefficient.

Results: Out of the 159 participants, 59.1% were female and the overall mean age was 32.6 years (± 6.510) years. Most of the participants were single (separated, widowed, and never married) representing over 50% of the total sample population. In connection with education status (44.7%) of the respondents had attained college level of education, while economic status showed (52.2%) were unemployed. A majority (71%) had severe hearing loss. (35.2%) of the respondents had clinical depression, (75.5%) had clinical anxiety and (33.3%) had alcohol use disorder. There was no significant association between depression and alcohol use disorders at a $P=0.221$. There was also no significant association between anxiety and alcohol use disorders at a $P=0.531$. However, comorbid depression and anxiety was highly associated with alcohol use disorder at a $P = 0.001$.

Conclusions: The findings demonstrate that among the deaf in the study site, Nairobi East, a considerable number suffer from anxiety, depression and alcohol use disorder. One of the factors associated with the prevalence was communication barriers leading to feeling of isolation among the deaf persons due to the stigma and inadequate health care geared towards their needs.

CHAPTER 1: INTRODUCTION.

1.1 Background information

Disability is part of human life, and it has been indicated that almost everyone will be impaired at some point in the course of their lives temporarily or permanently and as people age, they increasingly experience functional difficulties (WHO Disability report, 2011)

The report further indicates that disabled persons do not enjoy equivalent access to health care, employment and education opportunities as well as lack of access to services that meet their needs. They experience social exclusion in various levels of human interactions in everyday life. Social exclusion may lead to development of depression, anxiety and alcohol use disorders as well as other adverse health outcomes.

Ryan (2015) indicates that there is greater risk for depression for those individuals with untreated hearing loss, a common mental disorder estimated to be the principal cause of world disability by the year 2020. She further indicates that persons who are 50 years and beyond with hearing loss that has not been treated are more likely to report anxiety, depression, frustration and anger, paranoia and emotional instability. The degree of depression also increases with the hearing loss severity.

Monzani et al (2008) found that amongst adults aged 35 to 54 in their study with hearing loss in both ears which was either mild to moderate, had increased levels of disability and psychological distress as well as a decrease in social functioning. The respondents exhibited increased levels of depression, anxiety, hostility and interpersonal sensitivity.

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Deaf people are even more disadvantaged due to the nature of their disability. There are few treatment and assessment centres to help them deal with the psychological problems they experience and assessors are unfamiliar with how to work with them. Guthmann& Sandberg, (2007).

To the researcher's best knowledge, there is limited information and research on Deaf and Hard of Hearing in Africa. In Kenya, a study is yet to be done on the connection between depression, anxiety and alcohol use disorders among the Deaf. This therefore means there is an urgent problem that needs to be addressed, a quest that this study aims to satisfy.

Deaf Empowerment Kenya

The former Dandora Deaf Self Help Group (DDSHG) now known as Deaf Empowerment Kenya (DEK) is a Community Based Organization drawing members from the Deaf community. It was registered in 1997 by the Culture and Social Services Ministry. The organization purpose was to emancipate the community about the needs of Deaf persons and to advance maximum participation of the Deaf community in the society. The originators of DDSHG were five deaf persons living in Dandora whose initial idea behind forming this organization was to economically emancipate Deaf persons through starting off a savings and loaning scheme locally referred to as "merry go round". Over the years the group's membership solidly gone up making the originators recognize the need to be legally licensed and develop guiding rules and principles.

The organization draws its members from areas such as: Baba Dogo, Dandora, Huruma, Mukuru, Kayole, Kariobangi and Soweto areas which are all encompassed in Nairobi East.

DEK strives towards inclusion of Deaf persons in services related to: health care, education, governance and social issues, with the target of improving quality and an all-inclusive enjoyment of their fundamental rights. The organization strives to ensure capacity building of Deaf persons and improve their well- being through initiating agendas related to advocacy, training and networking – promoting inclusivity to local organizations and institutions.

DEK is associated with a number of projects targeting Deaf persons. These include: The health care and HIV&AIDS project that seeks to equip Deaf persons and their families with information on reproductive care, HIV&AIDS prevention, care and support, mainstreaming disability in services provision inlets in HTC (HIV testing and counselling), PMTCT (prevention of mother- to- child transmission). DEK also works with various stakeholders on projects aimed at enhancing sign language communication and inclusion and mainstreaming issues of the Deaf at the work place and the community. Inclusive learning in public regular schools is a project aimed at improving the enrollment of boys and girls who are Deaf in accessing basic education and sensitizing community members on the exclusive practices among children who are Deaf – working with the Ministry of education to ensure children who are Deaf and vulnerable receive quality basic education.

The vision of DEK is a community where people with disability are given freedom to; enjoy their rights and equally participate in the larger society.

1.2: Problem statement.

Previous studies show scarcity of data on prevalence of alcohol use disorder amongst the deaf. Deaf persons exhibit symptoms of anxiety and depression at a greater level compared

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to their hearing counterparts. This is despite advancement and awareness and availability of mental health services that address these issues. (Titus and White, 2009, Kvam et al, 2006, Levin, 2013)

Persons with hearing disabilities have been found to experience everyday social problems that are above those experienced by the non-disabled persons' (Kvam et al., 2007). As it is in most developing countries, many disabled persons' live in poverty with limited opportunities for accessing education, suitable housing, health and employment opportunities.(ILO, 2015)

While Kenyan Deaf persons are physically and intellectually normal, they are excluded from work and social dynamics due to communication difficulties. This makes it nearly impossible for them to access services offered to the normal populace, including psychological intervention for their mental health issues. (Valdisteno, 2015)

The deaf communities strive to portray a positive image thus contributing to their reluctance in acknowledging existence of alcohol problems. It is also difficult to assess the true extent of their alcohol use disorders due to inability of mental health practitioners in accommodating their communicating styles (Guthmann and Blozis, 2001., Steitler and Rubin, 2001). A lack of assessment tools for mental health practitioners to use among deaf individuals adds to the problem. (Guthmann and Sandberg, 2015). Consequentially deaf persons mental health needs lag behind compared to those of the hearing population. This creates an urgent need to cater for deaf persons in this regard.

The situation in Kenya shows scarce, if any previous studies assessing association between alcohol usage, anxiety and depression disorders among the deaf. The investigator aimed to

identify alcohol use disorders amongst the Deaf in Nairobi East and possible association of anxiety and depression presumably with the psycho-socio-demographic challenges.

Findings of the study will fill in the knowledge gap on the mental health status/issues of the Deaf, thus inform policy makers and other stakeholders on adapting mental health services tailored specifically for the Deaf. The resultant effect will lead to improvement of the quality and outcome of the deaf persons' lives.

CHAPTER 2: LITERATURE REVIEW.

2.1: Introduction.

The WHO disability report (2011) indicates that disabled persons do not have equal opportunities to health care, employment and education as well as lack of access to services that meet their needs. They experience social exclusion in various levels of human interactions in everyday life. This social exclusion may lead to development of depression anxiety and alcohol use disorders as well as other adverse health outcomes.

The fact sheet further adds that hearing aids current production meets less than 10% of the global need. Those aged 65 and above, a third are reported to be affected by disabling hearing loss and the widest presence is felt in, sub-Saharan Africa, Asia Pacific and South Asia.

In Kenya, however, data is not sufficient on the situation of persons' with disabilities. The available numbers do not give an accurate picture of the disabled. Applying the WHO recommended 10 per cent of the current population there may be some 3 million disabled persons of which the extrapolated Deaf population stands at 340,000 and the number is increasing. This number is scattered throughout the country and is based on a 2007 census (ILO, 2015; Ethnologue, Kenyan sign language, 2010).

2.2 Hearing Impairment

Child assessment service (dhcas.hk.gov; 2008) defined hearing impairment as the difficulty in perceiving or identifying sound clearly resulting in auditory problems.

French (2015) defines "Deaf" as a hearing disability that is so extreme in which a student is weakened in processing of linguistic information through hearing, without amplification, that is detrimental to their educational performance. French, further stated that "Hard of Hearing" means a hearing disability which is either lasting or fluctuates, detrimentally affecting a student's educational performance but is not included under the definition of Deaf.

French indicated the degree of hearing loss as follows:

Table 2.1 Levels of hearing loss and difficulty comprehending speech/levels of loudness

Slight - conductive loss	27-40 dB HL	Faint speech is difficult to comprehend
Mild - use of hearing aid	41-55 dB HL	Normal speech (trouble hearing or comprehending regular speech up close or regular speech in a quiet office environment
Marked/Moderate	56-70 dB HL	Loud speech (trouble hearing or comprehending every day conversations or a telephone ringing.)
Severe - sensory-neural loss	71-90 dB HL	Shouted speech (can only hear loud sounds such as very loud speech, sirens or a door slamming.)
Profound - use of signing	>90 dB HL	Any speech, even magnified

According to Malhautra (2015), hearing is measured in a dB scale whereby normal hearing is rated on a scale of <25dB HL

'Hard of Hearing' according to WHO (2015) indicated that it alludes to people with hearing loss varying from mild to severe and communicate usually through spoken language and can gain from cochlear implants, hearing aids and other assistive gadgets as well as captioning.

'Deaf' persons mostly have profound hearing inability meaning that they experience very little or no hearing, and often use sign language for communicating.

According to Oishi and Schacht (2011), approximately 5% of the worldwide population suffers from Noise Induced Hearing Loss, otherwise known as NIHL. Hearing loss has been indicated as one of the most frequently diagnosed medical condition by physicians, and is regarded by some in the deaf circles as a condition and not an illness. (Zadeh and Selesnick 2001)

NIH (2015) describes two kinds of hearing loss. One type results from the damage of the auditory nerve in the inner ear, and is permanent, whereas the other type results from earwax build-up, fluid or a punctured ear drum leading to inability of sound waves to reach the inner ear. The latter can be corrected by treatment or surgery.

NIH (2015) further states that hearing problems that go untreated can get worse. Treatment can include: hearing aids, cochlear implants, special training, surgery and medicines.

WHO (2015) indicates that over 5%, 360 million people in the world have debilitating hearing loss, meaning that these persons have a hearing loss greater than 40dB in the ear they consider better hearing, in adults and 30dB in the ear that is better in children. It also

notes that a greater number of people with disabling hearing loss live in low- and- middle income countries, Kenya included.

WHO (2015), James Madison University(2015) shows that hearing loss can result from; genetic causes: connexin 26 deafness which is congenital, Stickler syndrome (dominant gene syndrome), Pendred syndrome (recessive gene syndrome); complications at birth; certain infectious diseases: measles, meningitis, mumps, HIV/AIDS, fetal alcohol syndrome, syphilis, otosclerosis; chronic ear infections; use of particular drugs: abuse of narcotic painkillers like vicodin, diuretics, aspirin and certain antibiotics, aminoglycosides; exposure to excessive noise: personal and electronic audio devices misuse; physical trauma: ear damage, brain trauma to the areas responsible for aural information; and ageing.

In Kenya, however, data is not sufficient on the situation of persons'- with disabilities. The available numbers do not give an accurate picture of the disabled. Applying the WHO recommended 10 per cent of the current population there may be some 3 million disabled persons of which the extrapolated Deaf population stands at 340,000 and the number is increasing. This number is scattered throughout the country and is based on a 2007 census (ILO, 2015; Ethnologue, Kenyan sign language, 2010).

2.3: Deaf culture.
The deaf have a culture, according to Padden and Humphries (2005) that describes their social beliefs, behaviours, art, history and values amongst others. Within the cultural context, the word deaf is noted with an uppercase 'D' and referred to as 'big D Deaf' in speech and when signing. However, when referred as an audiological condition, it is noted as a lowercase'd'

The Kenyan deaf people constitute a culture in the sense that they share the same beliefs, values, perceptions and behaviours (Mweri 2015). The Kenyan Sign language is one of the behaviours they share. They do not think of themselves as handicapped or having lost something (i.e., hearing), but rather celebrate and cherish their culture considering themselves as a linguistic minority. (Pepnet, 2015)

Padden and Humphries (1988) intimates that the Deaf community which includes the nuclear family members of Deaf people as well as interpreters of sign language who associate themselves with Deaf culture, does not automatically include all people who are deaf or hard of hearing.

2.4 Psychiatric symptoms and disorders among the Deaf.

Rostami (2014) states that deaf people have traditionally been excluded from general studies, resulting in little empirical research related to presence of psychiatric symptoms and disorders in the deaf population.

Ohre et al (2011) states that studies on the widespread presence of mental disorders among the prelingually deaf is scarce. The prelingually deaf are said to have lost their hearing before a child learns to understand and use language whereas the post lingual deaf are said to have lost their hearing after a child has learned some language (CDC 2015)

It has also been indicated that deaf patients have a higher rate of psychiatric disorders as compared to their hearing counterparts, and undergo difficulties in accessing mental health care services. (Masud-Ul-Haq 2008)

2.4.1: Depressive Disorders among the d/Deaf.

Depressive disorders, according to DSM V (2013) includes: "disruptive mood dysregulation disorder, premenstrual dysphoric disorder, major depressive disorder(including major depressive episode), persistent depressive disorder(dysthymia), depressive disorder due to another medical condition, substance/ medication induced depressive disorder, other specified depressive disorder and unspecified depressive disorder."

The manual further indicates the features common among these disorders which are: "presence of sad, empty or irritable mood, accompanied by somatic and cognitive changes that significantly affect the individuals capacity to function. What differs among them are issues of presumed etiology, timing or duration."

Age is important in diagnosis and early intervention has been widely studied and it is universally understood that if left unattended, hearing impairment causes severe cognitive and developmental delays (Masud-Ul-Haq 2008)

According to Zazove et al.,(2006), the Deaf culture has not been very open in acknowledging depression as well as the people who are affected by it. The prevalence of depression has also been found, according to Li et al (2014), to be high as hearing impairment becomes worse. This was influenced by low education level, living alone, smoking and binge drinking.

Kvam et al., (2007) found that females were notably more depressed than males. Those who became deaf either before age 4 or 9 were also found to express feelings of hopelessness markedly more than those whose ability to hear was lost at a later age. Turner and Beisser (1990) indicated that the probability for clinically significant emotional despair

was increased two to four times among persons with chronic diseases or disabilities as compared to non-disabled persons.

For example, amongst deaf adolescents, which is a 'difficult' period in life, it has been assumed that they undergo a lot of stress in their lives because of the enormous changes that occur in their lives. Some of these changes are in sexual behaviour, social changes whereby the adolescent spends more time with his/her peers and much less time with their parent, and also the development of identity adds onto their stressors. Deaf adolescents have therefore been found to be more depressed than their hearing counterparts (Rostami 2014)

Deaf adults on the other hand were also found to be disadvantaged as regards education and access to employment, especially for those with more advanced hearing loss. This resulted in adverse economic position, as well as poor access to mental health services thus putting them at a higher risk for depression and suicide (Masud-Ul-Haq 2008).

According to Aboge (2015) auditory disability had statistically noteworthy association with clinical depression. Amongst those with total impairment in hearing, they had an increased chance of clinical depression.

2.4.2: Anxiety Disorders amongst the d/Deaf.

The DSM V (2013) indicates anxiety disorders as those that share characteristics of intense fear (emotional reaction to real or perceived threat) and anxiety (prediction of future threat) and related behavioural disruptions. Majority of the anxiety disorders develop during childhood and are enduring if not treated. They comprise of: separation anxiety disorder, specific phobia selective mutism, panic disorder, social anxiety disorder also known as

social phobia, agoraphobia, generalized anxiety disorder, substance/medication induced anxiety amongst others.

In a Norwegian postal survey, that compared mental health in deaf adults against the general population, found that symptoms of anxiety were present in the Deaf respondents (Kvam, Loeb & Tambs 2007) as was indicated by their response of "feeling fearful" in the Hopkins Symptom Checklist (SCL-25). The study also noted that women were significantly more anxious as compared to men as well as those who lost their hearing either before ages 4 or 9.

According to Chavira et al.,(2005), (Theunissen et al, 2012) anxiety disorder is a frequently reported childhood psychiatric disorder and the Hearing Impaired children experience communicative, social and emotional problems at a higher level compared to their normally hearing counterparts

In another study by Fellinger et al.,(2005), that was conducted on members of the 'Association for the Deaf in upper Austria', it was established that the deaf participants had notably increased anxiety scores when contrasted with samples from previously published prevalence studies on hearing individuals. It was also noted that females had a higher anxiety score as compared to males which also mirrored the results of the hearing sample.

2.4.3: Alcohol Use Disorders among the d/Deaf.

Alcohol use disorders fall under substance–related and addictive disorders classes in the DSM V (2013). It is defined as a complicated pattern of alcohol use that leads to notable clinical despair within a 12 month period and exhibits a collection of behavioural and physical symptoms such as: tolerance, craving, repeated alcohol use leading to inability to

accomplish major role expectations at work, school or home., as well as persistent alcohol use despite having frequent or repeated social or interpersonal problems brought about or worsened by alcohol effects.

According to Titus & White (2009), there is little research on prevalence of alcohol and other substance use among deaf and hard of hearing youth. They further add that, however, most researchers do agree that there is prevalence of alcohol and substance use amongst the deaf and hard of hearing as is with the normal hearing population. Their study further indicates deaf experience additional risk factors such as limited information about the dangers of drug use, lack of exposure to prevention programs, disability related effects on their personality development amongst others which produce more severe problems leading to development of substance related problems. Language barriers, due to lack of interpreters or use of interpreters isolates them from the normal information flow and this is compounded further by isolation from the typical family support network.

It has also been indicated thatpersons who are deaf or hard of hearing feel "different" from the general population as well as feeling an absence of social support and as such, sometimes, resort to alcohol and drug use as a coping mechanisms to deal with these feelings. Deaf adolescents experience higher levels of stress as compared to their hearing counterparts, which serves as a risk factor to engage in alcohol and drug use. (Rubin, 2003; Guthmann, 2001)

Ndetei et al., (2009) found that there is a growing trend of alcohol use in Kenya and that more males than females were using it. It can therefore be inferred that the Deaf population in Kenya is also at the risk of alcohol use.

2.5: Rationale for the study.

Having witnessed the various challenges experienced by the deaf persons, and additionally coming from Clinical Psychology background, the investigator chose to conduct the study in Nairobi East, an area representing the target population of the deaf persons. The study will provide insight into alcohol use disorders and its association to anxiety disorders

This study findings will create awareness on the mental health status of the Deaf and will inform policy makers and other stakeholders on the importance of training public as well as private Mental Health practitioners on the communication method, Kenyan Sign Language (KSL), used by the Deaf which will ensure delivery of mental health services to the Deaf.

The findings will additionally create awareness on the importance of assessment and treatment to ensure the Deaf who have alcohol use disorders, depression as well as anxiety have a better quality of life.

The Deaf person(s) will also benefit by being made aware of their mental health as well as where to seek help when they exhibit signs and symptoms of psychopathology.

2.6: Study Question.

These included the following:

1. What are the socio demographic characteristics of the respondents?

2. What is the prevalence of anxiety and depression among respondents?

3. What is the prevalence of alcohol use disorders among the respondents?

4. Does any association exist between depression, anxiety and alcohol use disorders among the respondents?

2.7: Study Hypothesis.

The Null Hypothesis

H_1 There is no association between anxiety, depression and alcohol use amongst the Deaf.

The Alternative Hypothesis

H_0 There is a positive association between anxiety, depression and alcohol use disorders among the Deaf.

2.8: Study Objectives.

2.8.1: Broad objective.

The overall objective is to assess the association between anxiety, depression and alcohol use disorders among the Deaf in Nairobi East.

2.8.2: Specific objectives.

1. To determine the socio-demographic characteristics of the respondents.

2. To determine the prevalence of anxiety and depression among the Deaf

3. To determine the prevalence of alcohol use disorders among the Deaf

4. To assess the relationship between depression, anxiety and alcohol use disorders among the Deaf

2.9 Conceptual framework.

Psycho-socio-demographic factors	Intermediary factors	

Psycho-socio-demographic factors

Demographic Factors

Economic Factors

Psychosocial Factors

Contextual Factors

Intermediary factors

Social isolation

Stigma

Lack of information and access to medical care

Access to sign language interpreters

Anxiety Disorders

Depressive Disorders

Alcohol Use Disorders

CHAPTER 3: STUDY METHODOLOGY.

3.1: Study Design.

This study adopted a cross sectional study design where through a household survey, data was collected from the deaf persons. The study was quantitative.

3.2: Variables.

The independent variables in the study were the socio demographic, psychosocial, economic as well as contextual factors. The intervening variables in the study were gender, social isolation, stigma, lack of information and access to adequate medical care as well as access to sign language interpreters. The dependent variables in the study were anxiety disorders, depressive disorders as well as alcohol use disorders.

3.3: Study Setting

This study was carried out in Nairobi East-encompassing Dandora, Kayole/Soweto, Mukuru, and Kariobangi/ Huruma.

This area is located east of the CBD and houses mostly lower income population. From the CBD, using Juja road, the first neighbourhood to be accessed is Huruma which is 10 kilometres from the CBD; then Kariobangi North 11 kilometres from CBD; then Dandora 14 kilometres from the CBD; then Kayole 13 kilometres from the CBD; then Mukuru 33 kilometres from the CBD.

Soweto area neighbours Kayole and is 12 kilometres from the CBD.

The reason being, in Nairobi, this is the area where a large number of Deaf persons live. (see appendix 7)

The general population of study area, according to the 2009 census stands at 560,752 which represents 18% of the Nairobi population inhabiting 22.8 square kilometres of the county. This pales in comparison for example to Westlands with a total population of 176, 689 inhabiting 72.4 Square kilometres of the county. (infotrack, 2015)

3.4: Study Population.

The study respondents' were made up of Deaf persons' living in the aforementioned study area for a minimum period of 6 months. The respondents were generated from the DEK list where they are registered as Deaf persons' in the area. They were sampled from the deaf persons register stratum so as to give a representative sample.

3.4.1: Inclusion criteria.

- ✓ Deaf individuals adults
- ✓ At the time of interview respondents must have resided in the study site for the past six months
- ✓ Willingness to participate and gave consent to participate in the study

3.4.2: Exclusion criteria

- ✓ At the time of questionnaire filling, any drunk or inebriated person were not allowed to participate. However, those who came sober and within the data collection period were considered
- ✓ Persons who are not deaf
- ✓ Anyone who had no formal training such that they could not understand the contents of questionnaires independently or with the assistance of a sign language interpreter.

3.5: Sampling Method

The study employed random sampling technique, whereby each location i.e. Dandora, Kayole /Soweto, Mukuru, Kariobangi /Huruma, formed a cluster for random sampling

3.5.1: Sample Size Calculation Determination.

This was calculated following (Cochran, 1963)

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

Where:

      n is the sample size

      N is the population size

      e is the margin of error (0.05)

$$n = \frac{300}{1+300(0.05)^2}$$

$$n = \frac{300}{1+300(0.0025)}$$

.

$$n = \frac{300}{1+0.75}$$

$$n = \frac{300}{1.75}$$

$$\mathbf{n = 171}$$

The sample size calculation came to 171 respondents. However, due to an anticipated dropout of respondents, a 10% attrition rate of the sample size was added, bringing the final sample size to **188**

3.6: Sampling Procedure/Recruitment.

The researcher recruited respondents by using the DEK register and sending out text messages for possible meeting at the Dandora social hall. The DEK register has 300 Deaf persons in it indicating their places of residence as well contacts among other information. Microsoft Excel program was used to randomly recruit 188 respondents. This was done by typing the command '=RANDBETWEEN 1,300' which gave a starting number from which the 188 random numbers were generated. The sent messages indicated the date(s) and venue whereby the data collection took place. The respondents were required to give consent so as to participate in the study and were administered by the researcher prior to administration of the questionnaires. The researcher followed the laid down principles by KNH/UON ERC guidelines**.**

Precision & Confidence Level

The researcher aimed for a precision level of ±5%, to indicate the true value of the estimated population and a confidence level of 95% for inference.

3.7: Sign Language Interpreter.

The services of a sign language interpreter, also an employee of DEK, were enlisted to assist in describing the study procedure and objectives to the respondents. This proved particularly helpful to those who did not fully comprehend the written information

3.8: Data collection instruments.

The study aimed to assess the association between anxiety, depression and alcohol use disorders amongst the deaf in Nairobi East. Structured questionnaires in English language containing four sections were the tools used to elicit data. Under the guidance of the investigator a sign language interpreter assisted the respondents to comprehend questionnaires. Confidentiality was maintained during data collection. The questionnaire covered various data as shown in the appendices:

a. Social-demographic data.(appendix 3)

A socio-demographic questionnaire aiming to capture the unique characteristics of the study population was generated. This questionnaire consisted of 17 items such as age, sex, marital status, education, residence, occupation, income, severity of hearing loss, age when first diagnosed with hearing loss, social isolation amongst others. The estimated time for completing this questionnaire was between 10-15 minutes.

b. 21 questions from the Beck Depression Inventory (II)(appendix 4)

The BDI is a copyrighted 21 item self-reporting assessment tool that was developed in 1961 by Dr. Aaron T. Beck and revised in 1996 to BDI-II. It assesses existence of depressive symptoms and its severity in patients with psychiatric diagnoses and takes about 15 minutes to administer and score. It targets persons' 13 years and older in both clinical and research settings.

Each item in the tool attempts to identify presence of specific symptom(s) associated with depression in reference to how the patient has felt for the past two weeks, corresponding with the DSM-IV criteria.(Psych congress,2015)

BDI has been used for more than 35 years and has been described as highly reliable regardless of the population. Its construct validity has been established to identify depressed from non-depressed patients. The coefficient alphas for BDI-II for outpatients and college students' were higher as compared to its predecessor BDI-1A. One of the main reasons of its revision to BDI-II was so as to achieve content validity of the measure and as such items were added, eliminated and reworded. The mean BDI-II score came to 2.96 points higher than the BDI-1A.

The BDI-II therefore serves to identify the presence and severity of symptoms in line with the DSM-IV criteria and not as an instrument of diagnosis. (Medical university of South Carolina, 2015)

The total scores in the BDI II are arrived at by adding up each individual score of the 21 questions making the highest possible score to be at sixty three (63) and the lowest at zero (0)

Total Score Levels of Depression

0 – 13   minimal depression

14 – 19   mild depression

20 – 28   moderate depression

29– 63   severe depression.

c. 21 questions from the Beck Anxiety Inventory. (appendix 5)

The BAI is a copyrighted 21 item self-reporting assessment tool that takes about 5 to 10 minutes to administer. It was developed by Aaron Beck and published in 1990 and revised in 1993. It measures anxiety levels in individuals within the age range of 17-80 years. It can also be administered verbally by a trained administrator. (Pearson Clinical, 2015)

The BAI is psychometrically sound and has an internal consistency ranging at .92 to .94 for adults with a one week test-retest reliability of .75{Cronbach's alpha} (Grant,2015). The scale was validated in a sample of 1601 psychiatric patients' with various anxiety and depressive disorders. (Muntigh et al 2015)

The total scores in the BAI are arrived at by adding up each individual score of the 21 questions as guided by the scoring key making the highest possible score to be at sixty three (63) and the lowest at zero (0)

Total Score Levels of Anxiety

0-7   - Minimal level of anxiety

8-15   - Mild anxiety

16-25   - Moderate anxiety

26-63   - Severe depression

A score ranging at 0-21 shows a low anxiety level which is generally good. However, there is a possibility that one could be unrealistic in their assessment which would indicate denial or that they have learnt to 'hide' the symptoms frequently related to

anxiety.

A total score that goes above 36 is a potential cause for concern.

d. 10 questions from the AUDIT test.(appendix 6)

AUDIT test is a 10 item questionnaire that was developed for use by WHO and evaluated for over a period of two decades. It screens for harmful or hazardous alcohol consumption and is mainly used in primary care settings. It has been found to provide an accurate measure of danger across gender, age and cultures. It is administered by a trained professional such as psychologist, psychiatrist, nurse as well as doctors.

A score of 8+ is considered to indicate alcohol use disorder. It has been put forward, however, that for women, a lower cut off score of 4+ be considered as women undergo, at lower levels, alcohol damage. Likewise, for adolescents, a lower cut off score has been suggested. It was validated on primary health care patients' in six countries (nearly 2,000 patients') and is the only screening test specifically designed for international use. The developers had also recommended additional validation research which was done in different clinical and community samples in the world. Consideration was also made on the cultural appropriateness of the AUDIT. (WHO, 2015)

In total, it is estimated that the questionnaires will take 45 minutes to 1 hour to administer. Once the respondents are through with filling in the questionnaires, the researcher will be at hand to collect them and take them away for data entry and analysis.

3.9: Data Analysis and Presentation.

Data was coded, entered and managed by using the statistical package for social studies version IBM (SPSS) Statistics version 23 by applying descriptive and inferential statistics. Presentation of results was done by using pie charts, bar charts, frequency tables, as well as narrative form. Pearson's Chi-square was used to establish association between variables. Corellation analysis was determined by the Cramer's Phi coefficient.

3.10: Ethics statement.

This dissertation was developed under the supervision of academic staff. Before commencing the study, approval was sought from the department of Psychiatry. The researcher presented the study proposal in a research meeting consisting of faculty and other students for critique purposes. It was then presented to the Kenyatta National Hospital/ University of Nairobi Ethics and Research and Ethics committee for approval.

The procedures and the objectives of the study were explained to the respondents at the DEK offices. The details of the ethical considerations are laid down in the letter of consent (appendix 1)

3.11: Informed consent form.

Informed consent was obtained from the participants before the administration of the socio-demographic questionnaires and research instruments. This was based on appropriate information given in the informed consent form and adequate time was provided. The consent was in written form with details on ethical considerations such as procedure of the study, confidentiality, benefits, personal risks and the right to participate or withdraw at any time.

3.11.1: Confidentiality.

To ensure confidentiality all information obtained was stored in a locker and key, accessible only to the investigator.

3.11.2: Risks.

No risks to the respondents were anticipated other than those encountered in day-to-day life.

3.11.3: Benefits.

A long term benefit may include presentation of the study findings to the stakeholders involved in disability mainstreaming and as such formulation of policy to cater to the psychological needs of the Deaf in Nairobi and Kenya in general. The respondents found to be suffering from any of the disorders under study, were referred for appropriate help which entailed treatment for moderate and severe cases.They were further started on psychotherapy.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter entails presentation of data collected and analyzed. The results are presented in accordance to the study objectives.

4.2 Response Rate and Socio Demographic characteristics of Respondents

Out of the sampled size of 188 respondents a total of 159 respondents were interviewed composing a response rate of close to 85%. Female respondents totalled to 94 which was slightly above 59.1% of the total sample population. The remaining 40.9% were males. Most of the respondents were between the ages of 26 and 33 years. This represented 37.1% of the sample population. Generally, the mean age of the respondents was 32.6yrs (Std.Dev ± 6.510); the median was 32.5yrs; while the mode was 32yrs.

With regards to current marital status; most of the respondents were without partners. They represented over 50% of the total sample population.

Most of the respondents (44.7%) had attained college level of education (vocational training). 21.4% had attained secondary school education; 6.9% had no formal education. In terms of socio-economic status 52.2% were unemployed, 46.5% were employed

Socio-demographic profiles are summarized in Table 4.1

Table 4. 1:   Respondents Socio-Demographic Profiles

	Frequency/ Percent (N/%)
Gender	
Male	65(40.9%)
Female	94(59.1%)
Age	
18 to 25yrs	21(13.2%)
26 to 33yrs	59(37.1%)
34 to 41yrs	53(33.3%)
42 & Above	11(6.9%)
Education	
No Formal Education	11(6.9%)
Primary	38(23.9%)
Secondary	34(21.4%)
College/University level	71(44.7%)
NR	5 (3.1%)
Marital Status	
Never Married	41(25.8%)
Married	77(48.4%)
Divorced	2(1.3%)
Separated	24(15.1%)
Widowed	14(8.8%)
NR	1(0.6%)
Occupation	
Employed	74(46.5%)
Unemployed	83(52.2%)
NR	2(1.3%)
Education Background	
No income	20(12.6%)
<3000	10(6.3%)
3001 – 5999	62(39.0%)
6000 – 9999	52(32.7%)
10000- 12999	6(3.8%)
13000-15999	3(1.9%)
16000 & above	2(1.2%)
NR	4(2.5%)

4.3   Respondents Deafness Related Issues

The study sought to find out a few details about the respondents deafness; for instance, it was established that 65.4% of the respondents were born deaf. Though most of the respondents did not know when they were first diagnosed as deaf; most of those who knew indicated that they were diagnosed between the ages 3-5yrs. This represented close to 19% of the sample population. As for causes of deafness; apart from the majority who indicated that they were deaf from birth; 33.4% of the respondents indicated that they suffered from infections/ diseases that left them deaf. Slightly over 71% indicated their deafness was profound/severe.

As their subjective experiences; most of the respondents indicated they did not feel discriminated against only 37.1% indicated any form of discrimination. Asked how the discrimination was administered, the respondents who felt they were subjected to stigma indicated that they were discriminated against and denied job opportunities in some instances. They also indicated that they faced difficulty in communication because they were not considered in different forums; some were isolated from others or looked down upon. Others had gone through mistreatment or treated differently from the rest of the population. Provision of sign language interpreters was indicated by 82.4% while 61.0% indicated that they accessed health information easily.

Table 4. 2:   Respondents Deafness Information

	Frequency/ Percent (**N/%**)
Born Deaf	
Yes	104(65.4%)
No	51(32.1%)
NR	4(2.5%)
Causes of Deafness	
Don't know	23(14.5%)
Deaf from Childhood	80(50.3%)
Diseases(Infection)	53(33.4%)
Environmental Factors	1(0.6%)
Natural Causes	2(1.3%)
Subjected to stigma	
Yes	59(37.1%)
No	94(59.1%)
NR	6(3.8%)
Easy Access To Health Information	
Yes	97(61.0%)
No	58(36.5%)
NR	4(2.5%)
Age of First Diagnosis	
Do not know	97(61.0%)
Less than 3yrs	21(13.2%)
Between 3-5yrs	30(18.9%)
Between 6-12yrs	11(6.9%)
Degree of Hearing Loss	
Mild	12(7.5%)
Moderate	29(18.2%)
Severe	113(71.1%)
NR	5(3.1%)
Sign Language Interpreters Available	
Yes	131(82.4%)
No	25(15.7%)
NR	3(1.9%)

4.4 Depression Morbidity among the Respondents

4.4.1 Respondents Level of Depression

To determine the level of depression, respondents, were subjected to Becks Depression Inventory Assessment as per scores indicated in Table 4.3 above. Most of the participants (52.2%) were not depressed with scores between 0-13. Most of the respondents who were actually depressed were found to be having mild depression. They represented almost (20%) of the total population. (13.2%) were diagnosed with moderate depression with scores between 20-28. 4 respondents had severe depression.

Table 4. 3:   Summary of BDI Scores

		Frequency	Percent
	0-13: Minimal Range(Normal)	83	52.2
	14-19: Mild	31	19.5
Valid	20-28: Moderate	21	13.2
	29-63: Severe	4	2.5
	Total	139	87.4
Missing	System	20	12.6
Total		159	100.0

4.4.2 Prevelance of Depression Among the Respondents

From the BDI scores, the prevelance of depression among the respondents was established at 35.22% (see Fig 4.1). These respondents were diagnosed with mild to severe depression.

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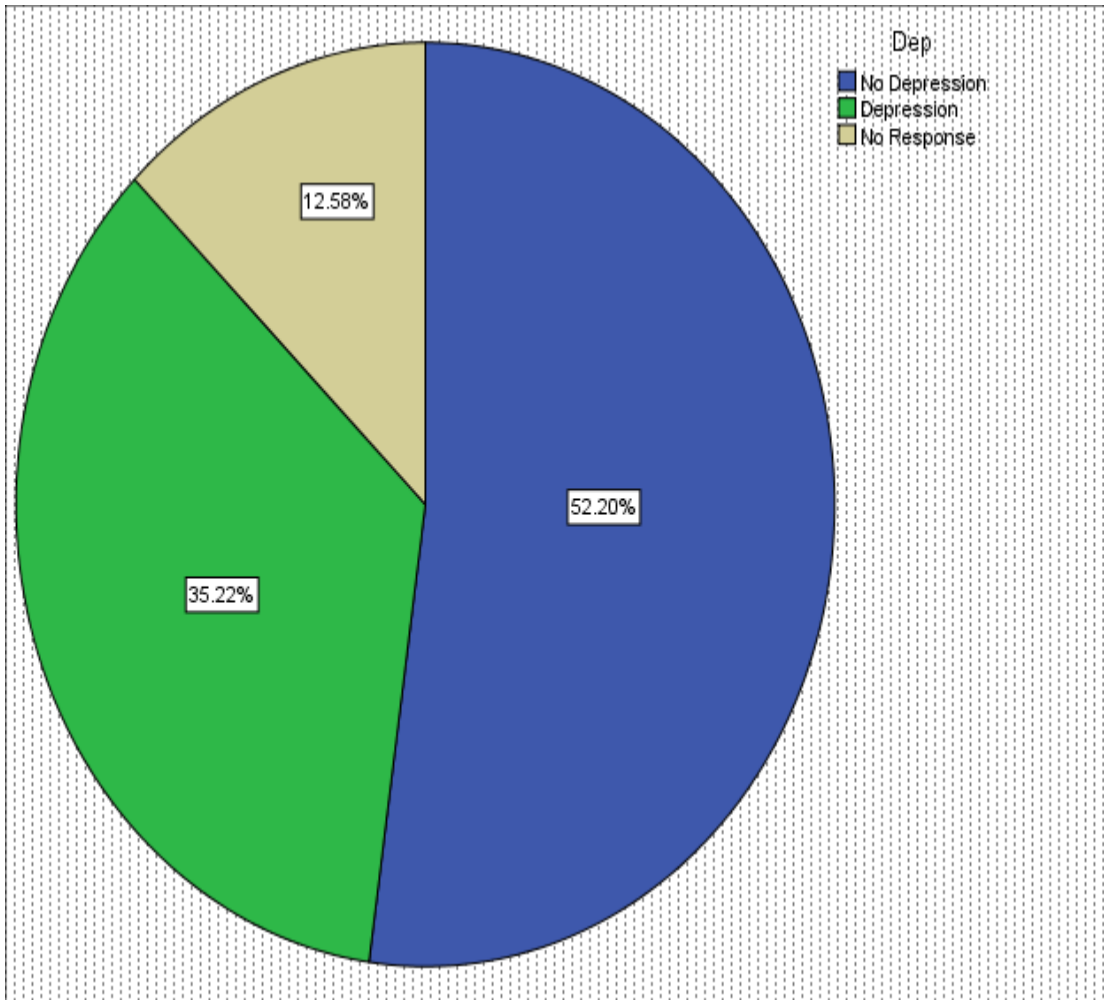
Figure 4. 1: Prevalence of Depression

4.5   Prevelance of Anxiety Among the Deaf in Nairobi East

4.5.1   Respondents Level of Anxiety

To determine the level of anxiety among the respondents, Becks Anxiety Inventory Assessment was used as per the scores indicated in Table 4.4. Most of the respondents (59.1%) were suffering from moderate anxiety with scores between 16 -25. Almost (11%) were diagnosed with mild anxiety. Only 4 respondents had no anxiety at all.

Table 4. 4:   Summary of BAI Scores

		Frequency	Percent
Valid	0-7 Minimal level (Normal)	4	2.5
	8-15: Mild	17	10.7
	16-25: Moderate	94	59.1
	26-63: Severe	9	5.7
	Total	124	78.0
Missing	System	35	22.0
Total		159	100.0

4.5.2   Prevelance of Anxiety

As indicated in Figure 4.2, the prevalence of Anxiety among the respondents was almost

75.47%. The prevelance was determined through the summation of mild to severe cases

amongst the deaf respondents.
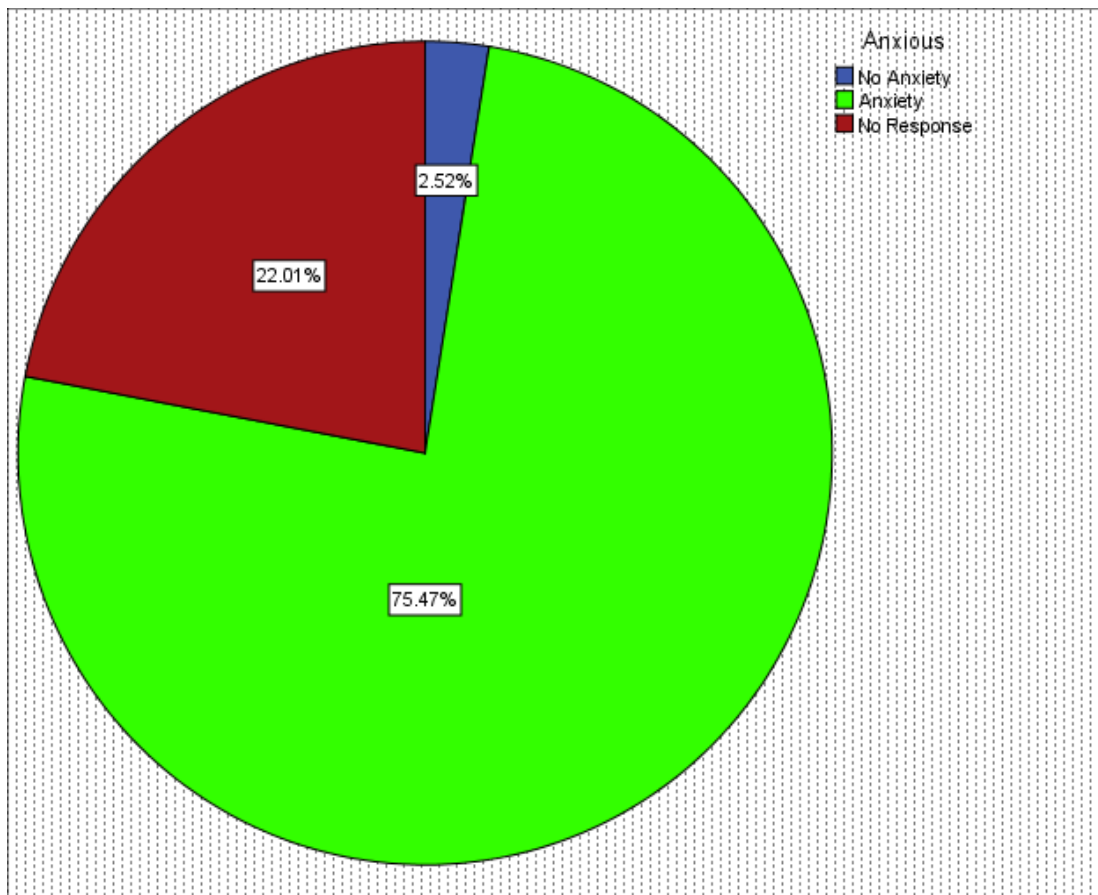
Figure 4. 2: Prevalence of Anxiety

4.6   Pattern of Alcohol Use among the Respondents

4.6.1   Respondents Level of Alcohol Use

To determine the pattern of alcohol use among the participants the AUDIT was used to assess their level of alcohol intake. As shown in Table 4.5; most of the respondents (44%) were at low risk level with scores between 0 to 7, 22% at risk for hazardous level with scores between 8 to 15. Almost (4%) of the respondents were at high risk or harmful level of alcohol use with scores between 16 to 19. Finally; (7.5%) were at high risk or dependent levels of alcohol use.

Table 4. 5:   Respondents AUDIT Scores

		Frequency	Percent
	0-7: low Risk	70	44.0
	8-15: Risk for hazardous level	35	22.0
Valid	16-19: High Risk or Harmful Level	6	3.8
	20 or More: high risk/ dependency likely	12	7.5
	Total	123	77.4
Missing	System	36	22.6
Total		159	100.0

4.6.2   Prevalence of Alcohol Use Disorders

The study aimed to establish the prevalence of Alcohol use disorders among the respondents and as shown in Figure 4.3, only 11.3% (this was determined by considering cases of high risk or harmful levels and dependency levels) of the respondents were found to have alcohol use disorder which was considerably low as shown in the next page.

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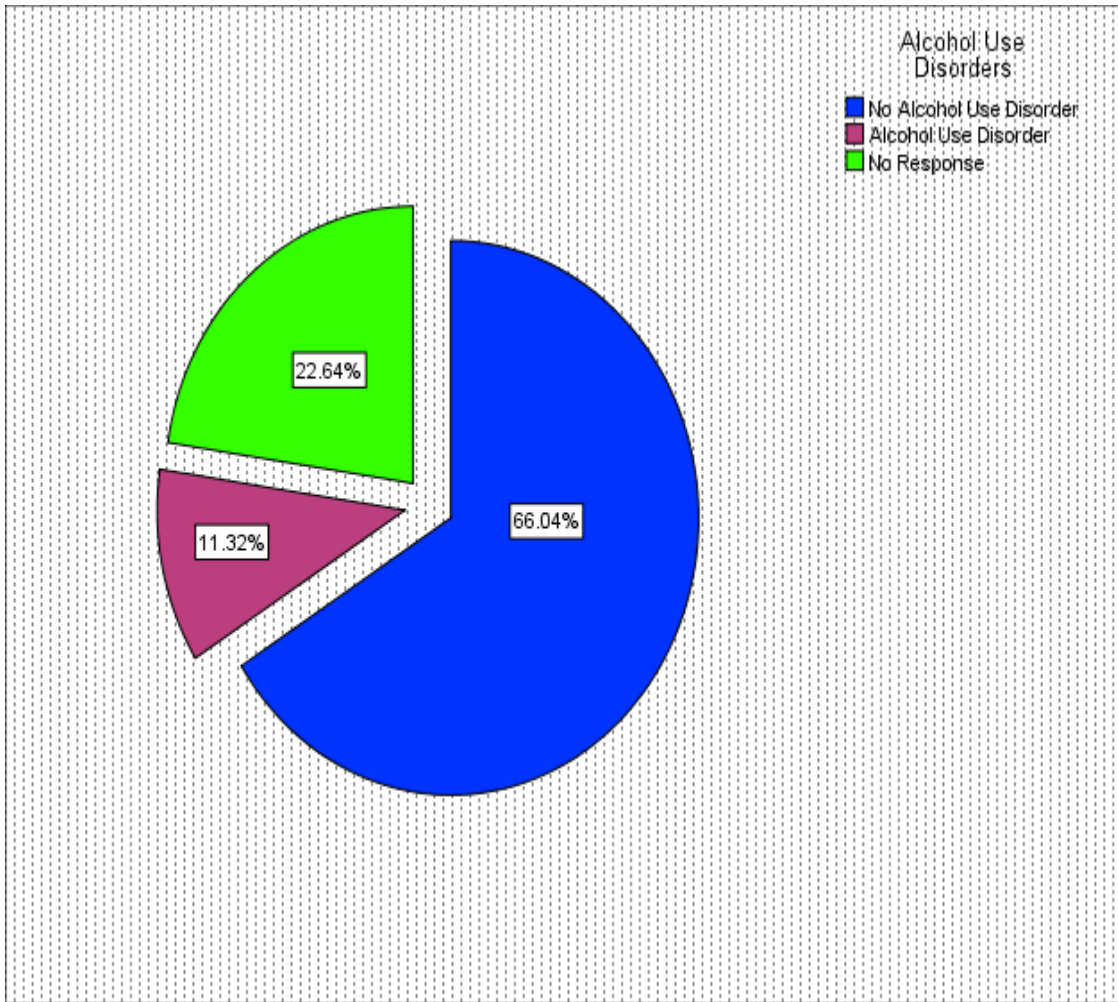
Figure 4. 3: Prevalence of Alcohol Use Disorders

4.7   Prevalence of Comorbid Depression and Anxiety among the Respondents

The study sought to establish the prevalence of comorbid depression and anxiety among the respondents and as indicated Figure 4.4, almost 52% of the respondents were found to be suffering from depression and anxiety. This was done by simply determining respondents that were suffering from depression and anxiety.
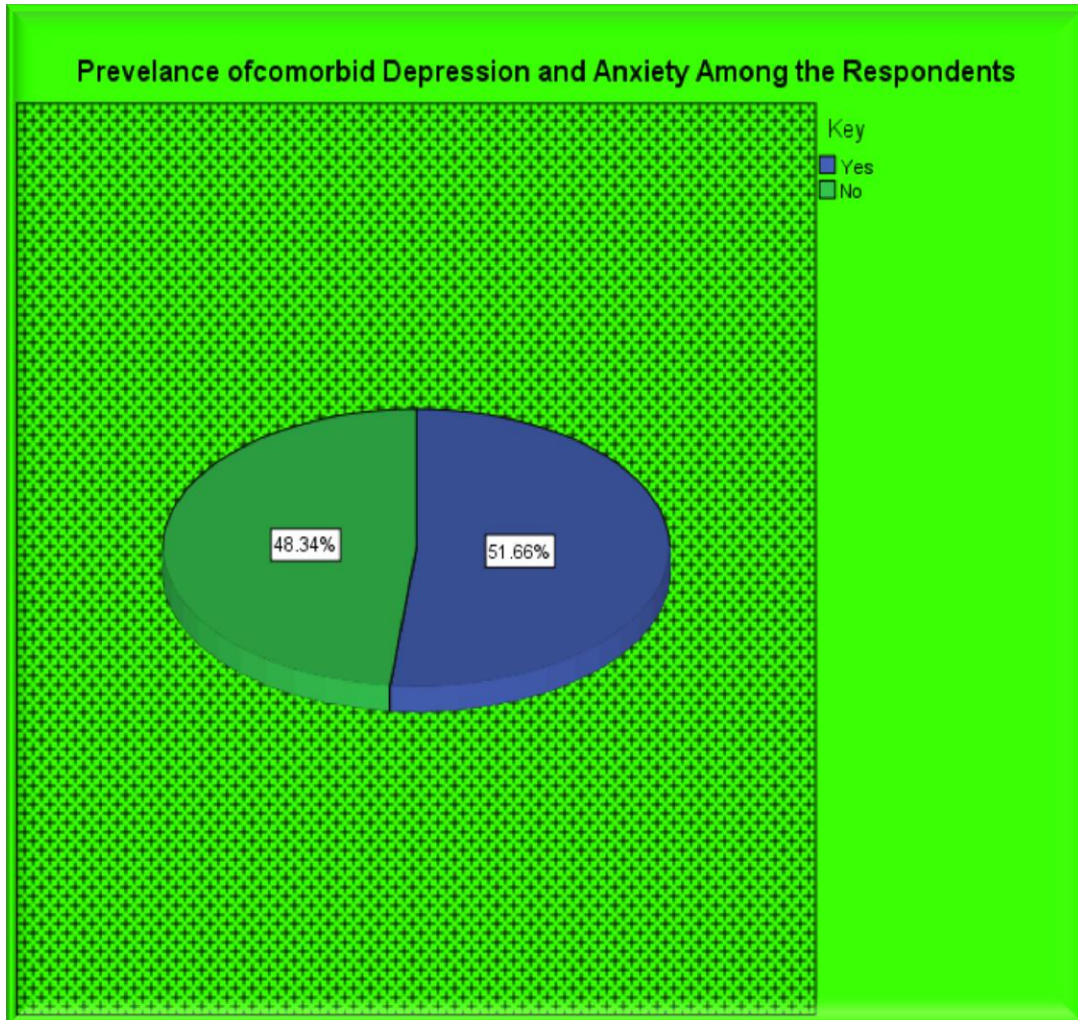
Figure 4. 4: Prevalence of Comorbid Depression & Anxiety

4.7 Association between Respondents' Depression and Anxiety Disorders

Pearson's chi-square was used to determine the association between variables. As indicated, the study sought to determine association between the respondents' level of depression and levels of anxiety; as shown in Table 4.6; there was no significant association between the two variables at a P value of 0.323.

Table 4. 6: **Association between Depression and Anxiety**

		Anxiety		Total	P Value
		No Anxiety	Anxiety		
Not Depression	Count	1	69	70	0.323
	% of Total	0.9%	61.1%	61.9%	
Depression	Count	2	41	43	
	% of Total	1.8%	36.3%	38.1%	
Total	Count	3	110	113	
	% of Total	2.7%	97.3%	100.0%	

4.8 Association between Respondents' Depression, Anxiety, Comorbid Depression/Anxiety and Alcohol Use Disorders

Table 4. 7: **Depression, Anxiety, Comorbid Depression/Anxiety and Alcohol Use Disorders**

			AUD Prevalence		Total	P value
			No AUD	AUD		
Not Depression		Count	53	10	63	0.221
		% of Total	49.1%	9.3%	58.3%	
Depression		Count	41	4	45	
		% of Total	38.0%	3.7%	41.7%	
Total		Count	94	14	108	
		% of Total	87.0%	13.0%	100.0%	
			AUD Prevalence		Total	P value
			No AUD	AUD		
No Anxiety		Count	4	0	4	0.531
		% of Total	3.8%	0.0%	3.8%	
Anxiety		Count	85	15	100	
		% of Total	81.7%	14.4%	96.2%	
Total		Count	94	15	104	
		% of Total	85.6%	14.4%	100.0%	
			AUD		Total	P value
			No AUD	AUD		
Depression & Anxiety	Yes	Count	66	4	70	0.001
		% of Total	55.9%	3.4%	59.3%	
	No	Count	35	13	48	
		% of Total	29.7%	11.0%	40.7%	
Total		Count	101	17	118	
		% of Total	85.6%	14.4%	100.0%	

The study also sought to determine association between the respondents' level of depression, levels of anxiety and comorbid anxiety and depression and alcohol use disorder; as shown in Table 4.7; there was no significant association between depression and alcohol use disorders at a P value of 0.221. There was also no significant association between anxiety and alcohol use disorders at a P value of 0.531. However, comorbid depression and anxiety was highly associated with alcohol use disorder at a P value of 0.001.

4.9   Association between Respondents' Socio-Demographics Profiles & Depression, Anxiety, Comorbid Depression& Anxiety, Alcohol Use Disorders

The study sought to determine association between respondents' socio-demographic profiles and their level of depression, anxiety, comorbid depression & anxiety, alcohol use disorders and as shown in Tables 4.8; the only socio-demographic variable that was significantly associated with depression was marital status at a P Value of 0.037. As for Anxiety; it was only significantly associated with income at a P Value of <0.001(See Table 4.9). Finally, as shown in Table 4.10, the sociodemographic variable, gender was significantly associated with Alcohol Use disorders at a P Value of 0.032.

Table 4. 8:   Association between Depression and Socio-Demographic Factors

		Marital Status		Total	P value
		Married	Single		
Not Depression	Count	33	49	82	0.037
	% of Total	23.9%	35.5%	59.4%	
Depression	Count	32	24	56	
	% of Total	23.2%	17.4%	40.6%	
Total	Count	65	73	138	
	% of Total	47.1%	52.9%	100.0%	

Table 4. 9:   Association between Anxiety and Income

		Income							Total	P Value
		19000-21999	13000-15999	10000-12999	6000-9999	3000-5999	<3,000	No income		
No Anxiety	Count	1	0	0	0	1	1	1	4	<0.001
	% of Total	0.8%	0.0%	0.0%	0.0%	0.8%	0.8%	0.8%	3.2%	
Anxiety	Count	0	2	5	41	51	4	17	120	
	% of Total	0.0%	1.6%	4.0%	33.1%	41.1%	3.2%	13.7%	96.8%	
Total	Count	1	2	5	41	52	5	15	124	
	% of Total	0.8%	1.6%	4.0%	33.1%	41.9%	4.0%	12.1%	100.0%	

Table 4. 10:   Association between Respondents Alcohol Use Disorders and Gender

			AUD		Total	P Value
			No Alcohol Use Disorder	AUD		
Gender	Male	Count	42	12	54	0.032
		% of Total	34.1%	9.8%	43.9%	
	Female	Count	63	6	69	
		% of Total	51.2%	4.9%	56.1%	
Total		Count	105	18	123	
		% of Total	85.4%	14.6%	100.0%	

4.10   Relationship between Depression, Anxiety & Alcohol Use

Correlation between these categorical variables was established using the Cramer phi coefficient (Cramer's V) which shows the strength of relationship with regards to the size of effect that the one variable could have on the other variable. From the Table 4.7; there was a weak relationship between depression and   anxiety. The same conclusion was observed between anxiety and alcohol use disorder with effect size being significantly very small of below 0.1(Cramer V). There was a slightly improved relationship between depression and alcohol use disorder but still weak as the Cramer V of 0.103 indicated a small effect of depression on Alcohol use. There was a strong relationship between comorbid Depression and Anxiety and Alcohol Use Disorders with the Cramer V of almost 0.3 indicating a strong effect size or impact of comorbid anxiety and depression on Alcohol Use Disorder.

Table 4. 11: Correlation between Variables

	Cramer's Phi (Cramer's V)
Depression & Anxiety	0.097
Depression & Alcohol Use Disorders	0.103
Anxiety & Alcohol Use Disorders	0.082
Comorbid Depression /Anxiety & Alcohol Use Disorders	0.299

CHAPTER 5: DISCUSSION, CONCLUSION & RECCOMMENDATIONS

5.1 Discussions

5.1.1 Socio-Demographic Characteristics of the Deaf

The study established that number of female respondents who were reportedly deaf were more (59.1%) than their male counterparts. Similar results were reported from a study conducted in Iran where the researchers sought to find out the prevalence of hearing impairment by age and gender in a population-based study (Ashghan, et al., 2017). This study found that 54.1% of the participants that were involved in the study were female. Another study conducted 9years earlier had reported that more males were affected compared to women. The study's main objective was to look into deafness and depression and interrelated factors. It was conducted in Lahore (Masud-Ul-Haq, et. al., 2008). The study also established that most of the respondents were single (either never married or married before but now separated/ divorced and widowed). Contrary to results, a study previously conducted in the USA reported that there was an increase in number of deaf people marrying amongst each other, thus making the chances of passing the genes that causes deafness two fold (News Medical Life Sciences, 2004).

As for the participants level of education, the current study reported that most of the respondents (44.7%) had attained college level of education. This was mainly for vocational studies such as tailoring, carpentry as well as vehicle mechanics. Twenty one point four percent having attained secondary school education and only 6.9% had no formal education. Contrary to these Masud-ul-haq et al., (2008), found that most respondents in their study had either low education or no formal education; 21% and 79% respectively. Finally the current study established that slightly over 50% of the respondents

were unemployed. This concurs more or less with findings by a study that was conducted in the USA to determine the barriers to employment for individuals that are deaf which reported that 46% of the deaf participants were unemployed (Perkins-Dock, Battle, Edgerton, & McNeill, 2015).

5.1.2 Prevalence of Anxiety and Depression morbidity among the Deaf

With regards to depression morbidity among the deaf particpants, the study established that 35.22% participants suffered from mild to severe depression. The prevelance was determined from their BDI scores. This concurs with results reported from previous studies. For instance, in a similar study conducted in USA in 2001 using BDI II, found that almost 50% had been diagnosed with depression. Of these 26% were reported to have suffered from major depressive disorder, while 30% were reported to have attended therapy for depression and 11% were curently in therapy with the same percentage being on antidepressants (Leigh & Anthony-Tolbert, 2001). In another study conducted among the deaf elderly established that 31% suffered from mild depressive symptoms. The Geriatric depression scale and Livingston's Sleep Scale were adopted for the study (Werngren-Elgström, Dehlin, & Iwarsson, 2003).

The current study also showed that depression was only significantly associated with marital status of the deaf adults. Results from a study carried out to determine the prevelance and associated factors and predictors of depression among adults in Selangor community in Malaysia showed that the predictors of depression were mainly psychological factors. These factors included, for example, work related stress and high perceived stress related to other issues, unhappy relationship with their children, spouse, issues related to their self esteem and serious financial constraints among other things. On

further analysis depression was highly associated with serious marital problems among the deaf (Maideen, Sidik, Rampal, & Mukhtar, 2014).

Mckenzie et al, (2011) found that adolescents with moderate to high levels of depression and anxiety had an increased likelihood of alcohol abuse or dependence in young adulthood. The risk factors resulted from changes in puberty, biological and/or psychological maturation and the challenges associated with gradually taking on adult roles. Psychosocial factors further contributed to the association.

However, most studies report association between depression among the deaf in different groups with other socio-demographic factors except marriage for example age and income. For instance in a study that was conducted only to ascertain depression prevelance among deaf respondents in the US; it was found that depression was related to the level of education, age and income and language used at home (Zazove, Meador, Aikens, Nease, & Gorenflo, 2006).

The current study also revealed that nearly 75.47% of the respondents had anxiety. Other studies have reported similar results for example, anxiety symptoms were found to have a correlation with disability (Brennes et al 2010). Participants were found to be vulnerable to anxiety as their perception of control and self - esteem was affected. According to the said study, the anxiety symptoms are triggered by factors such as meeting new people and struggling to keep up in conversations which can lead to embarrassment and can have long lasting effects on the individual(s). It would be correct to assume that anxiety levels are high in the deaf population because of this communication barrier.

Finally the current study revealed that 52% of repondents suffered from both disorders hence had comorbid depression and anxiety. This concurs with Kvam, Loeb and Tambs (2007) study on mental health in deaf adults where anxiety was also found to be coexistent with depressive disorders to a large extent compared to the hearing population. The Hopkins Symptom Checklist was used to determine the intensity of mental distress. According to Ryba & Hopco (2012); anxiety also contributes to onset, perpetuation and severity of depressive episodes.

5.1. 3 Prevalence of Alcohol Use Disorders Among the Deaf

The current study revealed that almost 12% of the participants suffered from alcohol use disorders. In a study carried out in Britain, to determine the extensive nature of alcohol use disorders in deaf psychiatric patients, reported that close to 30% of the respondents suffered from the disorder. The Alcohol Use Disorders Identification Tests-AUDIT was adopted for the study (Davidson, Drummond, Miller, Lard, & Kenneth, 2007). A comparative study, to assess whether there is a difference in the level of alcohol that deaf people and people with no difficulty hearing drink, noted that there no marked difference in prevalence between the two sets of respondents (Titus, Schiller, & Guthman, 2008).

The current study found that mostly men were affected by alcohol use. A possible reason for this is that, unlike females who present with internalizing disorders, males are more susceptible to externalizing disorders which include substance abuse. This is similar to studies that suggest more males than females exhibit alcohol use disorders (WHO 2017), with risk factors being anxiety, depression as well as negative life experiences. Ndetei et

al, (2013) found the risk level for alcohol use to be lower among female KMTC students as compared to their male counterparts, a finding consistent with the current study

5.1. 4 Relationship Between Depression, Anxiety And Alcohol Use Disorders

The current study revealed no marked relationship between depression and alcohol use disorders. There also did not exist a notable association between anxiety and alcohol use disorders. In contrast a study by Giaconia et al (2003) reported a significant association between these variables. More importantly it has been noted that there is no significant difference on the drinking patterns among individuals with disabilities and those without. However, a slightly higher risk of alcohol use disorder when suffering from a disability was noted. This is due to the increased levels of trauma and victimization associated with alcohol and substance use among this population and is also associated with increasing levels of depression and anxiety. This explains why this current study reported that comorbid depression and anxiety was highly related with alcohol use disorder. A study by Boschloo et al, 2011 found that 20.3% of respondents with combined anxiety/depression showed alcohol dependence as compared to 5.5% of controls. The male gender, susceptability factors such as family history of alcohol reliance or anxiety/depression as well as being single were termed as risk indicators.

The researcher also found a situation among the deaf whereby as they form romantic relationships, once they break up, they have a tendency to start another romantic relationship with a friend to the previous lover. As a result, the investigator was curious to check sexual trends of the deaf and their reaction to the sexually transmitted infections and

psychological implications that may arise from such unions. This would form an area of future study.

5.2   Conclusions

This chapter provides conclusions of the major findings of this study as discussed in the previous chapters. The current study revealed no marked relationship between depression and alcohol use disorder as well as there did not exist a notable association between anxiety and alcohol use disorders. The current study, however, reported that comorbid depression and anxiety was highly related with alcohol use disorder.

The findings demonstrate that among the deaf in Nairobi east, there are a considerable number of them that suffer from anxiety, depression and alcohol use disorder. One of the factors associated with the prevalence was communication barriers leading to the deaf persons feeling isolated as a result of the stigma they experience and a lack of health care geared towards their needs.

5.3   Recommendations

This section of the study is considered important because it illuminates the possible

Intervention's required to address the challenges facing the deaf and hard of hearing.

1. *Training sign language interpreters*: this can be done using two approaches; 1) whereby the actual healthcare team or, 2) a third party, not necessarily in health care, but for the purposes of interpreting for the deaf who present to hospital settings, are trained in the Kenyan sign language to ease the communication barrier.

2. *Mental health care*: this should take a bio-psychosocial approach whereby the

challenges facing the deaf persons are identified and interventions made so as to wholesomely help the deaf person(s). As has been mentioned earlier, the deaf do not enjoy equal opportunities with their hearing counterparts.

3. *Awareness creation*: through the media and any other possible outlet, the general population should be made aware of the challenges faced by deaf persons as concerns mental health and this should be done in a way that decreases stigma by involving the deaf persons as well and encouraging persons to come out and support their cause for improved provision of mental health.

4. *Persons who are deaf database*: this should be done properly so as to capture the correct figures/ numbers of persons who are deaf that will aid in planning and distributing the much needed resources for the deaf persons. This can be done in consultation with the relevant NGOs already present.

5. *Education*: by having sign language interpreters assigned to deaf students, this can ensure that the deaf students get an opportunity for proper education so they can also pursue their dreams in careers such as medicine, law, technology among others. This provides a level playing field together with those of the hearing community. Also for the educational structure not alienating the deaf by way of instruction such that they do not comprehend 'normal' English, which is used in instruction of other professions (which are not vocational training)

6. *Policy formulation*: will be useful for policy makers interested in formulating policies to ensure further research is carried out on matters that affect the deaf persons and therefore ensure gaps are identified and ideas on how to improve them brought forward and implemented. This will lead to provision of equal

opportunities for the citizens of our country.

5.4   Suggestion for Further Studies

One of the main limitations of the study was lack of back-translated tools that would adequately serve to help the deaf understand the study better. Back-translation in this regard meant for instance the Beck Depression Inventory into Kenyan sign language and having a sign language interpreter translate it to the common English language to check if the initial translation was correctly done. This would be done to ensure reliability and validity of the back-translation. The study therefore suggests that a further study be carried out using tools that are translated into sign language and back translated into Engllish. The assumption is that they would provide better overview on the prevalence of both disorders in this group of respondents.

REFERENCES.

Aboge, F.A. Obondo, A., Kathuku, A., Kibuule, D. (2015) The Prevalence of Depressive
    Symptoms among Sensory and Physically Challenged Persons Living with
    HIV/AIDS Attending Clinics in Nyanza Province, Kenya. Journal of Depression and
    Anxiety 4: 1000176. doi:10.4172/2167-1044.1000176P

American Psychiatric Association (2013): Diagnostic and Statistical Manual of Mental
    Disorders, Fifth Edition. Arlington, VA, American Psychiatric Association, 2013

Asghari, A., Farhadi, M., Daneshi, A., Khabazkhoob, M., Mohazzab-Torabi, S., Jalessi,
    M., & Emamjomeh, H. (2017). The Prevalence of   Hearing Impairment
    by Age and   Gender in a Population-based Study. *Iranian   Journal of
    Public Health*, *46*(9), 1237–1246.

Who is this blogger, A. (2018). Who is this blogger, anyway?. [online]
    Deafexpressions.blogspot.com. Available at:
    http://deafexpressions.blogspot.com/p/who-is-this-blogger-anyway.html [Accessed 30th
    March, 2015].

Centers for Disease Control and Prevention. (2018). Free Materials | Hearing Loss |
    NCBDDD | CDC. [online] Available at:
    https://www.cdc.gov/ncbddd/hearingloss/freematerials.html [Accessed 31 March, 2015.
    2018].

Chavira, D., Stein, M., Bailey, K. and Stein, M. (2004). Child anxiety in primary care: Prevalent
but untreated. Depression and Anxiety, 20(4), pp.155-164.

Dhcas.gov.hk. (2015). [online] Available at:
    https://www.dhcas.gov.hk/english/public_edu/files/SeriesI_HearingImpairment_E
    ng.pdf [Accessed 30 March 2015].

Cole,P., Zdanowicz,N. 2010: Does it exist?: "A psychopathology of deafness"Psychiatria
Danubina; Vol. 22, Suppl. 1, pp 114–116 © Medicinska naklada - Zagreb, Croatia

Daily Nation Newspaper article, August 31,2015: Kenya facing shortage of skilled sign
language teachers: retrieved 22nd February 2018,
https://www.nation.co.ke/news/education/Kenya-lacks-teachers-for-the-
deaf/2643604-2853528-u4k8a2z/index.html

Ethnologue. (2015). Kenyan Sign Language. [online] Available at:
https://www.ethnologue.com/language/xki [Accessed 30 March, 2015].

Fellinger, J., Holzinger, D., Dobner, U., Gerich, J., Lehner, R., Lenz, G. and Goldberg, D.
(2005). Mental distress and quality of life in a deaf population. Social Psychiatry and
Psychiatric Epidemiology, 40(9), pp.737-742.

French, R.2004: http://www.tahperd.org/LINKS/links_pdfs/APE%20factsheets/Hearing_
Impairment.pdf (retrieved on 28th March, 2015)

Grant, M. (2015). Beck Anxiety Inventory Explanation. [online] Manchester.gov.uk.   Available
at: https://www.manchester.gov.uk/download/downloads/id/19268/

beck_anxiety_inventory_explanation.pdf [Accessed 28 March, 2015].

Guthmann, D. (2000). Identifying and Assessing Substance Abuse Problems with Deaf,
Deafened, and Hard of Hearing Individuals.. [online] Files.eric.ed.gov. Available
at: https://files.eric.ed.gov/fulltext/ED452650.pdf [Accessed 28 Mar. 2015].

Guthmann, D., & Blozis, S. A. (2001). Unique issues faced by deaf individuals entering
substance abuse treatment and following discharge. American Annals of the Deaf,
146(3), 294-304.

Guthmann, D., & Sandberg, K. A. (2015) Assessing substance abuse problems with deaf
and hard of hearing students. Minneapolis, MN: The Minnesota Chemical
Dependency Program for Deaf and Hard of Hearing Individuals. Available:
http://www.mncddeaf.org/articles/students_ad.htm(retrieved on 28th March,
2015)

Guthmann, D. and Sandberg, K. (2015). Providing Substance Abuse Treatment to Deaf   and
Hard of Hearing Clients. [online] Mncddeaf.org. Available at:
http://www.mncddeaf.org/articles/treatment_ad.htm [Accessed 28 Mar. 2015].

Guthmann, D. and Graham, V. (2015). Substance Abuse: A Hidden Problem Within the   D/deaf
and Hard of HearingCommunities. [online] Mncddeaf.org. Available at:
http://www.mncddeaf.org/articles/hidden_ad.htm [Accessed 28 Mar. 2017].

 Clinical Tools, Inc (CTI) (2015).http://www.opioidrisk.com/node/953 (retrieved on 28th
March, 2015)

Explorable.com. (2009). Sample Size - The Number of Observations in Research. [online]
Available at: https://explorable.com/sample-size [Accessed 27 Mar. 2015].

Infotrack, 2015: Nairobi County. Available http://www.infotrackea.co.ke/services/
leadership/countyinfo.php?cinf=constituencies&t=47 (retrieved on 28th March,
2015)

James Madison University, Psychology department: Psyc.jmu.edu. (2015). [online]
Available at: http://www.psyc.jmu.edu/school/documents/Deafness.pdf [Accessed
28 Mar. 2015].

Levin, R (2013): Anxiety.org: Anxiety More Common In Deaf People (retrieved on 28th
     March, 2015)

Anxiety.org. (2015). Why Anxiety Is More Common In Deaf People. [online] Available at:
     https://www.anxiety.org/anxiety-more-common-in-deaf-people [Accessed 28 Mar.
     2015].

Kvam, M., Loeb, M. and Tambs, K. (2006). Mental Health in Deaf Adults: Symptoms of Anxiety
     and Depression Among Hearing and Deaf Individuals. Journal of Deaf   Studies and
     Deaf Education, 12(1), pp.1-7.

Li, C., Zhang, X., Hoffman, H., Cotch, M., Themann, C. and Wilson, M. (2014). Hearing
     Impairment Associated With Depression in US Adults, National Health and Nutrition
Examination Survey 2005-2010. JAMA Otolaryngology–Head & Neck   Surgery, 140(4), p.293-
302 doi:10.1001/jamaoto.2014.42.

Malhautra, S. (2015) http://www.articleslash.net/Health-and-Fitness/Ears-
     Hearing/596263__What-does-hearing-loss-mean-Levels-of-hearing-loss- Audiogram.html
(retrieved on 28th March, 2015)

Ryba, M. and Hopko, D. (2012). Gender Differences in Depression: Assessing   Mediational
     Effects of Overt Behaviors and Environmental Reward through Daily   Diary
     Monitoring. Depression Research and Treatment, 2012, pp.1-9.

Masud-Ul-Haq, M., Shahid, H., Saqib, K. and Khalid, M. (2008). Deafness and   Depression.
     [online] Thebiomedicapk.com. Available at:
     http://www.thebiomedicapk.com/articles/131.pdf [Accessed 28 Mar. 2015].
     Biomedica Vol.24 Jul.-Dec.2008 pgs. 143-146

McIntyre, M. (2015). Beck Depression Inventory. [online] Academicdepartments.musc.edu.
Available at: http://academicdepartments.musc.edu/family_medicine/rcmar/beck.htm
        [Accessed 31 Mar. 2015].

Monzani, D., Galeazzi, G., Genovese, E., Marrara, A., & Martini, A. (2008). Psychological
        profile and social behaviour of working adults with mild or moderate hearing
        loss. Acta Otorhinolaryngologica Italica, 28(2), 61–66.

Muntingh, A. D., van der Feltz-Cornelis, C. M., van Marwijk, H. W., Spinhoven , P.,   Penninx ,
B. W., & van Balkom , A. J. (2011). Is the beck anxiety inventory a   good tool to
assess the severity of anxiety? A primary care study in The Netherlands study of depression and
anxiety (NESDA). BMC Family Practice, 12, 66. http://doi.org/10.1186/1471-2296-12-66

Mweri, G.: http://www.ajol.info/index.php/jolte/article/viewFile/41781/37140 (retrieved   30th
        March, 2015)

Jefwa, G. (2009). Structural borrowing: The case of Kenyan Sign Language (KSL) and   Kiswahili
contact signing. Journal of Language, Technology & Entrepreneurship   in Africa, 1(2). 160-174

Naami A (2015). Disability, gender, and employment relationships in Africa: The case of Ghana.
        African Journal of Disability. 2015; 4(1):95. doi:10.4102/ajod.v4i1.95.

Ndetei, D., Khasakhala, L., Ongecha-Owuor, F., Kuria, M., Mutiso, V. and Kokonya, D.   (2009).
        Prevalence of Substance Abuse Among Patients in General Medical   Facilities in
        Kenya. Substance Abuse, 30(2), pp.182-190.: Taylor and Francis

NIH. (2014). Hearing Problems and Deafness | Hearing Loss | MedlinePlus. [online] Available at:
        https://medlineplus.gov/hearingdisordersanddeafness.html [Accessed 29 Mar. 2015].

Ohre, B., Von Tetzchner, S. and Falkum, E. (2011). Deaf adults and mental health: A review of recent research on the prevalence and distribution of psychiatric symptoms and disorders in the prelingually deaf adult population. [online] Tararogersinterpreter.com. Available at: http://www.tararogersinterpreter.com/uploads/1/0/3/7/103709790/beate_999_1__deaf_adults_and_mental_health-psychiatric_symptoms_and_disorders_in_deaf_population.pdf [Accessed 21 May 2015].

Oishi N, Schacht J. Emerging treatments for noise-induced hearing loss. Expert opinion on emerging drugs. 2011; 16(2):235-245. doi:10.1517/14728214.2011.552427.

Paden, C.; Humphries, T. (Tom L.) (2005). Inside Deaf Culture. Cambridge, MA: Harvard University Press. p. 1. ISBN 0-674-01506-1.Correll, J. (2005). Inside deaf culture. Carol Padden, Tom Humphries, Harvard University Press, 2005, ISBN 0-674-01506-1. Deafness & Education International, 7(4), pp.223-224.

Padden, C; Humphries, T. (1988). Deaf in America: Voices from a Culture. Harvard University Press. p. 134. ISBN 0-674-19423-3.

Padden, C. and Humphries, T. (1989). Deaf in America. Ear and Hearing, 10(2), p.139.

Pepnet Tipsheet: http://www.rit.edu/ntid/radscc/system/files/deaf_culture_tip_sheet.pdf (retrieved 30th March, 2015) prevalent but untreated. Depress Anxiety 2005; 20:155–164.

Pearson Clinical: http://www.pearsonclinical.com/psychology/products/100000251/beck- anxiety-inventory-bai.html (retrieved 28th March, 2015)

Psych Congress: http://www.psychcongress.com/saundras-corner/scales-
screenersdepression/beck-depression-inventory-ii-bdi-ii (retrieved 28th March,   2015)

Rubin, J. (2003). Deafness and chemical dependency. Deaf Rochester News, 7(1):1-3

Ryan, C. (2015):https://vestibular.org/news/09-13-2012/link-between-untreated-hearing-
loss-mental-health (retrieved 28th March, 2015)

Steitler K., & Rubin, J. L. (2001). Deafness and chemical dependency: A paper.   Rochester, NY:
Rochester Institute of Technology, Substance and Alcohol   Intervention Services
for the Deaf. Available: http://www.rit.edu/~257
www/tips/paper.html

Theunissen, S., Rieffe, C., Kouwenberg, M., De Raeve, L., Soede, W., Briaire, J. and
Frijns, J. (2012). Anxiety in children with hearing aids or cochlear implants
compared to normally hearing controls. The Laryngoscope, 122(3), pp.654-659.

Titus, J.C. & White, W.L. (2009). Substance use among youths with hearing loss: A
primer for student assistance professionals.   Student Assistance Journal, 20(3),   14-18.

Turner, R. and Beiser, M. (1990). Major Depression and Depressive   Symptomatology among
the Physically Disabled. The Journal of Nervous and Mental Disease, 178(6), pp.343-350.

World Health Organization. (2015). Deafness and hearing loss. [online] Available at:
http://www.who.int/en/news-room/fact-sheets/detail/deafness-and-hearing-loss
[Accessed 15 Mar. 2015].

World Health Organization. (2015). Screening and brief intervention for alcohol problems in
        primary health care. [online] Available at:
        http://www.who.int/substance_abuse/activities/sbi/en/ [Accessed 28 Mar. 2015].

Zadeh, M. and Selesnick, S. (2001). Evaluation of hearing impairment. Comprehensive   Therapy,
27(4), pp.302-310.

Zazove, P., Meador, H., Aikens, J., Nease, D. and Gorenflo, D. (2006). Assessment of
        Depressive Symptoms in Deaf Persons. The Journal of the American Board of   Family
Medicine, 19(2), pp.141-147.

Valdisteno, N. (2014). Nicoletta Valdisteno – Deafness in Kenya: The Silent Struggle –
        News Photographers Association of Canada. [online] Npac.ca. Available at:
        http://npac.ca/2014/06/nicoletta-valdisteno-deafness-in-kenya-the-silent-struggle/
        [Accessed 28 Mar. 2015].

The African Annals of the Deaf, 2015: http://www.firsteternal.com/africanad
        _founders.html (retrieved 28th March, 2015)

Ilo.org. (2015). [online] Available at: https://www.ilo.org/wcmsp5/groups/public/@ed_
        emp/@ifp_skills/documents/publication/wcms_115097.pdf [Accessed 16 Sep.   2015].

Maxwell-McCaw, D. and Zea, M. (2011). The Deaf Acculturation Scale (DAS): Development
        and Validation of a 58-Item Measure. Journal of Deaf Studies and Deaf Education,
         16(3), pp.325-342.

Gopinath B, Wang JJ, Schneider J. Depressive symptoms in older adults with hearing
        impairments: the Blue Mountains Study. J Am Geriatric Soc. 2009; 57(7):1306–
        1308.   [PubMed: 19570163]

Carter J.M and Mireles, C.D. Deaf Identity and Depression: New Directions in Identity
        Theory and Research, 2016.DOI:10.1093/acprof:oso/9780190457532.003.0018

Brenes, G.A, Penninx, B.W, Judd, P.H, Rockwell. E, Sewell. D, and Wetherell. J.L, 2010:
         Anxiety, Depression, and Disability Across the Lifespan, Aging Ment Health.
         2008 Jan; 12(1): 158–163. doi: 10.1080/13607860601124115 PMCID

        : PMC2879640 NIHMSID: NIHMS206854

Maria McKenzie, Anthony F Jorm, Helena Romaniuk, Craig A Olsson and George C
        Patton Med J Aust 2011; 195 (3 Suppl): S27. Published online: 2011-08-01

Matheka, C., Karanja, J., Ndetei, D. and Muriungi, S. (2018). Alcohol and substance
        abuse risk among students at the Kenya Medical Training College. [online]
        University of Nairobi Personal Websites. Available at: https://profiles.uonbi
        .ac.ke/ndetei/publications/alcohol-and-substance-abuse-risk-among-students-
        kenya-medical-training-college [Accessed 8 Aug. 2018].

Boschloo, L., Vogelzangs, N., Smit, J., van den Brink, W., Veltman, D., Beekman, A. and
        Penninx, B. (2011). Comorbidity and risk indicators for alcohol use disorders
        among persons with anxiety and/or depressive disorders. Journal of Affective
        Disorders, 131(1-3), pp.233-242.

APPENDIXES.

Appendix 1 a): Informed Consent Explanation.

ASSESSMENT OF ASSOCIATION BETWEEN ANXIETY, DEPRESSION AND ALCOHOL USE DISORDERS AMONGST THE DEAF IN NAIROBI EAST

Hallo,

My name is Naomi Idah Anyango a student at the University of Nairobi. As part of requirements for award of a Master of Science in Clinical Psychology degree, I am required to carry out a study. I have chosen the area of Deaf Mental Health and as such my study is on "*assessment of association between anxiety, depression and alcohol use disorders amongst the deaf in Nairobi east*".

I am asking you to take part in this study because you are registered in the Deaf Empowerment Kenya (D.E.K) register as a beneficiary of DEK services and was contacted as a potential respondent in this study. Please read this form carefully before agreeing to take part in the study.

The purpose of this study is to determine the association between anxiety, depression and alcohol use disorders among the deaf in Nairobi East.

If you agree to take part in this study, I will conduct an interview with you. The interview will ask questions such as when were you declared as Deaf, your current residence, your level of Deafness, have you ever used alcohol before amongst other questions. This interview will take between 45 minutes to 1 hour.

There will be a professional Kenyan Sign Language interpreter to assist in any possible way that may arise.

I do not anticipate any risks to you participating in this study other than those encountered in day-to-day life.

The benefits that you may derive from this study may include an opportunity to know of the signs and symptoms of anxiety, depression and alcohol use disorders. For those found to be suffering from any of these conditions, they will be referred for further treatment.

A long term benefit may include presentation of the study findings to the stakeholders involved in disability mainstreaming and as such formulation of policy to cater to the psychological needs of the Deaf in Nairobi and Kenya in general.

You will be compensated the fare used to get to the interview location.

The records of this study will be confidential. In any report made public, I will not include any information that will make it possible to identify you. Only the researcher will have access to the records.

Taking part in this study is completely voluntary. If you decide to take part, you are free to withdraw at any time. If you decide to withdraw you will not lose or be denied any services you are currently enjoying.

The researcher conducting this study is Naomi Idah Anyango. Please ask any questions you have now. Should you have questions later, you may contact me on 0720 216 735 or at anyangonomy@yahoo.com

You can also contact the KNH/UoN ethics and research committee in case of any queries to the research on:

Contact Person

Professor M. L. Chindia

Executive Secretary, KNH-UoN ERC

Appendix 1 b): Maelezo Kuhusu Idhini.

<u>TATHMINI YA CHAMA KATI YA WASIWASI, HUZUNI NA MATATIZO YA MATUMIZI YA POMBE MIONGONI MWA VIZIWI MJINI NAIROBI MASHARIKI.</u>

Habari,

Jina langu ni Naomi Idah Anyango mwanafunzi katika Chuo Kikuu cha Nairobi. Kama sehemu ya mahitaji kwa ajili ya tuzo shahada ya pili ya Sayansi Saikolojia, ninahitajiwa kufanya utafiti. Nimechagua eneo la Afya ya Akili ya Viziwi kama utafiti wangu kama ni juu ya 'tathmini ya chama kati ya wasiwasi, huzuni na matatizo ya matumizi ya pombe miongoni mwa viziwi mjini Nairobi mashariki'.

Ninakuuliza kushiriki katika utafiti huu kwa sababu wewe ni msajiliwa katika Deaf Empowerment Kenya (DEK) umeandikishwa kama walengwa wa huduma za DEK na umechaguliwa kama kujibu uw katika utafiti huu. Tafadhali soma fomu hii kwa makini kabla ya kukubali kushiriki katika utafiti.

Madhumuni ya utafiti huu ni kuamua chama kati ya wasiwasi, huzuni na matatizo ya matumizi ya pombe miongoni mwa viziwi mjini Nairobi Mashariki.

Kama utakubali kushiriki katika utafiti huu, nitafanya mahojiano nawe. Mahojiano itakuwa kuuliza maswali kama vile wakati ulitangazwa kuwa kiziwi, makazi yako ya sasa, kiwango chako cha uziwi, na umeshawahi kutumia pombe kabla miongoni mwa maswali mengine. Mahojiano haya itachukua kati ya dakika 45 hadi saa 1.

Kutakuwa na mtaalamu wa lugha ya ishara ya Kenya ili kusaidia katika njia yoyote itakayotokea.
Sitarajii hatari yoyote kwako unaposhiriki katika utafiti huu zaidi kuliko yanayojitokeza siku hadi siku maisha.

Faida unaoweza kupata kutokana na utafiti huu ni pamoja na fursa ya kujua ishara na dalili za wasiwasi, huzuni na matatizo ya matumizi ya pombe. Kwa wale kupatikana kwa kuwa wanaosumbuliwa na yoyote ya masharti hayo , wataweza kuelekezwa kwa matibabu zaidi.

Faida ya muda mrefu ni pamoja na kuwasilisha matokeo ya utafiti kwa wadau wanaohusika katika kuingiza masuala ya ulemavu na kama vile uundaji wa sera ya kuhudumia mahitaji ya kisaikolojia ya Viziwi mjini Nairobi na Kenya kwa jumla.

Utapata fidia nauli uliotumia kufika eneo la mahojiano

Rekodi ya utafiti huu itakuwa siri. Katika ripoti itakayotolewa kwa umma, sitaijumuisha rekodi itakayo kutambua wewe. Mtafiti tu ndiye ataweza kuwa na rekodi hizo.

Kushiriki katika utafiti huu ni kwa hiari yako. Utakapo amua kushiriki katika utafiti, uko huru kuondoka wakati wowote. Kama utaamua kuondoka hautapoteza au kukataliwa huduma yoyote unayoifurahia sasa.

Mtafiti anayefanya utafiti huu ni Naomi Idah Anyango. Tafadhali uliza swali uliyo nayo sasa. Ukiwa unataka kuuliza swali baadaye, unaweza kuwasiliana na mimi kwa nambari ya simu 0720 216 735 au barua pepe anyangonomy@yahoo.com
Unaweza pia kuwasiliana KNHUoN kamati ya maadili na utafiti iwapo utakuwa na maswali yeyote. Unaweza kuwasiliana nayo katika:

Mtu wa kuwasiliana:
Professor M. L . Chindia
Katibu Mtendaji, KNH-UoN ERC

Appendix 2 a): Consent Form.

I, the undersigned, do hereby volunteer to participate in this study, whose nature and purpose have been fully explained to me by Naomi Idah Anyango. I understand that all the information gathered will be used for the purposes of this study only.

Respondent…………………………… Signed………………………………….. Date……........

Naomi Idah Anyango……………………. Signed…………………………… Date…………

Appendix 2 b): Fomu ya Idhini

Mimi, aliyetia, kufanya hili kujitolea kushiriki katika utafiti huu, ambao asili na madhumuni yake nimeelezewa kikamilifu kwangu na Naomi Idah Anyango. Naelewa kwamba taarifa zote zilizokusanywa zitatumika kwa madhumuni ya utafiti huu pekee.

Kujibu...Saini…………………….
Tarehe……………….............

Naomi Idah Anyango......................... Saini ....
Tarehe......................................

Consent by DEK Director.

I…………………………………….. being the head of …………………………………… and having been explained the nature of the study by Naomi Idah Anyango of P.O Box 28484-00200 and cellphone number 0720 216 735, in a written consent, do hereby give consent for the Deaf persons who are registered with this organization to participate in the study. I have also been made to understand that I can withdraw this consent any time before the data collection should I find the exercise inconsistent with the agreed terms as explained to me before the study.

Mimi………………………………..kuwa mkuu wa .... na baada ya kuelezwa asili ya Utafiti unaofanywa na Naomi Idah Anyango Sanduku la posta 28484-00200 na simu za mkononi idadi 0720 216 735, katika ridhaa ya maandishi hili, kutoa ridhaa kwa ajili ya watu Viziwi ambao wamesajiliwa na shirika hili kushiriki katika utafiti. Ninaelewa kwamba naweza kuondoa ruhusa hii wakati wowote kabla ukusanyaji wa takwimu, iwapo nitapata zoezi haiendani na suala iliokubaliwa kabla ya utafiti.

Name/ Jina……………………………………………………………………………

Signature/
Sahihi…………………………………………………………………………..

Date/
Tarehe…………………………………………………………………………..

Witnessed by/ kimeshuhudiwa na:

Name/ Jina……………………………………………………………………

Signature/ Sahihi…………………………………………………………....…..

Date/ Tarehe…………………………………………………….………………

Appendix 3: Socio-demographic Data Questionnaire.

A) <u>Socio-Demographic</u>

1. What is your sex?

Male ☐   Female ☐

2. How old are you_____

3. What is your marital status?

Married ☐   Widowed ☐ Divorced ☐ Separated ☐ Never ☐
married

4. What is the highest degree or level of school you have completed? If currently enrolled,
mark the previous grade or highest degree received.

- o No schooling complete
- o K.C.P.E certificate
- o K.C.S.E certificate
- o Technical college certificate (tailoring, hairdressing, mechanic etc…)
- o Bachelor's Degree
- o Other(please specify)_____

5. Are you currently employed?

Yes ☐   No ☐

6. What is your total household income in Kenyan Shillings?

- o No income
- o Less than 3,000
- o 3,000 to 5,999
- o 6,000 to 9,999
- o 10,000 to 12,999
- o 13,000 to 15,999
- o 16,000 to 18,999
- o 19,000 to 21,999
- o 22,000 or more

7. If not employed who do you depend on for financial support_____

8. Where do you currently live? _____

9. Is your current residence:

o   Owned by you or someone in this household free and clear (without a mortgage or loan/inherited)?

o   Rented for cash rent?

o   Occupied without payment of cash rent?

10. How long have you been living there?

less than 6 months ☐   6months-2years ☐   2-5 years ☐   5-10 years ☐

more than 10 years ☐   all my life ☐

B) Psycho-Social

11. Were you born Deaf?

Yes ☐   No ☐

12. At what age were you first diagnosed with hearing loss?

   o   Less than 3 years

   o   Between 3-5 years

   o   Between 6-12 years

   o   Other (please specify)_____

13. What caused your hearing loss? _____

14. Your hearing loss was diagnosed as:

   o   Mild (difficulty in keeping up with conversations, especially in noisy surroundings)

   o   Moderate (difficulty keeping up with conversations when not using a hearing aid)

- o Severe (use powerful hearing aids , rely on lip reading as well as sign language use)

- o Profound (hard of hearing and rely on lip reading and/or sign language

15. Since you were diagnosed as deaf, have you ever felt like you are treated differently?

Yes ☐   No ☐

Please
explain…………………………………………………………………………………………
………………………………………………………………………………………………………
………………………………………………………………………………………………………
……………………………………………………………………………………………………….

16. Are sign language interpreters easily available to you?

Yes ☐   No ☐

17.Are you able to easily access information regarding health issues?

Yes ☐   No ☐

Appendix 4 a): Beck Depression Inventory. (BDI)

<Roche> **Beck Depression Inventory** | **Baseline**

V 0477   CRTN: _____   CRF number: _____   Page 14   patient inits: _____

BDI-II   Date:

Name: _____   Marital Status: _____ Age: _____ Sex: _____

Occupation: _____   Education: _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today.** Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness
0   I do not feel sad.
1   I feel sad much of the time.
2   I am sad all the time.
3   I am so sad or unhappy that I can't stand it.

2. Pessimism
0   I am not discouraged about my future.
1   I feel more discouraged about my future than I used to be.
2   I do not expect things to work out for me.
3   I feel my future is hopeless and will only get worse.

3. Past Failure
0   I do not feel like a failure.
1   I have failed more than I should have.
2   As I look back, I see a lot of failures.
3   I feel I am a total failure as a person.

4. Loss of Pleasure
0   I get as much pleasure as I ever did from the things I enjoy.
1   I don't enjoy things as much as I used to.
2   I get very little pleasure from the things I used to enjoy.
3   I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings
0   I don't feel particularly guilty.
1   I feel guilty over many things I have done or should have done.
2   I feel quite guilty most of the time.
3   I feel guilty all of the time.

6. Punishment Feelings
0   I don't feel I am being punished.
1   I feel I may be punished.
2   I expect to be punished.
3   I feel I am being punished.

7. Self-Dislike
0   I feel the same about myself as ever.
1   I have lost confidence in myself.
2   I am disappointed in myself.
3   I dislike myself.

8. Self-Criticalness
0   I don't criticize or blame myself more than usual.
1   I am more critical of myself than I used to be.
2   I criticize myself for all of my faults.
3   I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes
0   I don't have any thoughts of killing myself.
1   I have thoughts of killing myself, but I would not carry them out.
2   I would like to kill myself.
3   I would kill myself if I had the chance.

10. Crying
0   I don't cry anymore than I used to.
1   I cry more than I used to.
2   I cry over every little thing.
3   I feel like crying, but I can't.

Subtotal Page 1

Continued on Back ▶

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11. Agitation

0   I am no more restless or wound up than usual.

1   I feel more restless or wound up than usual.

2   I am so restless or agitated that it's hard to stay still.

3   I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

0   I have not lost interest in other people or activities.

1   I am less interested in other people or things than before.

2   I have lost most of my interest in other people or things.

3   It's hard to get interested in anything.

13. Indecisiveness

0   I make decisions about as well as ever.

1   I find it more difficult to make decisions than usual.

2   I have much greater difficulty in making decisions than I used to.

3   I have trouble making any decisions.

14. Worthlessness

0   I do not feel I am worthless.

1   I don't consider myself as worthwhile and useful as I used to.

2   I feel more worthless as compared to other people.

3   I feel utterly worthless.

15. Loss of Energy

0   I have as much energy as ever.

1   I have less energy than I used to have.

2   I don't have enough energy to do very much.

3   I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

0   I have not experienced any change in my sleeping pattern.

1a	I sleep somewhat more than usual.
1b	I sleep somewhat less than usual.
2a	I sleep a lot more than usual.
2b	I sleep a lot less than usual.
3a	I sleep most of the day.
3b	I wake up 1–2 hours early and can't get back to sleep.

17. Irritability

0   I am no more irritable than usual.

1   I am more irritable than usual.

2   I am much more irritable than usual.

3   I am irritable all the time.

18. Changes in Appetite

0   I have not experienced any change in my appetite.

1a	My appetite is somewhat less than usual.
1b	My appetite is somewhat greater than usual.
2a	My appetite is much less than before.
2b	My appetite is much greater than usual.
3a	I have no appetite at all.
3b	I crave food all the time.

19. Concentration Difficulty

0   I can concentrate as well as ever.

1   I can't concentrate as well as usual.

2   It's hard to keep my mind on anything for very long.

3   I find I can't concentrate on anything.

20. Tiredness or Fatigue

0   I am no more tired or fatigued than usual.

1   I get more tired or fatigued more easily than usual.

2   I am too tired or fatigued to do a lot of the things I used to do.

3   I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0   I have not noticed any recent change in my interest in sex.

1   I am less interested in sex than I used to be.

2   I am much less interested in sex now.

3   I have lost interest in sex completely.

_____ Subtotal Page 2

_____ Subtotal Page 1

_____ Total Score

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Appendix 4 b): Beck Depression Inventory. (BDI-II)Swahili

Yafuatayo ni mafungu ya sentensi.Kutoka kila fungu, chagua sentensi ambayo inaeleza

vyema vile umekuwa ukihisi majuma mawili yaliyopita na unavyohisi leo.Weka alama ya

mviringo kwa nambari ya sentensi uliyochagua.

Hakikisha umesoma sentensi zote katika fungu kabla ya kuchagua sentensi inayoelezea vile

unahisi

1. Huzuni

0. Sina huzuni

1. Nina huzuni

2. Nina huzuni wakati wote na siwezi kujiondoa katika hali hii ya huzuni

3.Nina huzuni sana mpaka siwezi kustahimili

2. Kutokuwa na matumaini

0. Sijavunjika moyo hasa na siku za usoni

1. Nahisi nimevunjika moyo na siku za usoni

2. Ninahisi sina ninalotarajia siku za usoni

3. Ninahisi nimekata tama ya siku za usoni,na naona mambo hayawezi kuwa bora zaidi

3. Kushindwa maishani

0. Sijihisi kama nimeanguka maishani

1 Ninahisi nimeanguka maishani zaidi ya mtu wa kawaida

2 Nikiangalia maisha yangu yaliyopita naona nimeanguka sana

3 Nahisi nimeanguka kabisa maishani

4.Kutokuwa na furaha

0 Naridhika na mambo kama ilivyo kawaida yangu

1 Sifurahii mambo kama nilivyokuwa nikifurahia

2 Sitosheki tena kikamilifu na jambo lolote

3 Sitosheki wala sichangamshwi na chochote tena

5.Hisia za hatia

0 Sihisi hasa kama nina hatia Fulani

1 Nahisi nina hatia wakati mwingine

2 Nahisi nina hatia wakati mwingi

3 Nahisi nina hatia wakati wote

6.Hisia za kuadhibiwa

0 Sihisi kama nina adhibiwa

1 Nahisi kama naweza kuadhibiwa

2 Natarajia kuadhibiwa

3 Nahisi ninaadhibiwa

7.Kujichukia

0 Sihisi kama nimekasirikia nafsi yangu

1 Nimekasirikia nafsi yangu

2 Najidharau

3 Najichukia

8.Kujikosoa

0 Sihisi kama mimi ni mbaya zaidi ya mtu yeyote Yule

1 Najisuta sana katika makosa yangu ama udhaifu wangu

2 Najilaumu wakati wote kwa makosa yangu

3 Najilaumu kwa hofu lolote linalotendeka

9.Mawazo ya kujiua

0 Sina wazo lolote la kujiua

1 Nina wazo la kujiua,lakini sitalitimiza wazo hilo

2 Ningetaka kujiua

3 Nitajiua nikipata nafasi

10.Kulia

0. Silii siku hizi zaidi ya vile ilivyo kawaida yangu

1 .Nalia siku hizi zaidi ya ilivyokuwa kawaida yangu

2 .Nalia wakati wote siku hizi

3 .Nilikuwa nikiweza kulia,lakini sasa hata nikitaka kulia siwezi

11.Kushindwa kutulia

0 .Sikasirishwi kwa urahisi siku hizi zaidi ya ilivyokuwa kawaida yangu

1 .Nakasirishwa kwa urahisi zaidi ya ilivyokuwa kawaida yangu

2 .Nahisi nimekasirishwa wakati wote siku hizi

3 .Sikasirishwi kamwe na mambo ambayo yalikuwa yakinikarisirisha

12.Hamu ya kujumuika na watu

0 .Sijapoteza hamu ya kujihusisha au kujumuika na watu

1 .Hamu yangu ya kujihusisha na watu imepungua zaidi ya ilivyokuwa

2 .Nimepoteza sana hamu yangu ya kujihusisha na watu

3 .Nimepotesha hamu yangu yote ya kujihusisha na watu

13.Kuamua

0 .Ninafanya uamuzi kuhusu jambo lolote kama kawaida

1 .Ninahairisha kufanya uamuzi zaidi ya vile nilivyokuwa nikifanya

2 .Nina uzito mkubwa wa kufanya uamuzi kuliko hapo awali

3 .Siwezi tena kufanya uamuzi wa jambo lolote lile

14.Kutokuwa na thamani

0 .Sihisi kuwa naoneka vibaya zaidi ya vile nilivyokuwa

1 .Nina wasi wasi kuwa naonekana sivutii

2 .Ninahisi kuwa kuna mabadiliko yasiyo ondoka kwenye umbo langu yanayofanya nisifutie

3 .Nina amini ya kuwa nina sura mbaya

15.Upungufu wa ngufu mwilini

0 .Naweza fanya kazi kama vile ilivyokuwa hapo awali

1 .Ni lazima nifanye bidii,ndipo nianze kufanya jambo lolote

2 .Inabidi nijilazimishe sana ili niweze kufanya jambo lolote

3 .Siwezi kabisa kufanya kazi yoyote

16.Mabadiliko ya usingizi

0 . Ninalala kama kawaida yangu

1 .Silali vyema kama nilivyokuwa nikilala hapo awali

2 .Naamka mapema kwa saa moja au masaa mawili, ambayo sio kawaida yangu,halafu ni   ngumu kupata usingizi tena

3 .Naamka mapema zaidi ya masaa mawili ,ambayo si kawaida yangu,halafu siwezi kupata usingizi tena

17. Kukasirika.

0.Sikasirikangi haraka kushinda kawaida

1.Ninakasirika haraka kushinda kawaida

2. Ninakasirika haraka zaidi kushinda kawaida

3. Huwa nimekasirika wakati wote

18.Mabadiliko ya hamu ya chakula

0 .Hamu yangu ya chakula sio mbaya zaidi ya vile ilivyokuwa hapo awali

1 .Hamu yangu ya chakula sio nzuri kama ilivyokuwa hapo awali

2 .Hamu yangu ya chakula ni mbaya sana siku hizi

3 .Sina tena hamu ya chakula hata kidogo

19.Kuwaza

0 .Kumakinika kwangu in kama hapo awali

1 .Siwezi waza jambo moja kama hapo awali

2 .Ni vigumu kuwaza jambo moja kwa mda mrefu

3 .Siwezi waza   jambo lolote

20.Kuchoka

0 .Sichoki zaidi ya nilivyokuwa nikichoka hapo awali

1 .Nachoka kwa urahisi zaidi ya kawaida yangu

2 .Nachoshwa karibu na kila jambo ninalofanya

3 .Ninachoka sana,hata siwezi kufanya lolote

21.Hamu ya kushiriki ngono

0 .Sijaona mabadiliko yoyote hivi karibuni kuhusu hamu ya kufanya mapenzi

1 .Hamu yangu ya kufanya mapenzi imepungua zaidi ya vile ilivyokuwa

2 .Hamu yangu ya kufanya mapenzi imepungua sana siku hizi

3 .Nimepoteza kabisa hamu yangu ya kufanya mapenzi

Appendix 5 a): Beck Anxiety Inventory (BAI)

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by the symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

	Not At All	Mildly but it Did not bother me	Moderately-it Was not pleasant at	Severely–it Bothered me a lot
Numbness or tingling	0	1	2	3
Feeling hot	0	1	2	3
Wobbliness in legs	0	1	2	3
Unable to relax	0	1	2	3
Fear of worst happening	0	1	2	3
Dizzy or lightheaded	0	1	2	3
Heart pounding/racing	0	1	2	3
Unsteady	0	1	2	3
Terrified or afraid	0	1	2	3
Nervous	0	1	2	3
Feeling of choking	0	1	2	3
Hands trembling	0	1	2	3
Shaky / unsteady	0	1	2	3
Fear of losing control	0	1	2	3
Difficulty in breathing	0	1	2	3
Fear of dying	0	1	2	3
Scared	0	1	2	3
Indigestion	0	1	2	3
Faint /lightheaded	0	1	2	3
Face flushed	0	1	2	3
Hot/cold sweats	0	1	2	3
Column Sum				

Scoring - Sum each column.   Then sum the column totals to achieve a grand score. Write that score here .

INTERPRETITION.

A grand sum between **0–21** indicates very low anxiety.   That is usually a good thing. However, it is possible that you might be unrealistic in either your assessment which would be denial or that you have learned to "mask" the symptoms commonly associated with anxiety. Too little "anxiety" could indicate that you are detached from yourself, others, or your environment.

A grand sum between *22–35* indicates moderate anxiety. Your body is trying to tell you something. Look for patterns as to when and why you experience the symptoms described above. For example, if it occurs prior to public speaking and your job requires a lot of presentations you may want to find ways to calm yourself before speaking or let others do some of the presentations. You may have some conflict issues that need to be resolved .Clearly, it is not "panic" time but you want to find ways to manage the stress you feel.

A grand sum that **exceeds 36** is a potential cause for concern. Again, look for patterns or times when you tend to feel the symptoms you have circled. Persistent and high anxiety is not a sign of personal weakness or failure. It is, however, something that needs to be proactively treated or there could be significant impacts to you mentally and physically. You may want to consult a physician or counselor if the feelings persist.

Appendix 5 b): Beck Anxiety Inventory (BAI) Swahili

Tafadhali soma kwa uangalifu kila kitu katika orodha. Katika kiasi gani umesumbuliwa na dalili zifuatayo wakati wa mwezi uliopita, ikiwa ni pamoja na siku ya leo. Weka alama ya mviringo katika nafasi sambamba katika safu inayolingana na dalili yako.

	Sio wakati wote	Upole lakini haikunishinikiza sana .	Kiasi-haikuwa ya furaha wakati wote	Ukali- ilinipatia wasi wasi sana
Kufa ganzi au kuwakwa	0	1	2	3
Kujihisi joto	0	1	2	3
Miguu kutetemeka	0	1	2	3
Kutoweza kupumzika	0	1	2	3
Hofu ya mbaya kutokea	0	1	2	3
Kizunguzungu	0	1	2	3
Moyo kupiga	0	1	2	3
Kujihisi kutokuwa dhabiti	0	1	2	3
Hofu au woga	0	1	2	3
Kuhisi woga	0	1	2	3
Kuhisi kukatika pumzi	0	1	2	3
Mikono kutetemeka	0	1	2	3
Kujihisi hafifu	0	1	2	3
Hofu ya kupoteza udhibiti	0	1	2	3
Ugumu wa kupumua	0	1	2	3
Hofu ya kufa	0	1	2	3
Hofu	0	1	2	3
Kiungulia	0	1	2	3
Hafifu	0	1	2	3
Kuaibika	0	1	2	3
Moto/kibaridi jasho	0	1	2	3
JUMLA YA SAFU				

Basi kuhitimisha kufikia kwa safu jumla, andika alama hapa

_____

Appendix6 a): Alcohol Use Disorders Inventory Test (AUDIT)

Interview Version

Read the questions as written. Record responses carefully, scoring each answer according to number in parentheses. Begin the AUDIT by saying "Now I am going to ask you some questions about your use of alcoholic beverages during this past year." Explain what is meant by "alcoholic beverages" using examples of beer, wine, vodka, etc.

1. How often do you have a drink containing alcohol?

Never *(skip to Questions 9&10)*	(0)	
Monthly or less	(1)	
Two to four times a month	(2)	
Two to three times per week	(3)	
Four or more times a week	(4)	Score:_____

2. How many drinks containing alcohol do you have on a typical day when you are drinking?

1or2	(0)	
3or4	(1)	
5or6	(2)	
7to9	(3)	
10ormore	(4)	Score:_____

3. How often do you have six or more drinks on one occasion?

Never	(0)
Monthly or less	(1)
Two to four times a month	(2)

Two to three times per week	(3)	
Four or more times a week	(4)	Score:_____

If total score is 0 at this point, skip to Questions 9 & 10.

4. How often during the last year have you found that you were not able to stop drinking once you had started?

Never	(0)	
Monthly or less	(1)	
Two to four times a month	(2)	
Two to three times per week	(3)	
Four or more times a week	(4)	Score:_____

5. How often during the last year have you failed to do what was normally expected from you because of drinking?

Never	(0)	
Monthly or less	(1)	
Two to four times a month	(2)	
Two to three times per week	(3)	
Four or more times a week	(4)	Score:_____

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

Never	(0)
Monthly or less	(1)
Two to four times a month	(2)
Two to three times per week	(3)
Four or more times a week	(4)

Score:_____

7. How often during the last year have you had a feeling

of guilt or remorse after drinking?

Never *(skiptoQuestions9&10)*	(0)
Monthly or less	(1)
Two to four times a month	(2)
Two to three times per week	(3)
Four or more times a week	(4)

Score:_____

8. How often during the last year have you been unable to remember

what happened the night before because you had been drinking?

Never	(0)
Monthly or less	(1)
Two to four times a month	(2)
Two to three times per week	(3)
Four or more times a week	(4)

Score:_____

9. Have you or someone else been injured as a result of your drinking?

No	(0)
Yes, but not in the last year	(2)
Yes, during the last year	(4)

Score:_____

10. Has a relative or friend, or a doctor or other health worker

been concerned about your drinking or suggested you cut down?

No	(0)	
Yes, but not in the last year	(2)	
Yes, during the last year	(4)	Score:_____

Total Score: _____

EVALUATION

Risk Level	Intervention	Score
I	Alcohol education	0-7
I	Simple advice	8-15
III	Simple advice plus brief intervention	16-19
I	Referral to specialist for diagnostic evaluation	20-40

Appendix 6 b): Alcohol Use Disorders Inventory Test (AUDIT) Swahili

KIFAACHAKUPIMAMADHARAYANAYOTOKANANAUNYWAJIWA POMBE

Soma maswali yote kwa umakini. Ukweli wako katika kujibu maswali hayautakuwa muhimu sana kwa afya yako.Kwasababu utumizi wa pombe unaweza kudhuru afya yako

na kusababisha hitilafu wakati wa matibabu, ni muhimu tukuulize maswali kuhusu matumizi yako ya pombe.Majibu yako yatawekwa siri, kwa hivyo tafadhali jibu kwa ukweli.Kwa kila swali lifuatalo hapa chini weka alama ya '**X**' katika kisanduku kinacho elezea jibu lako.

1.Ni mara ngapi wewe Hunywa kinywaji cha pombe ambacho uliweka mviringo hapo juu?	Sijawahi	Labda mara moja kwa mwezi	Mara 2-4 kwa mwezi	Mara 2-3 kwa wiki	Mara 4 au zaidi kwa mwezi
			2 to 4 times a	2 to 3	4 or more times a
2. Ni vinywaji vingapi katika vile ulivyoweka mviringo hapo juu ambavyo wewe hunywa kwa siku moja?	1 au 2	3 au 4	5 au 6	7 au 9	10 au zaidi
How many of the drinks that you circled do you have on a typical day	1 or 2	3 or 4	5 or 6	7 or 9	10 or
3. Ni mara ngapi wewe hunywa pombe tano au zaidi katika kikao kimoja?	Hakuna	Labda mara moja kwa mwezi	Kila mwezi	Kila juma/ wiki	Kila siku au karibu kila siku
4.Ni mara ngapi katika mwaka uliopita ulipo gundua unakaa chini kukunywa lakini ukashindwa kujipima kunywa kiasi?	Hakuna	Labda mara moja kwa mwezi	Kila mwezi	Kila juma/ wiki	Kila siku au karibu kila siku
How often during the last year have you found that you were not able to stop	Never	Less than	Every month	Every	Daily or almost daily

5.Ni mara ngapi katika mwaka uliopita uli kosa kutimiza wajibu wako au kazi yako kwa sababu ya kunywa pombe? How often during the last	Hakuna Never	Labda mara moja kwa mwezi Less than	Kila mwezi Every month	Kila juma/ wiki	Kila siku au karibu kila siku Daily or
6.Ni mara ngapi katika mwaka uliopita ulihitaji kinywaji cha kulevya asubuhi ili kujichangamsha baada ya kunywa pombe nyingi sana siku iliyopita (yaani *kutoa lock*)? How often during the last year have you needed a first drink in	Hakuna 	Labda mara moja kwa mwezi Less than	Kila mwezi 	Kila juma/ wiki Every	Kila siku au karibu kila siku Daily or almost daily
7. Ni mara ngapi katika mwaka uliopita ambapo umeona kuwa umekosa baada ya kunywa pombe? How often during the last year have you had a	Hakuna Never	Labda mara moja kwa mwezi	Kila mwezi Every month	Kila juma/ wiki	Kila siku au karibu kila siku Daily or

	Hakuna	Labda mara moja kwa mwezi	Kila mwezi	Kila wiki	Kila siku au karibu kila siku
8. Ni mara ngapi katika mwaka uliopita haukuweza kukumbuka chochote kilichotendeka wakati ulipokuwa mlevi (yaani *black out)?* How often during the last year have you been unable					
9. Umewahi kuumia au mtu mwingine amewahi kuumia kwa sababu ya ulevi wako (yaani *kukata /sticker*?	La		Ndio, lakini sio katika mwaka uliopita		Ndio, mwaka uliopita
10.Je,kunaye mtu wa familia yako, rafiki, daktari au mfanya kazi wa afya, aliyeshughulika na unywajiwako wa pombe kukuhimiza kupunguza (yaani *kupata msomo*? Has a relative, friend, doctor or health	La No		Ndio, lakini sio katika mwaka uliopita Yes, but not during the last 12months		Ndio, mwaka uliopita Yes, during the last12 months

Appendix 7: Study Site Map.

Appendix 8: Budget.

	Item	Unit of Measurement	Units required	Cost/ Unit	Total cost (Ksh)
Stationery	A4 Notebooks	Pieces	3	200	600
	Pens	Pieces	10	25	250
	Pencils	Pieces	6	10	60
	Erasers	Pieces	3	30	90
	Folders	Pieces	10	100	1, 000
	Clip Boards	Pieces	5	200	1, 000
Sub total					**3, 000**
Services	**Photocopy**				
	Proposals				
	Drafts	Pages	100	2	200
	Final copies	Pages	150	2	300
	Printing				
	Proposals				
	Final copy	Pages	180	10	1,800
	6 Final Copies @ 70 Pages	Pages	420	10	4,200
	Binding				
	Proposals	Copies	12	50	600
	Thesis Reports	copies	8	500	4000
	Communication	Airtime cards	7	1, 000	7,000

Sub Total					**18,100**
Ethical clearance	**ERC Kenyatta-UON**			2, 000	
Sub Total					2,000
Sign language interpreter	**Interpreting**	Days	14	3,000	42,000
Hall hire	**Venue**	Days	14	2,000	28,000
Participants' Service Costs	Individual	Kenyan Shillings	159	200	31,800
Sub Total					**105,300**
Data Processing and Analysis					50, 000
Sub Total					**50, 000**
Transport	Data Collection Period	Days	14	300	4,200
Sub Total					**4,200**
Total					**177,600**
Contingency	**10% of Total**				**17,760**
Grand Total					**196,860**

Appendix 9: Study Timeline.

Detail	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8
Proposal development	■	■	■					
Ethical approval				■	■			
Data collection						■		
Data analysis							■	
Presentation of study findings								■