PSYCHOPATHOLOGY, RESILIENCE, AND RISK FACTORS AMONG DEAF AND HARD OF HEARING ADOLESCENTS:

A MIXED METHODS STUDY OF THE SPECIAL UNIT SCHOOLS IN NAIROBI COUNTY, KENYA.

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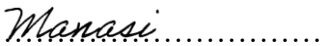
SIGNATURE:  ……

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DECLARATION OF ORIGINALITY

I declare that this dissertation is my original work and to the best of my knowledge has not been submitted in part or full to this or any other university for the award of any degree or academic credit.

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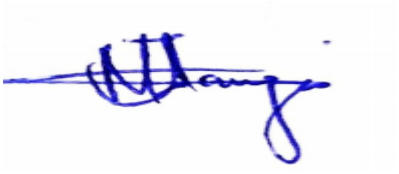
SIGNATURE: ……  ……..

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DEDICATION

I dedicate this dissertation to the Almighty God who has continued to be gracious throughout my studies. I also dedicate this dissertation to my family who support me unconditionally as I pursue my studies.

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LIST OF ABBREVIATIONS AND ACRONYMS

APA	American Psychiatrists Association
ADHD	Attention Deficit and Hyperactive Disorder
ASD	Autism Spectrum Disorder
CCSM	Cross Cutting Symptom Measure
dB	Decibels
DSM-5	Diagnostic and Statistical Manual of Mental Disorders 5th Edition
HH	Hard of Hearing
ICD	International Classification of Diseases
IPA	Interpretative Phenomenological Approach
KSL	Kenyan Sign Language
LMIC	Low and Middle Income Countries
SDQ	Strengths and Difficulties Questionnaire
SSA	Sub-Saharan Africa
UNCRPD	United Nations Convention on the Rights of People with Disabilities
WHO	World Health Organization

OPERATIONAL DEFINITIONS

Adolescent-Developmental phase between 11-17 years when various changes occur.

Deaf-Persons with profound hearing loss and who use sign language to communicate.

Hard of Hearing- Persons with mild to severe hearing loss and can make use of spoken language through assisting devices or captions to communicate alongside sign language.

Kenyan Sign Language- A visual gestural language that applies the use of hands, facial expressions and body language to communicate by Deaf and Hard of Hearing persons in Kenya.

Psychopathology- Disturbance of the psyche in a person demonstrated by emotional and behavioral difficulties often diagnosed through the use of the Diagnostic and Statistical Manual for Mental Disorders (DSM) or the International Classification of Diseases (ICD)

Interpretative Phenomenological Approach- This is a method of qualitative research where the researcher aims to explore the insights of the participants within their given perspectives in order to make meaning of their experiences.

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STRUCTURED SUMMARY (ABSTRACT):

Background- Hearing disability is associated with challenges that may predispose one to psychopathology. There is little evidence on the population's prevalence of psychopathology. Too much focus in research has been on the risks faced by the group rather than their resilience.

Study Objective–To determine the prevalence, patterns of psychopathology, associated risk and resilience factors among Deaf and Hard of Hearing adolescents in Nairobi County Special Unit Schools.

Methodology: The study is a mixed methods cross-sectional research design targeting a population of Deaf and Hard of Hearing Adolescents aged 11-17years enrolled at special unit schools in Nairobi County. 8 primary schools and 1 secondary school took part in the study with a total 107 adolescents, 96 teachers and 68 parents response. Sampling was done using convenience sampling for the quantitative section and purposive sampling for the qualitative section. Data Collection was achieved through the use of the following tools:

- Researcher designed Socio-Demographic Questionnaire
- Strengths and Difficulties Questionnaire (Self, Teacher and Parent Reported)
- DSM-5 Cross-Cutting Symptom Measure (11-17yrs)
- Semi-Structured in-depth interview guide- researcher developed

Data Analysis: Quantitative- Descriptive and correlation analysis to test for association between hearing disability and psychopathology was done. Software used was IBM SPSS version 23 software for windows. Qualitative- Interpretive Phenomenological Analysis to represent the different risk and resilience and adjustment issues

Results: The results are presented in tables, graphs, charts and narratives**.** Generally, moderate to high internalizing and externalizing problems as well as psychiatric symptomatology was prevalent across 12 domains of the DSM-5 tool while for the SDQ recorded 68.2% Peer problems, 47.7% emotional problems, 34.6% conduct problems, 21.5% prosocial problems and 19.6% hyperactivity problems.

DSM-5 CCM also recorded prevalence of different symptoms as: psychosis 57%, depression 51.4%, 49.5% inattention, 48.6% anxiety, 43% repetitive thoughts and behavior, 38.3% mania, 37.4% somatic symptoms, 27.1% anger, 18.7% sleep problems, 15.9% irritability, 11.2% substance use and 6.5% suicidal ideation

Qualitative results highlighted risk factors of stigma, language barrier, poverty, adverse childhood events among others for mental health problems. Respondents also illustrated future aspirations, Deaf community and its advocacy as protective factors alleviating mental health distress.

Dissemination: Dissemination is aimed to be through publishing, mental health talks and sharing the findings with relevant stakeholders.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Any individual who has a hearing disability experiences problems in areas of quality of life, interpersonal communication and psychosocial well-being. Furthermore, hearing loss sets them on a risk trajectory of abuse, murder, stigma, psychopathology, isolation among other aspects. The population continues to face these challenges in accessing health, education and other amenities due to poverty and misinformation resulting from the rampant communication barrier (Olusanya *et al.*, 2014; Global Accessibility News, 2019). In Sub Saharan Africa (SSA), Hard of Hearing (HH) and Deaf persons experience widespread challenges resulting from limitations in their social, medical and political structures which in the end reduce them to mere dependents in their communities. Culturally, myths and misconceptions are also propagated leading to oppression and face value tolerance to the group. (Rusinga, 2012).

What's more, 95% of Kenyan Hard of Hearing (HH) and Deaf children are not in a position to access formal education (Zanten, 2014). The Kenyan Deaf adolescents in particular cite challenges such as unmotivated teachers who rarely understand Kenyan Sign Language (KSL) and a constant lack of role models. The effect of such challenges is a population of adolescents who believe that they are not as gifted as their hearing counterparts. The general attitude in Kenya is that Deaf adolescents and students cannot achieve much in their lives (Rustin, 2016). However, some Deaf adolescents acknowledge the importance of school with hopes of better futures and fight through the challenges by first accepting their identities as Deaf persons. Kenyan parents to Deaf adolescents face different emotions and worry about the education and general future of their offspring (Ndurumo *et al*., 2016).

1.1 Background

There are more than one billion individuals living with disability globally. Furthermore, of the population, 180-200 million persons living with disabilities are aged 10 to 24 (United Nations Population Fund, 2018). When it comes to developing countries, it is estimated that there are 450 million individuals living with disability. The World Health Organization (WHO) cautions against the growing population of persons with hearing loss where in 1985, the population was at 42 million increasing to 360million which is 5.3% of the global population by 2011(Olusanya *et al*., 2014). From population based studies conducted by WHO, SSA, South Asia and Asia Pacific are thought to be particularly affected by this disability and accounting for a significant amount of the said population (World Health Organization, 2012). In Kenya, there is an estimated 600,000 scattered population of Deaf persons with 230,000 of them being children and adolescents (Wilson & Kakiri, 2010).

1.2 Problem Statement

Deaf adolescents in Kenya face multiple challenges due to their disability status. The challenges are what predispose them to different psychopathologies. However, there are limited studies on what specific mental disorders they face. Other than general life challenges, the Deaf population in Kenya faces the challenge of communication barrier. The barrier is particularly present as they seek health services. As researched among Deaf adults, the miscommunication happening as they seek mental health services most often leads to misdiagnoses. The psychologists attending to the Deaf patients often time consider rapid signing as an indication of anxiety or other affective symptom. However, the rapid signing could be as a result of frustration due to the inability to fully communicate with the clinician (Ngugi & Mwiti, 2018).

Nevertheless, little has been done in terms of research of the population in question in SSA. Majority of the research as stated earlier revolves around the challenges faced by Deaf adults; especially on communication barriers. Recently, Deaf adults in Nairobi were studied to explain the association of anxiety, depression and alcohol use (Anyango, 2018). Therefore, this study intended to shed more light into the issue of psychopathology among the HH and Deaf Kenyan adolescents. Moreover, an in-depth analysis of the associated risk and resilience factors was done. The intention was to fully understand the prevalence of psychopathology and the associated factors in the said population.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter, while considering the significant gap in literature on psychopathology, risk and resilience factors among Deaf adolescents in Sub-Saharan Africa, critically reviews available data and findings on the issues.

2.1Hearing Disability

WHO, while explaining Deafness and hearing loss describes the categories of the condition. They identify disabling hearing loss as different for both adults and children in terms of decibels (dB) which are the units of measuring the intensity of sound on a scale. Loss of more than 40dB and 30dB in the better hearing ear is disabling for adults and children respectively (World Health Organization, 2019).

Depending on the measure, hearing loss can be extrapolated as mild, moderate, severe or profound affecting either one or both ears. Those with mild to severe hearing loss are referred to as 'Hard of Hearing' and are able to communicate using spoken language, use of hearing aids, cochlear implants, other assistive devices and the use of captions alongside sign language. However, 'Deaf' people are exclusively those with profound hearing loss and use Sign Language to communicate.

As is used in this dissertation and most other writings concerning this population, the terms are written with the initial letter being capital. Upper case D is used to refer to the culturally Deaf. The Deaf culture is defined socio-culturally rather than from a pathological standpoint (Bauman *et al*., 2013). Members of the Deaf culture consider themselves as a different culture, making use of a language that is complete in itself utilizing facial expressions and body language rather than persons with disabilities (Ndurumo *et al*., 2016).

The above is recognized by the United Nations Convention on the Rights of People with Disabilities (UNCRPD) Article 30,4 (United Nations, 2007) and the Kenyan government as well (Kenya National Commission on Human Rights, 2016). Moreover, safeguarding of the basic human rights of the Deaf citizens is included in the Chapter 4, Section 1b Article 7(3b) of the Kenyan constitution. The country acknowledges the need to recognize and develop KSL as an official means of communication for the community (Kenya Law Reform Commission, 2019).

2.2 Hearing Disability, Adolescence, and Overall Mental Health

Adolescence is a crucial life stage where individuals experience a wide array of developmental changes (Meyer *et al*., 2013). When it comes to Deafness at this vital developmental stage, very little is known on their quality of life especially in regards to their psychological well-being. Hearing loss among adolescents can be a debilitating disability affecting their general well-being thus prospectively leading them to develop different psychopathologies. The population also scores higher on difficulties relating to emotion and behavior than their hearing counterparts. This is according to a meta-analysis of different studies on the issue (Stevenson *et al*., 2015). It is thus crucial to assess for the different psychopathologies that they might be at risk of getting. It is proven that Deaf children and adolescents are at risk of developing disorders such as conduct disorder, oppositional defiant disorder, depression, attention deficit and hyperactivity disorder, anxiety, and somatic disorders(Theneunissen *et al*., 2015; Theunissen *et al*., 2015).

However, it is also helpful if interventions can be tailored for them especially through the highlighting of the different resilience factors that they may possess. As identified, the age of diagnosis of comorbid disorders related to hearing loss, enhancement of communication, healthy social support systems and conducive types of schools significantly helps Deaf

adolescents' mental health statuses (Theunissen *et al*., 2014). The importance of focusing on the above and many other resilience factors among the Deaf is necessary especially in a bid to fight of stigmatization and labeling of the population. This is due to the fact that psychological and psychiatric disciplines continue to pathologize Deafness based on the characteristics and life experiences of the population (Pollard, 1998).

2.3 Psychopathology among the Deaf and Hard of Hearing Adolescents

It is reported that Deaf adolescents show high prevalence of psychopathology meaning that it is crucial for caregivers and mental health care providers to detect and mitigate early on, the different emotional and behavior problems presented by the population. However, their state of being Deaf is not necessarily the determinant of psychopathology as is assumed (Tiejo Van-Gent *et al*., 2007). Moreover, Ohre determines that hearing loss that occurs early in life does not necessarily predispose one to psychopathology as the individuals lead a life similar to that of hearing individuals (Ohre, 2017).

However, Deaf children and adolescents do experience more challenges that may increase their chances of developing psychopathology than their counterparts. While comparing different aspects of Deaf individuals such as comorbidity, symptom intensity, and demographic characteristics to determine the prevalence of majority mental disorders using the Mini International Neuropsychiatric Interview (MINI), Ohre in 2017 concluded that the population did not significantly differ from the hearing population (Ohre, 2017).

In 2005, mental health issues among Deaf children were related to early onset Deafness and the severe to profound nature of the Deafness (Hindley, 2005). However, this was disputed by other scholars who stated that severity of Deafness does not necessarily mean more mental health issues. Specifically, behavioral issues are twice more common in hearing populations

of children and adolescents as opposed to those with moderate to profound hearing loss(Fellinger *et al*., 2012).

The prevalence of Deaf children's mental health illnesses is estimated at a significant 40%. Thus, the findings point out that Deaf children were 1.5 to 2 times more at risk of developing mental illness compared to their hearing counterparts. According to the National Statistics Online data, 15% to 20% of Deaf children are diagnosed with clinically significant mental health issues. Additionally, Deaf children are often diagnosed with additional disabilities as described by both (Fellinger *et al*., 2012; Hindley, 2015).Of the specific psychological disorders, Deaf children were more diagnosed with Conduct Disorder, Autism Spectrum Disorder (ASD), and Attention Deficit and Hyperactivity Disorder (ADHD) (Hindley, 2005). In America alone, 27 % of Deaf children and adolescents had different comorbidities. The exact statistics are as follows; 9% learning disabilities, 5% developmental delays, 8% specific learning problems, 4% visual disability, 30% Neurodevelopmental issues, 26% general intellectual disabilities and 2% autism (Fellinger *et al*., 2012).

While looking at substance use among Deaf and Hard of Hearing adolescents, it is more likely that those admitted to rehabilitation centers present with co-occurring mental health problems (Titus *et al*., 2008). Predominantly, the population tested positive for depression, anxiety, conduct disorder, post-traumatic stress disorder and attention deficit and hyperactivity disorder. This was true for at least 75% of those admitted. It is also crucial to understand that the population also reported higher rates of victimization and trauma than their hearing counterparts especially among the female adolescents groups (Titus *et al*., 2008).

Furthermore, it was postulated that the cause of Deafness greatly influenced the development of a mental illness. Causes such as intrauterine viral infections, severe prematurity at birth and neonatal meningitis significantly predisposed the Deaf children to mental illness and more specifically to Autism and ADHD. Specific risk factors identified included delays in development caused by deprivation of communication modes early in life. Other disorders of the central nervous System, abuse as well as what made them Deaf also featured prominently as risk factors. It was cited that the mental health issues could be prevented if provision of psychological support for their families and communication options early on occurred (Hindley, 2005).

Studies in Nigeria and SSA greatly link Deafness to depression. Factors such as the degree and onset of the hearing loss as well as communication, socio-economic status, birth order and parental support were vital in determining diagnosis and prognosis of depression (Adigun, 2015). Globally, depression among Deaf persons as studied is present as they portray more symptoms than their hearing counterparts. Additionally, female Deaf persons reported more anxiety and depressive symptoms than male Deaf persons (Kvam *et al*., 2007). Similar results were replicated in Korea where female Deaf respondents scored higher for stress. However, elderly male Deaf respondents were more prone to depression while elderly Deaf females reported more suicidal ideations (Shin & Hwang, 2017).

2.4 Risk Factors among Deaf and Hard of Hearing Adolescents

2.4.1 Stigma

Stigma has been associated with special groups since time immemorial. The general populations always seem eager to discriminate and highlight the differences in functionality between the general populations and those with different disabilities (Jones, 2002). In regards to Deaf populations, the use of language has been the primary source of stigma for them as

they exist in a hearing world. Jones (2002), attempted to argue out the use those aspects of the Deaf world that made them so different from their counterparts into the foundational basis for their unique yet complete culture like any other cultures. Conclusions made from the trial included the fact that prejudice, language, and stigma, all made Deaf groups to be seen as minorities. The phenomenon then pushes the Deaf to separate and identify as ordinary people with a trait of not being capable of hearing. The result of that has been the Deaf person stigmatizing his or her hearing counterpart since he or she cannot understand Sign Language making them outsiders (Jones, 2002).

Moreover, Lane (2005) in Ethnicity, Ethics, and the Deaf-World postulates that the Deaf persons do not identify as a disability group but rather as an ethnicity in its own right. When the Hearing-World identifies the Deaf as a minority, they encourage the notion of disability while discouraging Deaf minors from learning their Sign Language and culture. They view these attempts as attempts geared towards decreasing their numbers instead of accepting them as people capable of offering solutions and insight towards their problems (Lane, 2005).

Recently, Mousley and Chaudior (2018) looked into the issue of stigma and its correlation to psychological well-being among Deaf emerging adults. They were most concerned with symptoms of anxiety, depression, alcohol use and general quality of life. Their resilience and benefit-finding capacity were also considered in how they navigated through the stigma. When the emerging Deaf adults faced enacted stigma as opposed to that which could be anticipated or internalized, they presented with worse symptoms of depression, anxiety and their quality of life appeared to be more compromised. However, none of the factors under scrutiny determined the population's use of alcohol while resilience and benefit-finding did not regulate the effects of the stigma (Mousley & Chaudoir, 2018).

2.4.2 Inadequate Social Support Systems

Mance and Edwards (2012) looked into the psychological well-being of Deaf adolescents with cochlear implants and discovered the importance of social support systems especially from peer relationships. Any self-perception of a Deaf adolescent as close to other peers resulted in good psychological well-being. Furthermore, the impact was also significantly determined by their perceived similarity especially to their hearing rather than Deaf peers (Mance & Edwards, 2012). Being placed in a school that improves the likelihood of having a supportive peer group is crucial in any Deaf adolescent's life since social groups are essential in determining self-concept and confidence (Brice & Strauss, 2016).

Communication is necessary for determining the quality of life for both Deaf and Hearing populations. One disadvantage of being Deaf is that the Deaf communities comprise of very few members in each country compared to the Hearing populations. Thus, it would be difficult for Deaf people to find other Deaf people interested in their specific interests and therefore be in a position to communicate (Cooper, 2007). However, the Deaf support their communities by saying that being fewer in number helps them become more supportive of one another. Communication barriers for those Deaf individuals desiring to communicate with a wider variety of individuals do exist. This is because not every Deaf person is satisfied speaking and interacting with only Deaf others.

Furthermore, most of the services needed in any set up will more likely have hearing professionals as opposed to Deaf professionals based on the numbers (Cooper, 2007). In support of this, research indicates that female Deaf adolescents in Nigeria generally feel shy when it comes to discussing important issues with healthcare providers in the presence of sign language interpreters (Arulogun *et al*., 2013). Generally, the group of individuals also

faces unique challenges when they want to access information concerning puberty, nutrition, relationships, body image and other physical wellness topics (Kuenburg *et al*., 2016).

Brice and Strauss (2016) sought to identify through a meta-analysis of various studies, the differences in Deaf and Hearing adolescents. Specific constructs that appeared frequently included quality of life, identity development, and self-concept. While reviewing the quality of life, most studies concluded that Deaf adolescents had lower life quality compared to their hearing counterparts. Interestingly though, Deaf adolescents reported overall satisfaction with their school and family interactions. However, they were less enthusiastic concerning their physical and mental health with less satisfaction featuring about their leisure and general interests.

Nevertheless, there were also findings of reduced quality of life due to lower satisfaction in emotional, peer, family and school interactions. The rating was lower compared to those of hearing children and adolescents ranging from eight to seventeen years. There were also similarities in the two populations' idea and sense of self-satisfaction. Overall, the research on the quality of life concluded that there are reported levels of satisfaction with Deaf adolescents' quality of life. The levels are however dependent on factors such as the presence or lack of a hearing aid, another Deaf member in the family and type of school (McIlroy & Storbeck, 2011; Brice & Strauss, 2016).

Additionally, academic advantages were highlighted of attending mainstream programs but with social disadvantages for Deaf adolescents. Thus, more meaningful social interactions would be present if Deaf adolescents attended segregated schools (Brice & Strauss, 2016). A South African study where Deaf adults looked back into their childhood and adolescence supports the disadvantages of mainstream schools. The respondents nostalgically look back

into the full development of their identity once their parents moved them into schools for the Deaf. They state that they were able to feel a sense of belonging as contrary to how they felt in mainstream schools where their peers often stigmatized them for being Deaf (McIlroy & Storbeck, 2011). Comparing all the information highlighted, there appears to be a hint of the importance of communication in the development of healthy self-concepts for the population under review.

2.5 Resilience Factors among the Deaf and Hard of Hearing Adolescents

Resilience among Deaf adolescents can be identified as outgoing personality, adequate communication skills, and self-advocacy. The above can be achieved through different opportunities to work and engage collaboratively with the hearing peers and teachers through the day to day interactions and extra-curricular activities at home and school.

There are plenty of risk factors facing Deaf adolescents. There is an increasing number of Deaf students lacking easy access to peers and adults that they can communicate with (Anita, Reed, & Shaw, 2011). Moreover, many would assume that Deaf adolescents living in a hearing world would be incapable of building resilience (Listman *et al*., 2011).

It has been postulated that the risk factors increase the likelihood of social isolation among Deaf adolescents leading to minimal or no opportunities for social competence development. Lack of adequate or any hearing at all as well as decreased social maturity as a result of age curtails the growth of resilience among Deaf adolescents (Anita *et al*., 2011). The book Resilience in Deaf Children disputes the belief observing that the population has protective factors that can be bolstered throughout their school life to assist in building resilience. Therefore, it is possible for Deaf adolescents to tap into their community role models, teachers and parents and thus promote resistance (Listman *et al*., 2011).

2.5.1 Self-Esteem Functioning among Deaf and Hard of Hearing Adolescents

While assessing for the self-esteem of Deaf adolescents, eighty Deaf and HH students in Slovenian regular and special secondary schools were recruited. The sample answered a Self-Esteem Questionnaire where dimensions such as social, physical and emotional self and confidence were considered (Lesar & Vitulić, 2014). While reviewing further research into the issue of self-esteem, a conclusion that factors such as education and degree of difficulty in social settings, while verifying self-meanings, were the only determinants of self-esteem among the Deaf determined (Carter & Mireles, 2016).

When compared to similar age groups of hearing populations, the sample recorded relatively average scores. There were no differences in the ratings concerning their age differences, gender, and level of hearing loss. However, the respondents from regular schools scored higher than their counterparts enrolled in special schools (Lesar & Vitulić, 2014). However, the findings were only made after controlling the variables initially thought to determine self-worth such as the age of Deaf onset, type of school attended, mode of communication, parents' hearing status and socio-economic status of the family of origin (Carter & Mireles, 2016).

Contrary to the widespread assumption that Deaf adolescents would present with lower self-esteem, most of the studies presented with contradictory information. While looking at the self-concept in terms of social interactions and acceptance as well as ego development, Deaf adolescents' scores were lower compared to the general population. Despite them reporting less satisfaction with the physical health as earlier stated, Deaf adolescents have better views of their physical appearance compared to hearing adolescents.

2.5.2 Identity Formation among Deaf and Hard of Hearing Adolescents

A study of identity development among seven Deaf adolescents in 2014 aimed at proving the hypothesis that due to the challenges faced by the population, identity conflicts were experienced earlier than general populations (Kunnen, 2014). The formation of Deaf Identities among adolescents is dependent on well-researched factors that range from the home environment, experiences at school, and communication mode preferred (Chen, 2014). Further studies looked into different mitigating factors to help improve Deaf adolescents' self-concept including access to hearing aids and better school placement (Brice & Strauss, 2016). There were no significant differences between Deaf adolescents with cochlear implants and hearing adolescents in terms of various self-concept constructs.

The finding was that Deaf adolescents formed their identity constructs earlier on than their hearing counterparts. They chose to identify with their Deafness more than any other characteristic they possessed. Factors that supported the identity development included the challenges faced based on their disability and social support in the school setting (Kunnen, 2014). A new element, the status of hearing loss, was brought to light by Chen's research on the influential factors of Deaf identity development. The factor comprises of the fronts of onset and degree of hearing loss. The general conclusions made concerning the element were that pre-lingual persons identified more as Deaf as opposed to the Hard of Hearing persons (Chen, 2014).

Deaf identity is fundamental for the psychological well-being. It includes different identities such as Deaf, Hearing, Bi-Cultural which is Hearing and Deaf, and Marginal where one cannot fully identify with either of the identities. According to (Chapman & Dammeyer, 2017), the marginal identity reduced Deaf people's psychological well-being. Additional

adverse factors such as duo-disability, low educational levels, and perceived stigma greatly influenced the overall well-being of a Deaf individual (Chapman & Dammeyer, 2017).

2.6 Theoretical & Conceptual Frameworks

2.6.1 Introduction to the Models of Disability

The Medical, Sociological, Linguistic Minority, and Cultural Models of Disability.
The chosen models put hearing loss in context and in reference to how persons living with hearing loss interact with self, society, political, cultural and medical structures of society. They will help in informing how psychopathology can occur in the context of the discrimination faced by the population. Furthermore, the models will assist in comprehending the root of the various risk and resilience factors highlighted in studies elsewhere as affecting and protecting the Deaf and Hard of Hearing adolescents respectively.

Besides, the models of disability will also inform the study as to the various ways organizations, communities and the Deaf and HH people understand themselves. The models also help the persons living with disability to shape their own identities (Retief & Letšosa, 2018). However, it is crucial to keep in mind that the population also whilst it is important to understand themselves, those living in Low and Middle Income (LMIC) countries such as Kenya may not have the opulence of theorizing and understanding themselves (Ngugi *et al*., 2018). This is mostly since they are busy trying to mitigate the multiple challenges and adversities the group so commonly faces. What is most evident is the confusion on how they are to exist as the society refers to them as persons with disabilities while at the same time, they appear able-bodied and are entitled to a life of social gratification (Ngugi *et al.*, 2018).

Likewise, the models shed more light into the social issues of ableism, audism and linguism that form the oppressive and discriminatory dynamics at play (Bauman *et al*., 2013). Despite

their ideas originating from the Western world, their applicability across different societies is similar. The treatment can stem from single individuals, the social, political, and other institutions. The three discriminatory dynamics are evident when others hold low expectations of the persons living with the disability (Charlton & James, 1998). Assumptions that having no disability is more beneficial and denying persons living with disabilities the opportunity and freedom to decide their lives are also forms of the discrimination and so is eugenics and labeling of the group (Charlton & James, 1998; Bauman *et al*., 2013).

Ableism refers to the general reaction and attitude and acts of discrimination against persons living with any form of disability (Campbell, 2009). In relation to Deaf and Hard of Hearing persons, audism and linguism applies rather significantly. Audism means that the hearing world is viewed as superior and thus can exercise its power over the non-hearing world (Bauman, 2004). This has seen discrimination in the group's access to all forms of social, political and health amenities. When it comes to linguism, minority languages are undermined and not used as languages of instruction (Ladd, 2003). All the learners are thus forced to learn the dominant language of the society. Its antidote has been seen as bilingualism where both the dominant and sign language are both valued as assets for the student's education.

2.6.1.1 Medical Model of Disability

The medical model of disability views Deafness as a disability of the physical sense of hearing and also of communication. The model defines hearing disability through comparing it to the expected 'normal' hearing capabilities (Ferndale, 2016; Olkin, 1999). Therefore, Deafness is sought to be addressed using physiological interventions which range from cochlear implants, surgery and the use of hearing aids for the individuals to achieve hearing and speech. This model has seen children and adolescent move from one hospital to another

in an attempt to ‘correct’ their state (Retief & Letšosa, 2018). This is due to the fact that the model also believes that early intervention increases the likelihood of attaining ‘normalcy’. Critics of the medical model of disability state that it creates inadequate meta-narratives where terms like lack, misfortune, disadvantage and deviance from the norm rule the day (Johnstone, 2012).

It has been proven that the model is oppressive as persons living with disabilities are isolated from the rest of society as defective with the urgent need to prevent, treat or rehabilitate (Retief & Letšosa, 2018). Moreover, all these definitions and conceptualization of hearing loss promote the marginalization of the community through stigmatizing them as different from the rest of society (Thomas & Woods, 2003). In order to be treated equally, access information and health, the Deaf and Hard of Hearing person is required to use time, money and resources to become like the hearing person.

2.6.1.2 Sociological Model of Disability

The social model of disability initially, was a reaction of persons living with disability against the segregation promoted partly by the medical model. The group aimed to differentiate the term impairment from disability. The social model clarifies that a disabled person is left to their own resources while an impaired person survives within a social context (Oliver, 1981; Purtell, 2013). This means that when society fails to put into consideration the specific needs of an impaired individual through social structures, modification of the environment and a general accommodating attitude, it disables the person. In contrast with the medical model, the social model shifts responsibility to accept rather than deny the disability from the person to the society. The model advocates for the achievement of social justice and not necessarily the advancement of medicine to minimize disability (O'Connel *et al*., 2008).

2.6.1.3 Linguistic Minority/ Cultural Model

The linguistic Minority model is specific to Deaf and Hard of Hearing persons and borrows from the social model of disability. It emerged in the 1970s particularly in the West. The proponents state that their state is not a disability; rather they desire for the society to recognize their language and culture (Milchalko, 2002; Titchkosky, 2007). However, the model faces distinct challenges as normally; language and culture are passed down from one generation to the other which may not be the case for the Deaf community as children with hearing loss are often times born in hearing families that cannot model the Deaf language and culture (Ferndale, 2016). Furthermore, with the different variety of hearing loss, it seems that some Deaf and Hard of Hearing members automatically belong to the Deaf culture while others are not recognized (Snyder & Mitchell, 2006).

2.7 Conceptual Framework

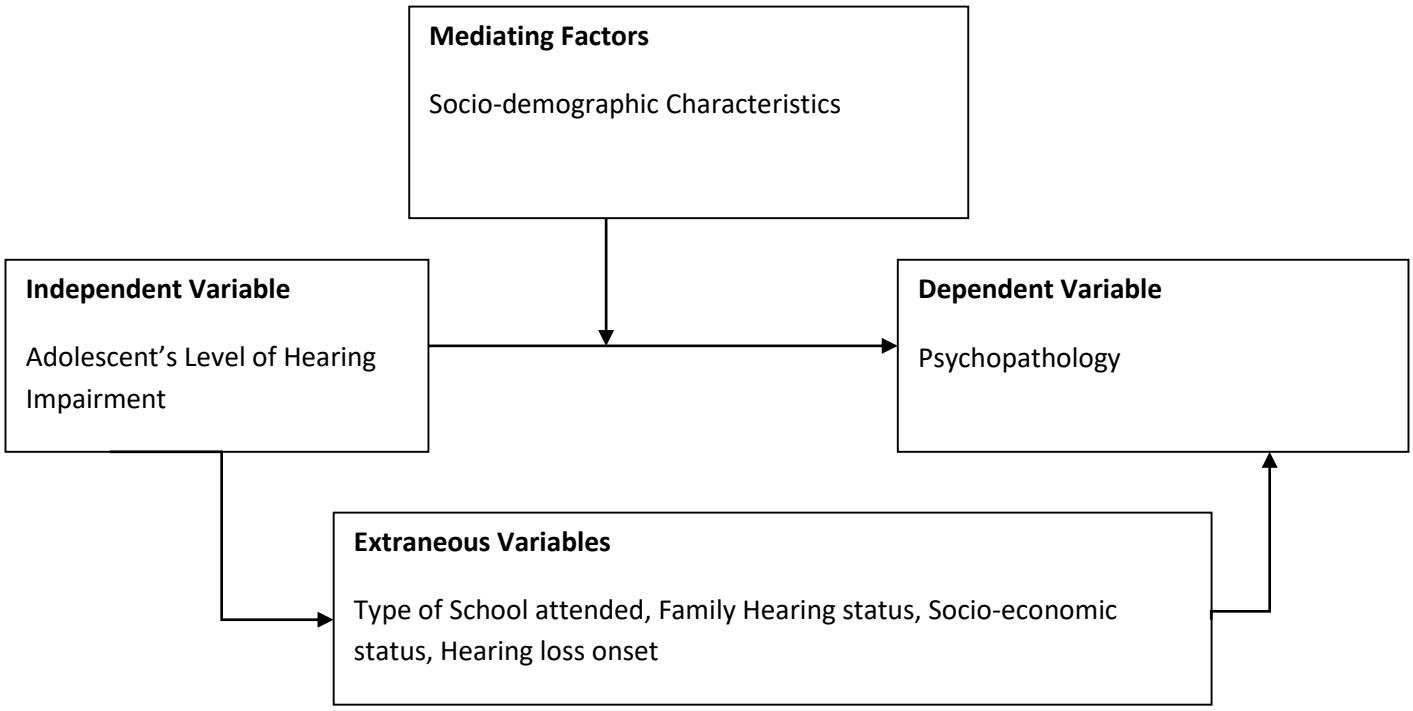

Figure 1: Conceptual Framework

2.8 Rationale/ Study Justification:

The current study was beneficial to different stakeholders concerned with the mental health of Deaf adolescents in Kenya. Information expected to be picked included that which concerns psychopathology and associated risk and resilience factors among Deaf and Hard of Hearing adolescents. Policy makers especially in the mental health and education sectors would thus be in a position to comprehend the situation of the population. Better management strategies can thus be formulated and implemented to ensure better service provision and consideration for the population of Deaf adolescents in Kenya.

2.9 Study Questions & Hypothesis:

2.9.1 Study Questions

1. What are the prevalence and patterns of psychopathology among Deaf and Hard of Hearing adolescents in Nairobi County special unit schools?
2. What are the risk and resilience factors present among Deaf and Hard of Hearing adolescents in Nairobi County special unit schools?

2.9.2 Study Hypothesis

2.9.2.1 Null Hypotheses

1. There was no significant psychopathology prevalence and patterns among Deaf and Hard of Hearing adolescents in Nairobi County Special Unit schools, Kenya.
2. There was no association between Deaf and Hard of Hearing adolescents' in Nairobi County special unit schools' psychopathology, risk and resilience factors.

2.9.2.2 Alternative Hypotheses

1. There was significant psychopathology prevalence and patterns among Deaf and Hard of Hearing adolescents in Nairobi County Special Unit schools, Kenya.
2. There was an association between Deaf and Hard of Hearing adolescents' in Nairobi County special unit schools' psychopathology, risk and resilience factors.

2.10 Study Objectives:

2.10.1 Broad Objective

To determine the prevalence, patterns of psychopathology, associated risk and resilience factors among Deaf and Hard of Hearing adolescents in Nairobi County Special Unit Schools.

2.10.2 Specific Objectives

1. Assess the prevalence and patterns of psychopathology among Deaf and Hard of Hearing adolescents in Nairobi County special unit schools.
2. Describe the associated risk and resilience factors present among Deaf and Hard of Hearing adolescents in Nairobi County special unit schools.

CHAPTER THREE: METHODOLOGY

3.1 Study Design

The study was a mixed method cross-sectional descriptive study employing both qualitative and quantitative methods.

3.2 Study Area Description

This study was conducted at all the learning institutions where Deaf and HH adolescents meeting the age criteria of 11-17 years of age are enrolled in both primary and secondary schools within Nairobi County in Kenya, Africa. These comprised of 9 primary Deaf Units and 1 secondary special schools all public. Nairobi is the Capital City of Kenya with an estimated population of 3.5million which is the largest among all other cities in the Country. The area size of the city is 696 square kilometers with the predominant languages used being Swahili and English despite the people residing there being from diverse ethnic, cultural and racial backgrounds.

3.3 Study Population

The study population was Deaf adolescents at special unit learning institutions in Nairobi County. Corroborative data was also to be obtained from their parents/guardians as well as their teachers/instructors.

3.4 Population Characteristics

Any and all Deaf and Hard of Hearing adolescents enrolled at the special unit schools in Nairobi County aged 11to 17. This is because there are very few persons who fall into this category within the County.

3.5 Inclusion/Exclusion Criteria

3.5.1 Inclusion

- The participants should be Deaf.
- They should be adolescents (Age 11-17 years).
- Able to give informed assent and consent from parents/guardians.

3.5.2 Exclusion

- Participants without a hearing disability.
- Participants aged outside the adolescent bracket (Age 11-17 years).
- Inability to give informed assent and consent from parents/ guardians.

3.6 Sample Size Determination & Formula

Using Fischer's formulae (Rosner, 2011) sampling formula;

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

Where: n – Estimated sample size

d – The level of precision

p - Proportion of those with the condition of interest (Psychopathology)

z – Confidence level

Using a confidence interval of 95%, expected prevalence of 27% of psychopathology among Deaf adolescents (Fellinger *et al*., 2012; Theunissen *et al*., 2014) and a level of significance of 5% (0.05),

$$n = \frac{1.96 \times 1.96 \times 0.27 \times 0.73}{}$$

0.05 x 0.05

n = **303**

Corrected sample size for finite population

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

Where;

n’ = adjusted sample size

n = sample size

N = population size

The population size of Deaf adolescents in selected schools is estimated to be 150.

Therefore, to get n’,

$$n' = \frac{303}{1 + \frac{(303-1)}{150}} = 100.66$$

n’ = 101

3.7 Sampling Procedures/Screening/Selection of Study Participants

All participants from 9 primary Deaf units and 1 secondary special school who met the inclusion criteria were selected using convenience sampling per school until the minimum sample size was achieved. Convenience sampling was best suited as the study concerns a special population. Sources indicate that Deaf children start and attend school later than their hearing counterparts and majority drop out in the course of their education (Global Accessibility News, 2019; Ndurumo *et al.,* 2016; Zanten, 2014). Furthermore, the data available indicated that each school identified had very few Deaf and Hard of Hearing adolescents, who met the inclusion criteria of this study, enrolled. The average number in each school was estimated to be 15 Deaf and Hard or Hearing adolescents meaning that all the schools had to be included in order for the sample size, which in itself was a bit too optimistic, to be reached.

3.8 Recruitment & Consenting Procedures

Study participants was recruited from 9 primary Deaf Units and 1 secondary special school who met the inclusion criteria. They were selected using convenience sampling method until the sample size was achieved. All forms of communication with the Deaf and Hard of Hearing was through KSL which the researcher was well conversant with.

Screening was done to determine whether they met the inclusion criteria. This included offering an informed consent document to the teachers and/or parents/guardians where possible and assent document to the participants with details of the study and giving an opportunity to ask any question they may have had regarding the study.

Consent was sought from the adolescents' teachers and/or parents/guardians where possible and those who allowed their adolescent to participate signed an informed consent form.

In each school, parents/guardians and teachers were also selected and recruited for the study with an objective of triangulating and validating the data collected. The parents/guardians were contacted through the schools' administration while the teachers were approached directly. This all happened concurrently on the days that the adolescent participants were recruited or later. They also went through the consenting process to establish their willingness to participate in the study.

Study participants who met the inclusion criteria and were willing to participate in the study were asked to sign assent forms. They then proceed to undergo screening with:

1. Socio-Demographic questionnaire
2. DSM-5 Self Rated Level 1 Cross-cutting Symptom Measure (Child Age 11-17)
3. Strengths and Difficulties Questionnaire
4. In-depth interviews based on IPA

3.9 Variables- independent, Dependent, Confounders

The independent variable of the study was the adolescent's level of hearing disability while the dependent variable was psychopathology. Other variables included the confounders such as type of school attended, family hearing status, and onset of hearing loss among others. Mediating factors in the study were the socio-demographic characteristics of the Deaf and Hard of Hearing adolescent.

3.10 Data Collection Procedures- Quantitative, Qualitative, Field Data Collection Instruments

The researcher sought approval from the Kenyatta National Hospital/ University of Nairobi Ethics and research Committee. Later, a permit was sought from National Commission for Science, Technology and Innovation (NACOSTI), the Regional Director of Education,

Nairobi, who represented the Ministry of Education, and individual special unit primary and secondary schools in Nairobi County with the population under review enrolled. All the data collection tools used with the Deaf and Hard of Hearing adolescents were in English Language with the method of administration being through KSL. However, the tools administered to the parents/ guardians/ teachers were either in English or Swahili languages apart from when the respondent requires the use of KSL. The principal investigator could communicate in KSL using her training from the Kenya Institute of Special Education. Furthermore, she also included two sign language interpretation experts to help in the data collection process.

3.10.1 Quantitative Aspect

3.10.1.1 Socio-Demographic Data

Once the recruitment process was complete, the quantitative data was collected using various tools. Initially, the researcher-designed socio-demographic questionnaire was administered which was expected to take roughly fifteen minutes.

3.10.1.2 Data from the Strength and Difficulties Questionnaire

Next, the Strength and Difficulties Questionnaire YR1-Adolescents Self Report Measure (11-17yrs) Baseline Version (Goodman, 2002) was administered. The researcher also included parents/caregivers and teachers from the schools in order to map out the Strength and Difficulty Questionnaire. This was because hearing from different respondents would help understand the population better.

The tool screens for emotional and behavioral problems in children and young people. It comprises of 5 sub-scales which are measured using 5 items. The sub-scales are namely; emotional symptoms subscales, conduct problem scales, hyperactivity/ inattention subscale,

peer relationships problem subscale and finally pro-social subscale. Yao, *et al*., (2009) reports that the SDQ internal consistency is strong. They also indicated that the tool showed moderate test and retest reliability. The concurrent validity was also found to be good.

3.10.1.3 Prevalence and Patterns of Psychopathology Data

Lastly, the DSM-5 Self-Rated level 1 Cross-Cutting Symptom Measure (CCSM) - Child Age 11-17 Yrs (APA, 2013) was administered to the same adolescent population. The CCSM used is the level 1 which is brief in nature comprising of a minimum of 1 and maximum of 4 items per domain. In total, the tool measures 25 items across 25 different domains (American Psychiatric Association, 2013). The tool focuses on general measures of psychopathology patterns across the different domains found in the diagnostic categories of the DSM-5. It has been approved to asses a period of up to two weeks leading to the screening. The tool has been proven to have significantly positive test-retest reliability and recommended for use as a standardized clinical data assessment tool. The tool also allows for the assessment of a wide array of psychopathology symptoms (Narrow *et al*., 2013).

3.10.2 Qualitative Aspect

Once the quantitative data collection was complete, the researcher purposively selected 9 participants from the same sample size. This was because rapport had already been established with them rather than having new participants for this part of the study which was a challenge as the population comprises of very few eligible persons. The participants were informed about the second part of the research which was the qualitative aspect. Once consent and assent was obtained, the researcher then facilitated the administering of the in-depth interviews for the selected participants using an in-depth interview guided.

Recording was through the use of a camera since their mode of communication was KSL which is a visual gestural language. This was crucial as the Principal Investigator preferred to observe the facial expressions and body language of the participants as they responded to the questions. This was due to the fact that KSL as a gestural and visual language has meaning embedded in how its users apply their faces and bodies which is equivalent to how tonal variation and intonation is crucial in spoken languages (Hochgesang, 2015).

The use of the video recordings was also to ensure that no meaning was lost in translation as another psychologist with sign language proficiency helped in the interpretation. Thus data collected was as per the participant's expression. Whatever was interpreted by the psychologist with sign language expertise was thus used in consideration with what was observed by the Principal Investigator from the video clips. Upon completion of the study, data on the video clips was protected in various ways. Mainly, all the clips were saved in codes and the faces of the respondents blurred to avoid any form of recognition.

3.11 Recruitment and Data Collection Procedure Flowchart

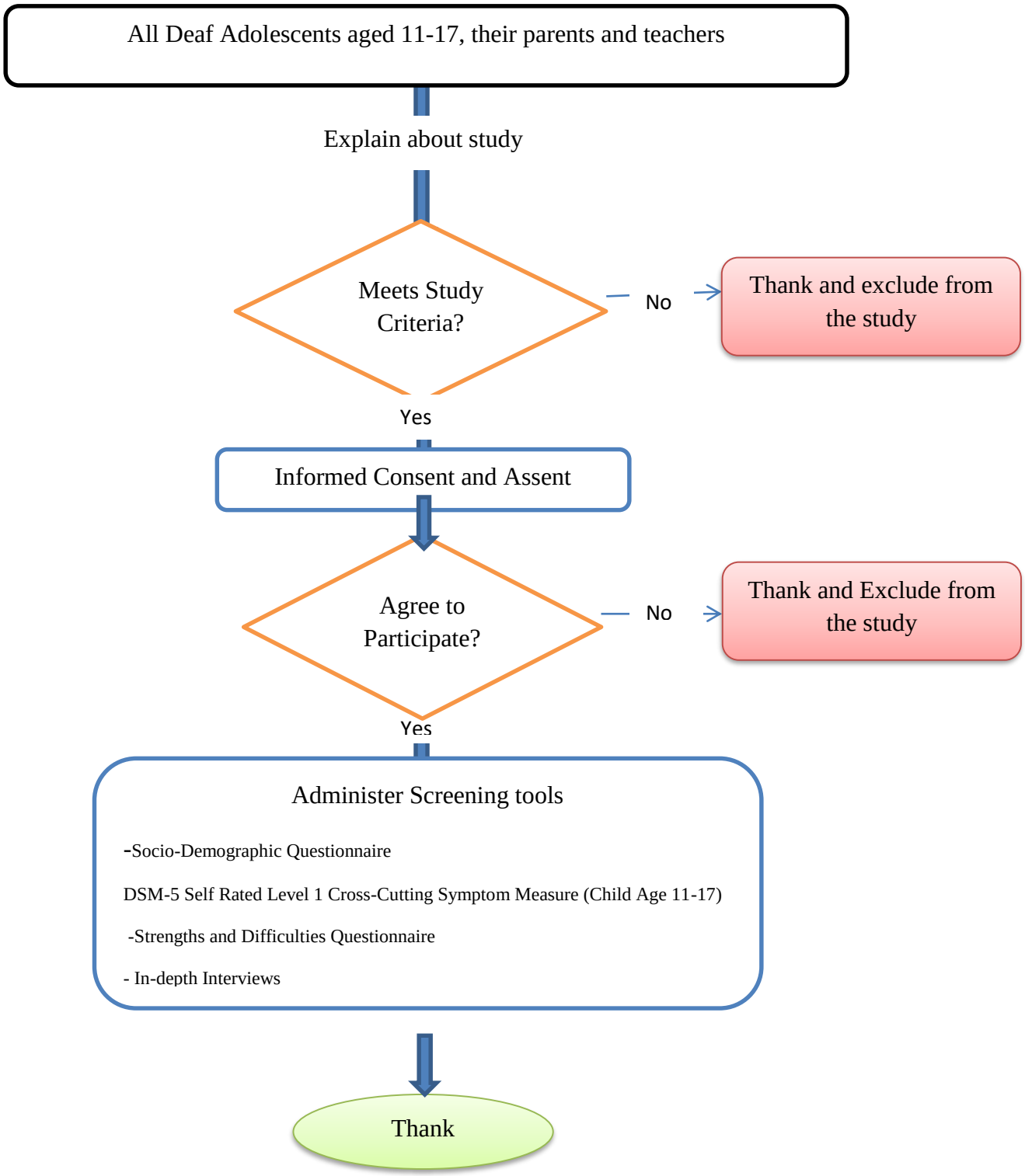

Figure 2: Recruitment and Data Collection Procedure Flowchart

3.12 Materials- Equipment & Supplies

A Camera

200 Socio-Demographic Questionnaires

600 Strength and Difficulties Questionnaires

200 DSM-5 Cross Cutting Symptom Measure

20 In-Depth Interview Guide

200 Pencils and Rubbers

3.13 Quality Assurance Procedures

The study sought approval by the Kenyatta National Hospital/University of Nairobi/ Ethics & Research Committee, NACOSTI, Ministry of Education, and respective schools.

Emphasis was put in place to ensure that study participants fully understood the questions being asked and what the study was about in KSL for clarification purposes.

Information obtained was recorded and stored in locked cabinets and video secure soft wares with participants' names coded and faces blurred. These were only accessible to the researcher.

3.14 Ethical Considerations: Issues and How they were Addressed

Approval to carry out the study was sought from the University of Nairobi/ Kenyatta National Hospital ethics research committee. Persons with active psychopathology were not recruited in this study. Referral to the Kenyatta National Hospital Youth Centre Clinic was also to be made in collaboration with the schools if any participant scored positive on the DSM-5 CCM for any psychological symptom requiring specialized attention. Participants were informed that participation in the study was voluntary and that the information obtained was used only for

the purpose of the study and participants may withdraw at any stage of the study. In the case of noted psychological distress, participants were required to inform the PI who would then make a referral to the KNH Youth Centre for follow up. All information that was collected in this study was confidential. Serial numbers were used instead of names and the hard copies of the filled questionnaires were kept under lock and key and the video clips and soft copies stored in computer systems that were password protected and only accessible to the PI.

3.15 Data Management: Entry, Cleaning, Storage, Security & Quality Assurance, Statistical Analysis Plan

Quantitative data was collected using standardized tools and entered into a password protected Microsoft Access database. After data entry, data cleaning was performed by comparing the entered data with the raw data forms and any anomaly noted was corrected.

Frequency and percentages for categorical variables and measures of central tendency and dispersion for continuous variables were employed for exploratory data analysis. Analysis was conducted to summarize socio-demographic characteristics, participants self-rated frequency of DSM-5 disorder symptoms. Means, Standard deviations and frequencies of emotional and behavioral problems as measured by Strength and Difficulties Questionnaire were computed.

Bivariate association between psychopathology and risk and resilience factors was done by means of correlation analyses, t-tests and Analysis of Variance (ANOVA) for continuous independent variables and chi-square tests/exact tests for categorical variables.

Logistic regression models were used to determine independent predictors of risk and resilience factors for psychopathology after adjusting for all other factors that were significantly associated with it at the bivariate level.

All the quantitative data analysis was done using IBM SPSS version 23 Software for Windows. The results were presented in form of tables, graphs, charts and narratives.

The qualitative data analysis was done using Interpretive Phenomenological Approach (IPA) representing the different risk and resilience factors. Higher and lower level themes were generated from the transcripts.

3.16 Potential Benefits to Study Participants

Study participants were offered referrals to counseling in case they needed it. The data from the study will help the parents/guardians and the clinicians gain knowledge on the prevalence and patterns of psychopathology among Deaf adolescents. This will also aid them to understand better the risk and resilience factors associated with psychopathology which can help in betterment of their management.

3.17 Potential risks

The study researcher did not anticipate physical harm to the participants. However, discussion of potentially sensitive topics would have made participants uncomfortable. In the case of psychological disturbance, the study participants were offered necessary counseling and guidance through a referral.

3.18 Study Results Dissemination Plan

The results of the study were presented in tables, graphs, charts and narratives while their dissemination was determined to be through the publishing of academic paper (s). Mental health talks with all the schools involved would also be prepared. The result findings would also be shared with the Nairobi County.

3.19 Study Limitations and How to Minimize Them

The researcher understands that even with knowledge of KSL, obtained through her training from the Kenya Institute of Special Education, since she was not a native speaker, and would encounter some barriers while communicating with the respondents. Thus she included two sign language interpretation experts to help with the data collection process and a psychologist with proficiency in KSL to help in the analysis of the qualitative data.

3.20 Study Timeline

ACTIVITY	DURATION	MONTH AND YEAR	
Concept paper development	2weeks	February 2019	
Assignment of supervisors	2weeks	February 2019	
Proposal development	3months	March- May 2019	
Proposal defense	1week	May 2019	
Proposal approval	5months	September 2019-January 2020	
Data Collection Approval and Consenting	1month 2weeks	March 2020 September 2021	*Everything on hold due to COVID-19 pandemic
ERC Renewal of Approval	2weeks	August 2021	*Approval had expired after 1year of inactivity
Data collection	6months	September 2021-February 2022	*Working around COVID-19 restrictions to physically collect data
Data analysis	3months	February-April 2022	
Results' defense	1week	May 2022	
Report writing	3weeks	May 2022	
Presentation of dissertation for marking	1month	June 2022	
Dissemination	1month	June 2022	

Table 1: Study Timeline

3.21 Study Closure Plan & Procedure:

The PI plans to disseminate the findings through various ways. One such way will be through the publishing of a prevalence paper and any other paper that is workable in some of the recognized journals. Mental health talks will also be carried out in the schools participating in the study for psycho-education and follow up purposes. The findings will also be made available to the different stakeholders in Nairobi County such as the Ministry of Education, National Council of Persons with Disabilities as well as other relevant organizations. All this will be in an attempt to assist the population being studied now and in the future.

3.22 ROLE OF INVESTIGATOR AND SUPERVISORS

Joan Mutahi

- Development and defense of the dissertation
- Seeking approval from KNH/UON Ethics and Research Committee
- Implementation of the study
- Seeking consent from relevant stakeholders for data collection
- Defense of the study results
- Preparation of final manuscript and other dissemination materials

Dr. Manasi Kumar and Dr. Judy Kamau

- Offer guidance on various stages of the study i.e. dissertation development, implementation of tools for data collection, methodology, analysis of the data, results presentation, and final manuscripts and dissemination efforts.

CHAPTER 4: STUDY FINDINGS

4.1 INTRODUCTION

This chapter gives the results of the study after the analysis of both the quantitative and qualitative data collected among the study participants.

Results start off with the quantitative bit representing the following: socio-demographic characteristics of respondents, prevalence of emotional and behavioural problems based on Strengths and Difficulties Questionnaire – (multi informant) and descriptive comparisons between self-report, parent-report, and teacher report. The prevalence of emotional and behavioural problems on SDQ- self rated are then presented as well as the prevalence of DSM-5 Self Rated Level 1 Cross-Cutting Symptom Measures per psychiatric condition subscales. Associations between DSM-5 CCM and emotional and behavioural problems on SDQ are presented and lastly, independent Predictors of emotional and behavioural problems – Multivariate Logistic Regression are briefly shown.

For the qualitative section of the data analysis, the chapter will highlight a summary of the higher level themes of risk and resilience before delving into the lower level themes elicited from them. This will be done in the form of two tables with quotations of the respondents' responses of the semi-structured in-depth interviews conducted.

4.2 QUANTITATIVE ANALYSIS

A total of 107 participants responded to the quantitative data from 9 institutions of learning that had enrolled Deaf or HH adolescents meeting the inclusion criteria. Out of the 9 schools, 1 was a secondary school with 13 participants in Form 1 and 2 while the rest were in Primary school ranging from Grade 1 to 8 and all adolescents meeting the criteria took part in the study.

These adolescents, N=107 responded to the Socio-Demographic Questionnaire, Strength and Difficulties Questionnaire and the DSM-5 Cross-Cutting Measure. In all the schools, various class and unit teachers responded to the Strength and Difficulty Questionnaire for N= 96 of the adolescents while N=68 parents responded to the parent version of the same. The agreements were only analyzed for matching adolescent-teacher-parent triad responses of the SDQ form, this helped in triangulating the data.

4.2.1 Socio-Demographic Characteristics

Majority of the respondents were Christians (84.1%) while 15.9% were Muslims. 56.1% were female with 43.9% being male and the same percentages were true for 11-14years and 15-17years of age groups respectively. Majority were born Deaf at 85% while a minority did not have another Deaf family member at 78.5%. Majority of the respondents at 69.2% fell in the average/ meeting the required academic expectations category of their current level. 47.7% reported never having a KSL interpreter while 28% reported having access to one sometimes. Other socio-demographic variables' distribution is as represented below in the table and graphs.

Variable	**Category**	**Frequency (N=107)**	**Percentage (%)**
Religion	Christian	90	84.1
	Muslim	17	15.9
Gender	Male	47	43.9
	Female	60	56.1
Age in Years	11-14 Years	60	56.1
	15-17 Years	47	43.9
Age	Mean±SD; Range	14.2±1.8	11-17
Grade/Form	Lower Primary	25	23.4
	Upper Primary	69	64.5
	Lower Secondary	13	12.1
Hearing Status	Deaf	75	70.1
	Hard of Hearing	32	29.9
Born Deaf	Yes	91	85.0

	No	16	15.0
Uses Hearing Aid	Yes	76	71.0
	No	31	29.0
Deaf family member	Yes	23	21.5
	No	84	78.5
Person Living with	Both Parents	74	69.2
	One Parent	28	26.2
	Others	5	4.7
Number of Siblings	<=3	63	58.9
	4-6	29	27.1
	>=7	15	14.0
Number of Siblings	Mean±SD; Range	3.8±2.4	0-12
Birth Order	1st born	44	41.1
	2nd born	20	18.7
	3rd born	26	24.3
	4+	17	15.9
Type of school	Special (Deaf)	13	12.1
	Integrated (Both Deaf and Hearing)	94	87.9
Academic Performance	Average /Meets Expectation	74	69.2
	Below Expectation	33	30.8
Perceived Family Socio-economic Status	Rich	41	38.3
	Average	55	51.4
	Poor	11	10.3
Who do you prefer hanging out with	Hearing	24	22.4
	Deaf & Hearing Impaired	44	41.1
	Hearing & Deaf/Hearing Impaired	33	30.8
	Alone	6	5.6
Place time spent most	School	40	37.4
	Home	27	25.2
	Streets	13	12.1
	Church/Mosque	27	25.2
Supportive family & friends	Most Times	73	68.2
	Sometimes	25	23.4
	Never	9	8.4
Mental health information accessibility	Yes	37	34.6
	Somehow	29	27.1
	No	41	38.3
KSL interpreter access out of school	Most Times	26	24.3
	Sometimes	30	28.0
	Never	51	47.7

Table 4.2.1: Socio-demographic Characteristics of the Respondents

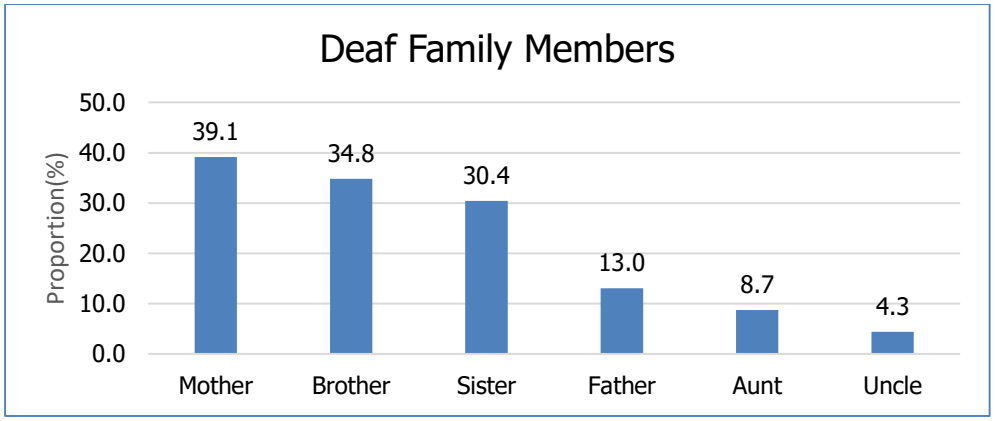

Figure 4.2.1 Socio-Demographic Variables –other Deaf and HH family members

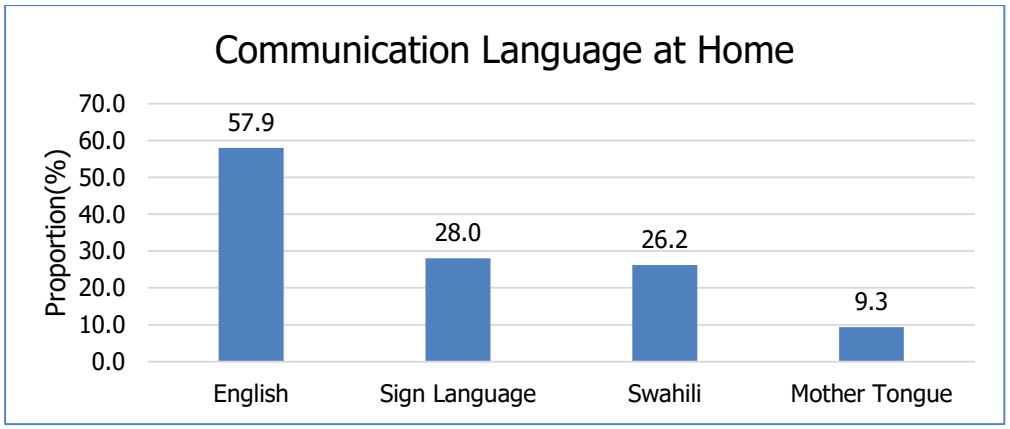

Fig 4.2.2 Socio-Demographic Variables- communication language used at home

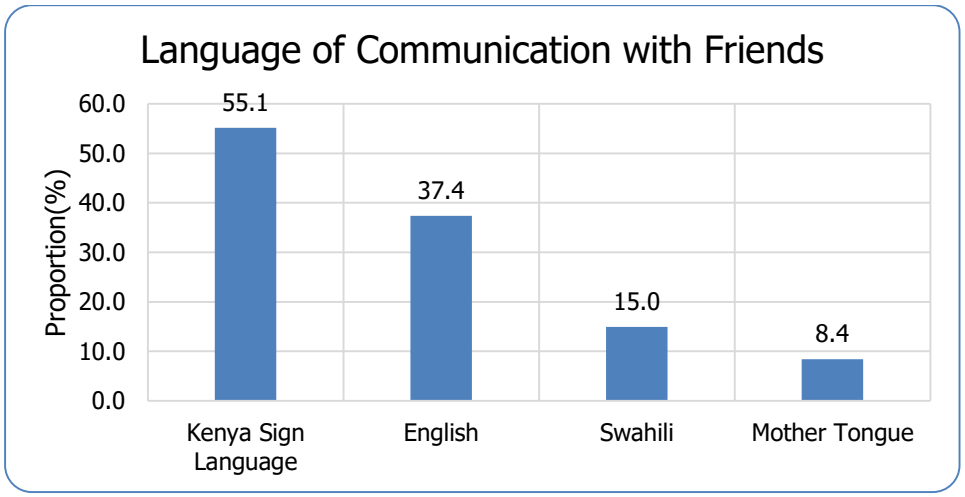

Fig 4.2.3 Socio-Demographic Variables- communication language used with friends

4.2.2 Prevalence of Emotional and Behavioural Problems in Strengths and Difficulties Questionnaire

4.2.2.1 Self-Report

The Strengths and Difficulties Questionnaire (SDQ) was used to measure the various emotional and behavioural problems resulting from the adolescents' internalizing and externalizing specific problems. As they reported on themselves, the adolescents represented the highest prevalence in peer problems at 68.2% followed by emotional problems at 47.7%, conduct problems at 34.6%, Prosocial problems at 21.5% and Hyperactivity/Inattention at 19.6% all as highlighted in the table below.

Condition	Frequency (N=107)	95% C.I
Total Problems	48	44.9(34.6 to 54.2)
Emotional Problems	51	47.7(38.3 to 57.9)
Conduct Problems	37	34.6(26.2 to 43.9)
Hyperactivity/ Inattention	21	19.6(12.1 to 28.0)
Peer Problems	73	68.2(59.8 to 77.6)
Prosocial Problems	23	21.5(14.0 to 29.9)

Table 4.2.4 SDQ Prevalence – Self-Report

4.2.2.2 Multi-Respondent Report

The adolescents reported a higher prevalence of total problems at 44.9% compared to their teachers at 30.2% and parents at 35.3%. While the adolescent and parents reported a higher prevalence of peer problems at 68.2% and 51.5% respectively, their teachers were more concerned with their prosocial problems at 43.8%. Hyperactivity problems were least reported among the adolescents while their teachers reported least prevalence at 27.1% for the same (hyperactivity), emotional and conduct problems, moreover, parents reported hyperactivity and prosocial problems at the lowest prevalence of 11.8%.

Condition	Self-Report (N=107)		Parent-Report (N=68)		Teacher-Report(N=96)	
	N	%(95% C.I)	N	%(95% C.I)	N	%(95% C.I)
Total Problems	48	44.9(34.6 to 54.2)	24	35.3(23.5-45.6)	29	30.2(21.9-39.6)
Emotional Problems	51	47.7(38.3 to 57.9)	20	29.4(17.6-39.7)	26	27.1(17.7-36.5)
Conduct Problems	37	34.6(26.2 to 43.9)	17	25.0(16.2-35.3)	26	27.1(18.8-35.4)
Hyperactivity Problems	21	19.6(12.1 to 28.0)	8	11.8(4.4-19.1)	26	27.1(18.8-36.5)
Peer Problems	73	68.2(59.8 to 77.6)	35	51.5(39.7-63.2)	38	39.6(30.2-50.0)
Prosocial Problems	23	21.5(14.0 to 29.9)	8	11.8(4.4-19.1)	42	43.8(34.4-55.2)

Table 4.2.5 SDQ Prevalence- Multi-Respondent Report

4.2.3 Prevalence of Psychopathology in DSM-5 Cross Cutting Measure

Participants reported a 57% prevalence for symptoms of psychosis. This was attributed to the fact that even through the tool was translated to KSL, there are aspects of psychosis that are hard to explain in sign language especially to adolescents who developed language late in their developmental stage and also because being Deaf or HH may distort the experience of psychotic features. However, other symptoms appeared to be relatable to the population given the reported prevalence rates as represented below.

Depression, inattention and anxiety symptoms were most prevalent at 51.4%, 49.55, and 48.6% respectively while Irritability, Substance Use and Suicidal Ideation were least prevalent at 15.9%, 11.2%, and 6.5% respectively.

Condition		Frequency (N=107)	95% C. I
I.	Somatic Symptoms	40	37.4(28.0 to 47.6)
II.	Sleep Problems	20	18.7(11.2 to 26.2)
III.	Inattention	53	49.5(39.3 to 59.8)
IV.	Depression	55	51.4(42.1 to 61.7)
V.	Anger	29	27.1(19.6 to 36.4)
VI.	Irritability	17	15.9(9.3 to 23.4)
VII.	Mania	41	38.3(29.0 to 47.7)
VIII.	Anxiety	52	48.6(39.3 to 58.9)
IX.	Psychosis	61	57.0(47.7 to 67.3)
X.	Repetitive Thoughts Behavior	46	43.0(34.6 to 53.2)
XI.	Substance Use	12	11.2(5.6 to 18.7)
XII.	Suicidal Ideation	7	6.5(1.9 to 12.1)

Table 4.2.6: Prevalence of DSM-5 Self-Rated Level 1 Cross-Cutting Symptom Measures

4.2.4 Socio-Demographic Characteristics and prevalence of EBP in SDQ

4.2.4.1 Bi-Variate Logistic Regression

Males had higher prevalence of emotional and behavioral problems than females (55.3% vs. 36.7%), and a trend toward statistical significance for this relationship was seen, where males had 2.1-times the odds of emotional and behavioral problems compared to females (95% CI: 0.98-4.66, p-value: 0.056). Older age was associated with emotional and behavioral problems, where those 1-year older had 1.4-times the odds of emotional and behavioral problems compared to those a year younger. Those with above average academic performance had 60% lower odds of having emotional or behavioral problems, compared to those performing below expectations academically (OR: 0.4, 95% CI: 0.2-0.9). Compared to those who perceived their family's socio-economic status as "poor", those perceiving "average" socioeconomic status had 80% lower odds of emotional and behavioral problems (OR: 0.2, 95% CI: 0.04-0.8). A difference in odds of emotional and behavioral problems comparing perceived "rich" individuals to perceived "poor" individuals was not detected.

A visible trend toward significance for an association between social support and emotional and behavioral problems was present. Individuals who reported having support from family and friends sometimes or most of the time had 80% lower odds of emotional and behavioral problems compared to those who never had support from family or friends ("Most times", OR: 0.2, 95% CI: 0.04-1.03, p=0.054, "Sometimes", OR: 0.22, 95% CI: 0.04-1.30, p=0.096). Interestingly, those who had access to a KSL interpreter outside of school only "sometimes" had over double the odds of having emotional or behavioral problems (OR: 2.8, 95% CI: 1.1-6.9, p=0.033) compared to those who never had access to a KSL interpreter outside of school. There was no difference in odds of emotional or behavioral problems among those with access to a KSL interpreter most times compared to those without access outside of school.

There were also no differences in prevalence of emotional or behavioral problems based on other factors evaluated as shown in the table below.

Variable	Category	EBP		cO.R[95% C.I]	p
		No	Yes		
Religion	Christian	50(55.6%)	40(44.4%)	0.90[0.32; 2.54]	0.842
	Muslim	9(52.9%)	8(47.1%)	Ref.	
Gender	Male	21(44.7%)	26(55.3%)	2.14[0.98; 4.66]	**0.056**
	Female	38(63.3%)	22(36.7%)	Ref.	
Age in Years	11-14 Years	37(61.7%)	23(38.3%)	0.55[0.25; 1.19]	**0.127**
	15-17 Years	22(46.8%)	25(53.2%)	Ref.	
Age	Mean±SD; Range	13.8(1.6)	14.8(1.9)	1.35[1.08; 1.69]	**0.009**
Grade/Form	Lower Primary	14(56.0%)	11(44.0%)	0.67[0.18; 2.59]	0.565
	Upper Primary	39(56.5%)	30(43.5%)	0.66[0.20; 2.17]	0.493
	Lower Secondary	6(46.2%)	7(53.8%)	Ref.	
Hearing Status	Deaf	42(56.0%)	33(44.0%)	0.89[0.39; 2.04]	0.784
	Hard of Hearing	17(53.1%)	15(46.9%)	Ref.	
Born Deaf	Yes	50(54.9%)	41(45.1%)	1.05[0.36; 3.08]	0.923
	No	9(56.3%)	7(43.8%)	Ref.	
Uses Hearing Aid	Yes	41(53.9%)	35(46.1%)	1.18[0.51; 2.75]	0.698
	No	18(58.1%)	13(41.9%)	Ref.	
Deaf family member	Yes	10(43.5%)	13(56.5%)	1.82[0.72; 4.62]	**0.208**
	No	49(58.3%)	35(41.7%)	Ref.	
Person Living with	Both Parents	38(51.4%)	36(48.6%)	UD [0.00;]	0.999
	One Parent	16(57.1%)	12(42.9%)	UD [0.00;]	0.999
	Others	5(100.0%)	0(0.0%)	Ref.	
Number of Siblings	<=3	39(61.9%)	24(38.1%)	0.54[0.17; 1.67]	0.285
	4-6	13(44.8%)	16(55.2%)	1.08[0.31; 3.76]	0.908
	>=7	7(46.7%)	8(53.3%)	Ref.	
Number of Siblings	Mean±SD; Range	3.5(2.3)	4.1(2.4)	1.12[0.95; 1.32]	0.185
Birth Order	1st born	24(54.5%)	20(45.5%)	0.94[0.31; 2.88]	0.910
	2nd born	10(50.0%)	10(50.0%)	1.13[0.31; 4.10]	0.858
	3rd born	16(61.5%)	10(38.5%)	0.70[0.20; 2.42]	0.577
	4+	9(52.9%)	8(47.1%)	Ref.	
Type of school	Special (Deaf)	6(46.2%)	7(53.8%)	1.51[0.47; 4.83]	0.489
	Integrated	53(56.4%)	41(43.6%)	Ref.	
Academic Performance	Average and above	46(62.2%)	28(37.8%)	0.40[0.17; 0.92]	**0.031**
	Below Expectation	13(39.4%)	20(60.6%)	Ref.	
Perceived Family Socio-economic Status	Rich	19(46.3%)	22(53.7%)	0.43[0.10; 1.87]	0.263
	Average	37(67.3%)	18(32.7%)	0.18[0.04; 0.77]	**0.021**
	Poor	3(27.3%)	8(72.7%)	Ref.	
Who do you prefer hanging out with	Hearing	13(54.2%)	11(45.8%)	1.69[0.26; 11.07]	0.583
	Deaf & Hearing Impaired	23(52.3%)	21(47.7%)	1.83[0.30; 11.02]	0.511

	Hearing & Deaf	19(57.6%)	14(42.4%)	1.47[0.24; 9.21]	0.678
	Alone	4(66.7%)	2(33.3%)	Ref.	
Place time spent most	School	21(52.5%)	19(47.5%)	1.81[0.66; 4.98]	0.251
	Home	14(51.9%)	13(48.1%)	1.86[0.62; 5.58]	0.270
	Streets	6(46.2%)	7(53.8%)	2.33[0.60; 9.02]	0.220
	Church/Mosque	18(66.7%)	9(33.3%)	Ref.	
Supportive family & friends	Most Times	43(58.9%)	30(41.1%)	0.20[0.04; 1.03]	**0.054**
	Sometimes	14(56.0%)	11(44.0%)	0.22[0.04; 1.30]	**0.096**
	Never	2(22.2%)	7(77.8%)	Ref.	
Mental health information accessibility	Yes	23(62.2%)	14(37.8%)	0.48[0.19; 1.18]	**0.109**
	Somehow	18(62.1%)	11(37.9%)	0.48[0.18; 1.26]	**0.137**
	No	18(43.9%)	23(56.1%)	Ref.	
KSL interpreter access out of school	Most Times	14(53.8%)	12(46.2%)	1.57[0.60; 4.11]	0.357
	Sometimes	12(40.0%)	18(60.0%)	2.75[1.09; 6.96]	**0.033**
	Never	33(64.7%)	18(64.7%)	Ref.	

Note: EBP-Emotional and behavioral problems; cO.R-Crude Odds Ratio; C.I- Confidence interval; Ref-Reference Category

Table 4.2.7: Socio-demographic Factors associated with Emotional and Behavioral Problems (EBPs) – Bivariate logistic regression

4.2.4.1 Multi-Variate Logistic Regression

Variables included in the multivariable model were: gender, age, having a deaf family member, academic performance, perceived family socio-economic status, support from family and friends, mental health information accessibility, and access to a KSL interpreter outside of school. After adjustment for these potential confounders, the association between age and emotional and behavioral problems became statistically significant, where every one-year increase in age was associated with 1.4-times the odds of emotional and behavioral problems (95% CI: 1.1-1.8, p=0.02). There was no longer a detected difference in odds of emotional and behavioral problems by gender after adjustment for confounders. Moreover, after adjustment for confounding factors, there were also no longer a detected association between academic performance and emotional and behavioral problems

The potential association between perceived family socio-economic status and emotional and behavioral problems was not retained after adjustment. Compared to those reporting support from family and friends "sometimes" or "most times", those without support had over 5-times the odds of emotional and behavioral problems, adjusted for potential confounders (OR: 5.5, 95% CI: 0.95-32.05, p=0.058). After adjustment, the relationship between having access to a KSL interpreter outside of school "sometimes" and emotional and behavioral problems was even stronger -- those with access "sometimes" had 3.2-times the odds of emotional or behavioral problems compared to those "never" accessing a KSL interpreter outside of school (OR: 3.2, 95% CI: 1.1-9.7, p=0.04).

Variable	**Category**	**aO.R.**	**95% C.I.**		**Sig.**
			Lower	**Upper**	
Gender	Male	1.76	0.70	4.42	0.226
	Female	Ref.			
Age	Years	1.37	1.05	1.79	**0.020**
Deaf family member	Yes	1.68	0.53	5.25	0.376
	No	Ref.			
Academic Performance	Average /Meets Expectation	Ref.			
	Below Expectation	1.26	0.44	3.60	0.666
Perceived Family Socio-economic Status	Rich	Ref.			
	Average	0.48	0.18	1.30	0.148
	Poor	2.11	0.36	12.38	0.408
Supportive family & friends	Most Times	Ref.			
	Sometimes	1.07	0.34	3.34	0.910
	Never	5.51	0.95	32.05	**0.058**
Mental health information accessibility	Yes	Ref.			
	Somehow	1.75	0.51	6.05	0.376
	No	2.38	0.73	7.76	0.149
KSL interpreter access out of school	Most Times	1.22	0.37	4.01	0.740
	Sometimes	3.19	1.06	9.65	**0.040**
	Never	Ref.			

Note: aO.R-adjusted Odds Ratio; C.I- Confidence interval; Ref-Reference Category

Table 4.2.8 Independent Predictors of Emotional and Behavioral Problems (EBP)-multivariate logistic regression.

4.2.5 Patterns of psychopathology/Cross-Tabulation of SDQ and DSM-5 CCM

The odds of having emotional problems were 2.6-times higher among those with somatic symptoms compared to those not reporting somatic symptoms (95% CI: 1.17-5.89). Those reporting sleep problems had 2.8-times the odds of any emotional or behavioral problem compared to those not reporting sleep problems (95% CI: 1.00-7.60).

Those with inattention had over three times the odds of emotional problems (OR: 3.3, 95% CI: 1.5-7.3), or any emotional or behavioral problem (OR: 3.6, 95% CI: 1.6-8.1) compared to those not reporting inattention.

Depressed individuals had over 3-times the odds of having emotional problems (OR: 3.3, 95% CI: 1.5-7.4) or any emotional or behavioral problem (OR: 3.1, 95% CI: 1.4-6.9) compared to those not depressed.

Anger put individuals at 2.7-times the odds of having emotional problems compared to those not reporting anger (95% CI: 1.1-6.6). Irritable individuals had over 7-times the odds of any emotional or behavioral problem (OR: 7.7, 95% CI: 2.1-28.7), 4-times the odds of emotional problems (OR: 4.5, 95% CI: 1.3-14.7), and over 4-times the odds of conduct problems (OR: 4.5, 95% CI: 1.5-13.5) compared to those without irritability.

Those reporting mania had over double the odds of emotional problems compared to those not reporting mania (OR: 2.4, 95% CI: 1.1-5.3).

Anxiety put individuals at 3.3-times the odds of any emotional or behavioral problem (95% CI: 1.5-7.3), and 2.3-times the odds of conduct problems (95% CI: 1.0-5.3) compared to those without anxiety.

Psychosis increased the odds of most types of emotional and behavioral problems. Those with psychosis had 5.6-times the odds of peer problems (95% Ci: 2.3-13.6), 3.4-times the odds of prosocial problems (95% Ci: 1.2-10.1), 3.5-times the odds of conduct problems (95% CI: 1.4-8.5), 2.5-times the odds of emotional problems (95% CI: 1.1-5.6), and overall, 4.9-times the odds of having any emotional or behavioral problem (95% CI: 2.1-11.5), compared to those without psychosis.

Having repetitive thoughts was associated with 2.8-times the odds of conduct problems (95% CI: 1.2-6.4), 2.9-times the odds of peer problems (OR: 2.9, 95% CI: 1.2-6.7), and 3.2-times the odds of any emotional or behavioral problem (95% CI: 1.4-7.1) compared to those without repetitive thoughts.

Substance use was associated with 3.5-times the odds of hyperactivity or inattention (95% CI: 0.9-12.5) and 4.3-times the odds of any emotional or behavioral problem (95% CI: 1.1-16.9) compared to those not using substances.

Suicidal ideation was associated with 8.3-times the odds of having any emotional or behavioral problem (95% CI: 0.9-71.4) compared to not having suicidal ideation.

Symptom	Status	Total Problems	Emotional Problems	Conduct Problems	Hyperactivity/ Inattention	Peer Problems	Prosocial Problems
		O.R[95% C.I]	O.R[95% C.I]	O.R[95% C.I]	O.R[95% C.I]	O.R[95% C.I]	O.R[95% C.I]
Somatic Symptoms	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	1.93[0.87; 4.26]	2.63[1.17; 5.89] **	1.46[0.65; 3.30]	1.33[0.50; 3.51]	1.14[0.49; 2.66]	0.68[0.25; 1.82]
Sleep Problems	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	2.76[1.00; 7.60] *	1.85[0.69; 4.97]	1.72[0.64; 4.64]	1.48[0.47; 4.66]	1.50[0.50; 4.53]	1.28[0.41; 3.98]
Inattention	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	3.62[1.62; 8.08] **	3.30[1.49; 7.29] **	2.19[0.97; 4.95]	1.87[0.70; 4.97]	4.21[1.72; 10.31] **	2.27[0.87; 5.93]
Depression	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	3.13[1.41; 6.94] **	3.33[1.51; 7.38] **	1.95[0.86; 4.40]	1.33[0.51; 3.49]	1.54[0.68; 3.48]	0.83[0.33; 2.10]
Anger	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	1.77[0.75; 4.18]	2.73[1.12; 6.64] *	1.83[0.76; 4.39]	1.45[0.52; 4.07]	2.84[0.98; 8.26]	1.60[0.59; 4.31]
Irritability	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	7.69[2.06; 28.71] **	4.45[1.34; 14.71] **	4.51[1.51; 13.48] **	1.93[0.60; 6.24]	4.14[0.89; 19.25]	1.67[0.52; 5.34]
Mania	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	1.78[0.81; 3.92]	2.40[1.08; 5.34] **	1.37[0.61; 3.09]	1.61[0.62; 4.22]	2.17[0.89; 5.29]	1.04[0.41; 2.69]
Anxiety	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	3.30[1.49; 7.32] **	1.89[0.88; 4.08]	2.32[1.03; 5.26] *	1.96[0.74; 5.21]	2.22[0.96; 5.15]	1.88[0.73; 4.83]
Psychoses	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	4.91[2.10; 11.48] ***	2.52[1.14; 5.57] *	3.49[1.44; 8.46] **	1.66[0.61; 4.52]	5.56[2.28; 13.56] ***	3.43[1.17; 10.10] *
Repetitive Thoughts Behavior	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	3.19[1.44; 7.08] **	1.87[0.86; 4.06]	2.81[1.24; 6.39] **	1.26[0.48; 3.29]	2.85[1.17; 6.95] *	1.03[0.40; 2.60]
Substance Use	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	4.31[1.10; 16.94] *	1.62[0.48; 5.48]	3.03[0.89; 10.34]	3.53[0.99; 12.52] *	2.54[0.52; 12.29]	2.00[0.54; 7.35]
Suicidal Ideation	No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Yes	8.29[0.96; 71.41] *	1.50[0.32; 7.07]	2.71[0.57; 12.80]	3.42[0.70; 16.61]	UD[0.00;]	1.50[0.27; 8.31]

Table 4.2.9: Association between DSM-5 Self-Rated Level 1 Cross-Cutting Symptom Measures and Emotional and Behavioral Problems

4.3 QUALITATIVE ANALYSIS

Qualitative interviews were conducted using an interview guide comprising of several questions that aimed at eliciting participants' lived experiences as Deaf and Hard of Hearing adolescents. A total of 9 participants were interviewed in Kenyan Sign Language following the set methodology as discussed in chapter 3.

Transcripts were used as the data for this analysis using Interpretative Phenomenological Approach aiming at crystallizing personal lived experiences in the participants own terms. This was because living as a Deaf/ HH adolescent is considered novel given that the population comprises of fewer numbers compared to their hearing counterparts. This approach would also guarantee an in-depth account of the participants' story considering that the sample size is small meaning that ample time would be allocated per interview in an empathetic environment familiar to them. Analysis focused on being grounded in an inductive style for close examination of the data in its relevant context.

Analysis was done in the following process:

I. Step 1: Transcription of participants' interviews done by the researcher. This was done in collaboration with a professional Kenyan Sign Language interpreter to ensure that no meaning was lost in translation.

II. Step 2: Reading and Re-reading of the transcripts by the researcher and another psychologist with Kenyan Sign Language proficiency. This was aiming towards comprehension of the accounts. Experiential statements and exploratory notes were noted down for each transcript.

III. Step 3: Reading of transcripts with the aim of identifying the emergent high level themes of 'Resilience' and 'Risk'

IV. Step 4: Deeper definition of the emergent high level themes into their respective emergent lower level themes. These were stated in psychological terminology as the psychologists tried to make sense of the relationships between these emergent themes.

V. Step 5: Clustering of lower level themes under the main categories of 'Risk' and 'Resilience' for consistent coherent connections to be made

4.3.1 Higher level themes of risk and resilience

The participants identified various risk and resilience factors which were identified as the higher level themes of this study based on its objectives. Stigma, reaction to the stigma, meaning making of Deafness etiology, adjustment issues regarding Deaf state, language barrier, knowledge gap, poverty, and adverse childhood events were identified as risk factors in the participants' transcripts. However, knowledge, meaning making of Deaf etiology, support, Deaf community, aspirations, and Deaf community advocacy were reported and identified as high level resilience factors among the population.

4.3.2 Lower Level Themes and Relevant Quotes from participants (N=9)

4.3.2.1 Risk factors Identified

This section goes into a deeper analysis of the higher level theme of risk factors breaking it into deeper lower level themes and identifying direct quotes from the respondents. Risk factors as listed above included: stigma, reaction to the stigma, meaning making of Deafness etiology, adjustment issues regarding Deaf state, language barrier, knowledge gap, poverty, and adverse childhood events.

4.3.2.1.1 Stigma

Participants described stigma in a number of ways including social stigma where they described the general public's reactions to the knowledge that they were Deaf. Majority responded that people would respond with shock, laughter, mockery, gossip, discrimination, and curiosity while others

would be ignored and left to fend for themselves building the other lower theme of lack of inclusivity.

WP102: "I was born Deaf. Different people were not happy about it, they would have concerns like, "why was this person born Deaf?" And then, later on even they continue asking me whether I can hear or not. The reaction of the people is mostly that of shock surprise concerning my Deaf state. Others will abuse, some will look down on me, some will laugh and then they would wonder how one become Deaf…"

AK007: "I think the biggest problem that Deaf people experience is that Hearing people are not able to and do not want to communicate with them well. So there is a lot of ignoring and being left out."

Other respondents also described instances where they were automatically labeled with a 'disability' status and some would not be taken to school by their parents thus the parental stigma and rejection lower level theme.

WP100: ": Most parents would think school is not important for their Deaf children, like they would want them to stay at home. I like it when they come here and are able to be shocked that people can care and the teachers are able to teach well and the children are able to understand. But then sometimes when those children join school late, it is very hard for them to concentrate, to pay attention in school, they are not able to sit it consistently through the lesson and things like that because they were not used to it."

Stigma was also reported in terms of invisibility where there was the general assumption that the participants were able to hear since Deafness is invisible as opposed to other forms of disability such as being blind.

AK002: "The usual first impression people and friends have is that I am hearing they would hardly think that I am Deaf."

4.3.2.1.2 Adjustment Issues in Reaction to the Stigma

Some respondents reported that they often felt helpless when they experienced stigma and would result to resigning to the fact that this was their life.

WP112: "…So what I think is that I just leave them alone and just remain patient." …I am just usually just silent and then I go home and then stay at home."

4.3.2.1.3 Meaning Making of Deafness Etiology

A participant reported Deafness being attributed to cultural and religious etiology.

WP112: "…So let me tell you about my other mother. We used to live together, and then there was always lots of things about the devil and things. For her, she thinks the devil made me to be Deaf so we had to move and now move to a different place and now with the different mother that I have now things are okay. They are better."

4.3.2.1.4 Adjustment Issues due to Individual Response to Deaf State

Various responses were recorded including incongruence, uncertainty, denial, and a general lack of expression of participant's feelings to their state.

AKOO4: "…I have prayed to God (like) in the past, past years. In class 4, I always asked God that I may be able to hear…"

AK002: "Sometime I feel good about it and sometimes I feel bad about it."

4.3.2.1.5 Language Barrier

Language barrier was illustrated by the inaccessibility of interpreters, lack of inclusion, and minimal understanding since majority of the population tends to be hearing.

AKOO3: "…. I do not have an interpreter out of here, home or even in church. I only communicate with my mother. So my mother is my only interpreter."

WP100: "…Most of the time there is a lot of confusion when we are interacting because of language. Most of them are hearing and there is a huge problem and we don't have interpretation."

AK007: "…I think the biggest problem that Deaf people experience is that Hearing people are not able to and do not want to communicate with them well…"

AK008: "…Most of the time, we do not communicate, maybe just greetings, asking how I am and that just that."

AK004: "…Communication, most of them want to communicate orally and I am not able to fully understand them because I can only get little communication orally."

4.3.2.1.6 Knowledge Gap

There was widespread knowledge gap when it came to mental health where some respondents had complete lack of and limited insight, as illustrated by the following responses. Moreover, some respondents described mental health in the context of disability which was what they were exposed to in their lives as Deaf and HH persons.

WP102: "Mental health? What is mental health? Like when someone is born by parents, yes, then they have to go to school and then some have different disabilities like being blind, Deaf. And so, what are the difficulties that they go through? Like those who are blind can't see, how would they interact with the Deaf people and other people with disabilities? Like people who do not have, their legs, or are broken or things like that, telling them sorry, caring for them, just being caring with them, and being together interacting well in unity like here in school.

When you see someone has a different disability, like they are Deaf and you see them and you want to understand why and trying to see when they have challenges with communicating using sign language. For them to understand, for the two groups to be united in that regard and even in the other places when you find other people with disabilities

When accidents happen, trying to help them prevent accidents. Like helping the blind to cross the road, and I think that is good and just generally trying to find out what is happening with other people with disabilities and seeing how to help"

WP100: "Like for example when people are at home, when I am going home and meet someone with a disability. I try to help them get home safely and they usually thank me and I can go on my way. Trying to look at what other challenges people living with disabilities people have, like for instance, the blind and helping them out so that they do not fall. Generally, just assisting them and also trying to help Deaf people and caring for everyone. I think that is what mental health is."

AK004: "…Am not sure. I think it means that one has problems"

AK008: "…I do not understand what stress is…I do not think I am worried or anxious."

4.3.2.1.6 Poverty

Poverty was cited as a source of difficulty for the participants where it resulted in family separation, lack of basic needs, limited conducive education setting, and having other members of the family with a disability.

AK004: ": I just stay with my sister in the house. So I just moved in with my elder sister who has a job so we just stay the two of us. So my sister really helps my mother out by taking care of us…"

"…Yes, we do have problems. Like, for example we have to stay sometimes waiting for money to pay for food. I am okay with the clothes because some people shared some clothes with me so I have a lot of clothes"

AKOO3: "…No, he refuses to support us so it is my mum's sole responsibility to make sure that we have eaten, we have come to school and all those things." – When asked what support his father provided now that he was separated from his mother.

"…We are eight of us in school. Only one of us is hearing, all the others are Deaf. Eight are Deaf, and one is hearing. So in total, nine siblings."- Same participant on being asked about his siblings

WP100: "…But sometimes because we share the same room with these younger children in kindergarten and other lower grades. Most of the time they will be making noise in class, they will be disturbing so it is not easy to understand with them around. But then I find myself telling them to be quiet so we can study."

4.3.2.1.7 Adverse Childhood Events

The participants pointed to troubled childhoods where they had been or were still parentified, exposed to negative social issues, were witness to parental strife and separation, lived in unstable home environments, experienced corporal punishment, loss and grief, among other associated adjustment issues due to adverse childhood events.

WP102: "So for myself, I think my biggest problem or challenge is when people are abusing each other, I think for me that is a challenge. So I try to tell them that that is not good. For instance, sometimes my parents get annoyed, so that is usually very challenging and sometimes it disappoints me that that happens. When parents are arguing, when mothers are not understanding and then there is a problem between parents and children. So that for me is a challenge. So most of the time, I would want to ask the parents that if you have any problem and are getting angry it would be better

to ask the children what is going on. This is usually very disappointing. Like in the home, in the family, groups. So I think that is challenging." ...

"...Sometimes I try to ask, like for example my mum I would try to ask her to be happy, to change and to understand that marriage sometimes when they are married, like to have nice stories together with their children. Like even the Deaf when they are trying to talk, trying to be patient and not adding onto the different problems that someone has. I think parents sometimes just have a problem with that. Like some parents who are taking alcohol, that is usually very challenging. They have to keep repeating, and then I do not understand why that happens. That is a challenge that can even sometimes even lead to problems with the police. Sometimes some parents hear, they obey and life becomes good."

AK004: "...It's just that my mum and dad just separated, I can't remember why. And because there were a lot of stress and arguments, fights in the house... Only my sister understood and she was able to tell me what was going on about my parents' arguments but it caused us a lot of stress and finally now they separated and at least now we can rest, there's no more that."

WP112: "Before, I had I big challenge because of the other mother who used to beat me a lot. But now that I have changed and I have a different mother, I think life is good. My biological mother was a bad person, but then now I have a different mother so she is okay."

AK003: "I was born hearing and then after sometime I started having pain. We were born two twins, and then one of us when my mum was pregnant she started having issues and complications so she had to be rushed to the hospital. So my other twin died and I was the only one who survived. So she had to stay there for some time when I was just an infant. And we left my sibling in the hospital because he was dead..."

AK008: "Most of the time am usually very worried like for example when I get sick like when I have a headache or a stomach ache, so I go to the hospital am able to be assisted or maybe I was just tired."

4.3.2.2 Resilience Factors Identified

This section goes into a deeper analysis of the higher level theme of resilience factors breaking it into deeper lower level themes and identifying direct quotes from the respondents. Resilience factors as listed included: knowledge, meaning making of Deaf etiology, support, Deaf community, aspirations, and Deaf community advocacy

4.3.2.2.1 Knowledge

Some respondents had some form of knowledge concerning mental health including substance use, stress, and anger among some others.

AK007: "Aaah…mental health…I would not say that I have any stress. But most of them time, it is when they are having very serious things. For example, it is when while trying to interact and one is complaining and another gets feelings like anger. But most of the time I am not sure what it means."

*WP112: "I think there is a lot of drug abuse, there at home. And I think that that is bad. Like I think those ones have some mental issues…" "*I *think when people help, then I am not able to have that worry. Like for example when I fall, people are able to help me so that I do not have stress."*

4.3.2.2.2 Meaning Making on Deafness Etiology

Religion was mentioned as a source of meaning and explanation for an adolescent's Deaf state.

WP100: "…I thank God, God created me like that and put me in my mother's womb as a Deaf person."

4.3.2.2.3 Support

The participants cited various sources of support ranging from social, family, school, community, and financial as represented below.

WP102: "Growing up, from birth till now, I think the teachers have been important because they have taught me and I have been able to understand sign language. Like my parents have also been able to understand sign language and that is good. And, some of my hearing friends also are able to help me. So when they notice that I am Deaf, we have unity, we understand sign language. Some understand quite little sign language and it is hard. So I am like able to teach them, so maybe I think with time I think that is still okay." "…About myself, so like being here in school, the teacher teaches well and then I try to understand…So sometimes, I usually think it is better. Like for example with my hearing friends, we are able to talk a little bit, teach them sign language, they are able to understand…But some people understand sign language like in the hospital, so they are able to understand like English which also helped in the decision for me to go to school…I think I am happy person; I have a lot of happiness. When my friends have problems, maybe at home, we are able to grow together and solve them. So that is a good thing about my friends. We like encouraging one another, with the children, trying to make sure that we are having fun in different ways. Caring for children, like in the house and all that. I think happiness generally."

AK005: "…My relatives are the best because, we communicate well as they know Sign Language, I keep teaching them and they understand it even through writing."

AK007: "…actually all is good. I get everything that I need in terms of food, clothing and everything. My mum and also my dad provide well."

4.3.2.2.4 Deaf Community

Acceptance, inclusion/community, sense of belonging, identity, and a desire to connect with others were all included in the participants' responses.

AK005: "...It's good, I love it, it's normal. My relatives are the best because, we communicate well as they know Sign Language, I keep teaching them and they understand it even through writing."

AK002: "...Because the Deaf have their own language, that makes me feel good that we can communicate together." "...Because I found out that there are a lot of Deaf people. That I can interact with at any time, for instance, my neighbor is Deaf."

AK007: "...Because I am capable of the things that the hearing people can do and also because I can talk and communicate in Sign Language."

AK005: "...Knowing Sign Language, being able to communicate. Sign Language is a beautiful language and I love it."

AK003: "...Eight are Deaf, and one is hearing. So in total, nine siblings… so I will just have interactions with my family and maybe we have stories together."

WP102: "...And not the Deaf just staying on their own, or the hearing staying on their own and abusing the Deaf. No. Trying to help them understand that maybe abuse is not good and we need to be friends and we need to care for one another, not to be angry just to be happy friends who are able to interact with each other. And now they are able to understand that."

4.3.2.2.5 Aspirations

The respondents highlighted their aspirations for the future based on careers that they had interacted with and what they enjoyed to do all building onto their desire for better conditions.

WP102: "After school, I would like to go to high school obviously and then I finish and then go to university and learn about computers. Because I would like to have a job that involves computers, so I hope teachers will be able to teach me and I can understand computers… Later on, I'd want to maybe show my parents of what I have achieved and they will be happy because I understand computers.

And I will look for a job and once I get a job, maybe through my Deaf friends' groups or some other place. For example, maybe someone wants someone who can type for them and things like that, I think that would be fine for me."

WP100: "My father also asked me the same thing, and I told him that I want to be a chef and I got a lot of support from him. So I feel like that is okay and I'll continue to pursue it. I like cooking food, I enjoy cooking food."

WP112: "I want to become a teacher. And I want to teach PP1, because I like children, I love children a lot."

AK005: "I encourage them through like in class for them to learn because school is good for them and I am always inviting and welcoming them."

4.3.2.2.6 Deaf Community Advocacy

The respondents reported reaching out and supporting others, having a personal responsibility to address the social stigma, and need to encourage other Deaf persons in their community.

WP100: "…because we need to care for each other and respect each other as we are playing. Most parents would think school is not important for their Deaf children… But then for me, I try to encourage them so that they are able to understand why it is important to go to school…"

WP102: "So like when I see other Deaf children are happy and doing their work, and studying. Finding out if they have any problems and trying to see what they would want if they had any. Because they need to obey the teachers; they need to continue understanding the content that they are reading helped by the different teachers, like when they are being taught ABCDs, how to spell. I think paying attention for them is very important so that they are able to understand how to spell their names, how to understand different signs"

CHAPTER 5.0 DISCUSSION, STRENGTHS AND LIMITATIONS, CONCLUSION, AND RECOMMENDATION

5.1 DISCUSSION

This is the first mixed, multi-informant study in Kenya formally assessing the prevalence, risk and resilience factors of the population. This section of the study highlights the major findings on the study population and their comparison to other similar studies conducted in the past in regards to the study objectives.

5.1.1 Study Population

This study expected to have 101 participants and got 107 out of 9 Deaf Units within Nairobi county. Their teachers and parents also responded to one of the tools used. For the population, being Christian, female, and aged 11-14years in upper primary, having being born Deaf, with no other member of the family being Deaf were the most prevalent socio-demographic characteristics. (Adeniyi, Omigbodun, & Adeosun, 2021)However, being of an older age than your counterparts, never having support from one's family, and sometimes having KSL interpreters increased one's likelihood of developing EBPs. Theunissen et.al., (2014)found that social support was significantly associated with developing EBPs among a similar population in America and advocated for healthy social support systems for them. This could be because having a sense of community understanding and a sense of belonging as highlighted also in the qualitative data was considered protective of the population's mental health.

5.1.2 Prevalence of EBPs and Psychopathology in Deaf and HH Adolescents

This study showed that conduct problems among Deaf and HH adolescents were at a 34.6% prevalence while hyperactivity problems were reported to be at 19.6% prevalence. While Hindley (2005) postulated where Deaf children were often diagnosed with Conduct disorder and Attention

Deficit and Hyperactivity Disorder (ADHD). This could be explained by the fact that externalizing problems occur more in the population due to the language barrier cited as a risk factor that often leads to frustration among the population.

Moreover, the population self-reported on having 41.2% total difficulties, 44.1% emotional problems, and 69.1% peer problems while their counterparts in Germany reported 43% total difficulties and emotional problems as well as 50% peer problems (Pinquart & Pfeiffer, 2018) which was almost close indicating that the population struggled with externalizing problems more.

When it came to teacher responses, 30.9% total difficulties were reported while Nigerian teachers reported a 65.5% total difficulties prevalence according to Adeniyi and colleagues (2019). Given that the teachers and adolescents seemed not to agree when reporting on various EBPs in this study, it was also discovered that similar disagreements especially in the hyperactivity and emotional were present among the duo in Nigeria (Adeniyi, Omigbodun, & Adeosun, 2021). This could be explained by the fact that the pair tend to agree more in prosocial problems in other studies among hearing populations. Furthermore, the SDQ responses was always identified as having less agreement between responding groups in other studies.

The study found moderate to high internalizing and externalizing problems as psychiatric symptomatology. Depression was reported at a 51.4% prevalence and suicidal behaviour at 6.5% prevalence. In America, Deaf and HH adolescent presented with 33.3% depressive symptoms and 14% suicidal behaviour (Landsberger, Diaz, Spring, Sheward, & Sculley, 2014) indicating that internalizing aspects were present in the population. In addition, (Kvam, Loeb, & Tambs, 2007) found that female Deaf persons tended to present with more anxiety and depressive symptoms while this study found no statistical significance of gender in regards to developing psychiatric symptoms among the population.

5.1.3. Risk Factors Associated with EBPs and Psychopathology in Deaf and HH Adolescents

Qualitative findings highlighted risk factors of stigma, language barrier, poverty, adverse childhood events, among others for mental health problems. One such response was when a participant reported that, *"…Most of the time there is a lot of confusion when we are interacting because of language. Most of them are hearing and there is a huge problem and we don't have interpretation."* This sentiment was echoed by several others who stated the following: *"…I think the biggest problem that Deaf people experience is that Hearing people are not able to and do not want to communicate with them well…". "…Most of the time, we do not communicate, maybe just greetings, asking how I am and that just that." "…Communication, most of them want to communicate orally and I am not able to fully understand them because I can only get little communication orally."* These build on to the quantitative report that psychiatric symptoms were associated with Emotional and Behaviour Problems (EBP) Deaf and HH adolescents with inconsistent access to an interpreter and those with no social support had higher risk for EBPs. Furthermore, this has been reported to play out in mental health service provision to Deaf adults where language barrier increased the chances of misunderstanding and misdiagnosis of various EBPs and psychopathology (Ngugi & Mwiti, 2018).

The population under study also reported on having adverse childhood events as contributing to emotional problems where a participant cited their parents' conflicts and separation as to have increased stress levels at home. *"…It's just that my mum and dad just separated, I can't remember why. And because there were a lot of stress and arguments, fights in the house… Only my sister understood and she was able to tell me what was going on about my parents' arguments but it caused us a lot of stress and finally now they separated and at least now we can rest, there's no more that."* Another respondent pointed out her biological mother's rejection which had made life difficult to live thereby increasing the likelihood of internalizing problems. *"Before, I had I big challenge because of the other mother who used to beat me a lot. But now that I have changed and I have a*

different mother, I think life is good. My biological mother was a bad person, but then now I have a different mother so she is okay." This therefore emphasizes on the need for support and acceptance of the Deaf and HH adolescents first and foremost in their homes before it can be extended to the community.

5.1.4 Resilience Factors Associated with EBPs and Psychopathology in Deaf and HH Adolescents

Respondents also illustrated future aspirations, Deaf community and its advocacy as protective factors alleviating mental health distress. For example, one of the respondents stated *"…because we need to care for each other and respect each other as we are playing. Most parents would think school is not important for their Deaf children… But then for me, I try to encourage them so that they are able to understand why it is important to go to school…"* Another respondent also highlighted that, *"My father also asked me the same thing, and I told him that I want to be a chef and I got a lot of support from him. So I feel like that is okay and I'll continue to pursue it. I like cooking food, I enjoy cooking food."* This was similar to what (Yüksel, 2019) reported where the population highlighted on the importance of having future desires of having a job, being able to communicate with their family members and other hearing people would make an inaccessible world accessible to them increasing even though they also considered having a sense of belonging with their Deaf and HH counterparts as significant.

Furthermore, other participants built onto the importance of gaining support of the hearing population at school and the community and how this increased their sense of self and self-esteem as narrated by this adolescent: *"Growing up, from birth till now, I think the teachers have been important because they have taught me and I have been able to understand sign language. Like my parents have also been able to understand sign language and that is good. And, some of my hearing friends also are able to help me. So when they notice that I am Deaf, we have unity, we understand*

sign language. Some understand quite little sign language and it is hard. So I am like able to teach them, so maybe I think with time I think that is still okay." "…About myself, so like being here in school, the teacher teaches well and then I try to understand…So sometimes, I usually think it is better. Like for example with my hearing friends, we are able to talk a little bit, teach them sign language, they are able to understand…But some people understand sign language like in the hospital, so they are able to understand like English which also helped in the decision for me to go to school…I think I am happy person; I have a lot of happiness. When my friends have problems, maybe at home, we are able to grow together and solve them. So that is a good thing about my friends. We like encouraging one another, with the children, trying to make sure that we are having fun in different ways. Caring for children, like in the house and all that. I think happiness generally."

5.2 STUDY STRENGTHS AND LIMITATIONS

Study is a mixed methods and multi-informant study giving thus in its attempt at building onto the limited knowledge, it offers a chance at an in-depth understanding of the population that is often left under-studied. Moreover, the prevalence and patterns of psychopathology aligned in both tools used in the study and it was also able to replicate the already existing global patterns of multi-informant pair to pair agreements in the SDQ responses. Another strength of the study is the fact that it made use of validated tool for multiple psychosocial factors as recommended by the DSM-5.

However, the study also had some limitations whereby the utilized tools had not been tailored for the population. The study does not also offer the guarantee of generalizability of the results in diverse Kenyan settings (non-urban) settings since it took place in the country's capital, moreover, the sample size might have limited the statistical power to detect predictors.

5.3 CONCLUSION

There is need to mitigate the high prevalence of mental health problems and lack of services through community based programs that reduce the highlighted risk factors while improving the resilience factors.

5.4 RECOMMENDATIONS

The study highlights a few recommendations geared towards gaining more scientific knowledge on the community. Therefore, there is a need to attempt at tailoring tools for the population for future research. There is also a need to put into consideration the mental health of the population based on the prevalence reported. This could be through training mental health care providers in KSL and promoting inclusivity in the facilities. In addition, the study hopes to inform policies around mental health assessment and interventions for population as well as informing stakeholders working with the population of the risks and needs posed by the population

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APPENDICES

Appendix 1: Budget & Budget Justification

No.	Item Head	Total Cost (Ksh)
1.	Dissertation Review Charges for the Ethics and Research Committee	2,000/-
2.	Data Collection:- i.e. Pencils, Pens, Sharpeners, Erasers, Stapler, Storage Boxes	3,000/-
3.	Researcher's Operation Expenses:- i.e.	8,000/-
	Data Input-2,000/-	
	Report Writing- 2,000/-	
	Transport- 1,000/-* 4weeks	
4.	Professional KSL interpreters consultations	30,000/-
5.	Printing and Photocopying Charges for data collection tools	7,000/-
6.	Consent and Assent forms printing and photocopy	2,000/-
6.	Printing and photocopy of document	9,000/-
	Dissertation Photocopies – 3 copies	
	Photocopy and binding of final dissertation- 5 copies	
7.	Data Analysis	40,000/-
8.	Video Editing	91,000/-
8.	10% Contingency	19,200/-
	GRAND TOTAL	211,200/-

Table 2: Budget

Appendix 2: Parent/Guardian Informed Consent Form

Title: PSYCHOPATHOLOGY, RISK AND RESILIENCE FACTORS AMONG DEAF AND HARD OF HEARING ADOLESCENTS: A MIXED METHODS STUDY OF THR SPECIAL UNIT SCHOOLS IN NAIROBI COUNTY, KENYA.

Researcher: MUTAHI, JOAN WANGARI- MSc. Clinical Psychology Student, University of Nairobi.

Introduction

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

i. Your decision to participate is entirely voluntary
ii. You may withdraw from the study at any time without necessarily giving a reason for your withdrawal
iii. Refusal to participate in the research will not affect the patient's treatment in the hospital

I will give you a copy of this form for your records.

May I continue? YES / NO

This study has approval by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Protocol No. _____

This Informed Consent Form has two parts: Information Sheet (to share information about the research with you) and Certificate of Consent (for signatures if you agree to take part). You will be given a copy of the full Informed Consent Form

PART I: Information Sheet

Introduction

My name is Mutahi, Joan Wangari. I am a post-graduate student undertaking a Master's of Science in Clinical Psychology in University of Nairobi. This study, Psychopathology, risk and resilience factors among Deaf and Hard of Hearing adolescents: A mixed methods study of the special unit schools in Nairobi County, Kenya, is a requirement for part fulfillment of the degree requirements.

I am going to explain about this research in detail in a language that you understand maybe spoken, signed or written and invite you to voluntarily agree to participate. You are free to ask any question or seek clarification about the research during and after data collection using the contact address provided at the end of this document.

Purpose of the research

Purpose of the research is to find out the psychopathology prevalence and patterns as well as risk and resilience factors among Deaf and Hard of Hearing adolescents in Nairobi County.

Benefits

There are no direct benefits of this study to you as an individual but from this study, however the results of these findings will allow us to know the psychopathology prevalence and patterns as well as risk and resilience factors among Deaf and Hard of Hearing adolescents in Nairobi County. The findings made will also be shared to the relevant stakeholders, Ministry of Education, among others to guide in policy making for the management, care and comprehension of the Deaf and Hard of Hearing adolescents.

Risks

You will be required to only use a paper and pen and answer questions so no physical harm will come to you. There shall also be no economic harm resulting from participating in this research. However, there might be one or more known or unknown psychological risks from participating in this research. They include you not liking some of the questions that will be asked or some of the questions evoking strong emotional reactions from you. You may also be asked information on matters that you may consider private. In the case of emotional distress kindly talk to the researcher.

Voluntary Participation

It is your choice whether or not to continue or allow your child in the study, without repercussions in your school of attendance. If you feel like withdrawing, you can without any victimization.

Confidentiality

Your identity and the adolescent's will not be disclosed or shared with anyone. To ensure confidentiality the data collection forms will ar codes instead of your names. Only the researchers will recognize what your numbers are and the collected data kept under lock and key. All the data and the information obtained during the study will be used for the sole purpose of meeting the objective of the study.

Duration

The data collection will only take a period of 30 minutes to 1 hour. During this time, you will only be expected to answer the questions asked as outlined.

Contacts

Questions are welcome at the moment or later, even when the study is in progress. Feel free to contact researcher on 0705280306 or the supervisors Dr Manasi on 0717379687 and Dr. Kamau on 0722489273. You may also contact the KNH/UON-ERC on Email address uonknh_erc@uonbi.ac.ke; Website: http://www.erc,uonbi.ac.ke.

PART II: Certificate of Consent

If you decide you want to allow your child in this study, please sign below.

I voluntarily agree to my adolescent's participation in this research study: _____ (Signature/Thumb stamp)

_____ (Relationship)

Date: _____

Principle Investigator _____ (Signature)

Date: **_____**

I understand that the researcher will not identify me or my adolescent by name in any reports using information obtained from this interview and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals.

The school's management and staff will neither be present at the interview nor have access to raw notes. This precaution will prevent my individual comments and that of the adolescent's from having any negative repercussions.

Contacts

Questions are welcome at the moment or later, even when the study is in progress. This will be through the researcher on 0705280306 or the supervisors Dr Manasi on 0717379687 and Dr. Kamau on 0722489273. I may also contact the KNH/UON-ERC on Email address uonknh_erc@uonbi.ac.ke; Website: http://www.erc,uonbi.ac.ke.

Statement of Consent

I have read this consent form. I have had the chance to discuss this research study with the researcher. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study.

Date: _____

Appendix 3: Assent Explanation & Forms

Title: PSYCHOPATHOLOGY, RISK AND RESILIENCE FACTORS AMONG DEAF AND HARD OF HEARING ADOLESCENTS: A MIXED METHODS STUDY OF THR SPECIAL UNIT SCHOOLS IN NAIROBI COUNTY, KENYA.

Researcher: MUTAHI, JOAN WANGARI- MSc. Clinical Psychology Student, University of Nairobi.

PART I: Information Sheet

I am doing a research study to find out psychopathology, risk and resilience factors among Deaf and Hard of Hearing adolescents in Nairobi.

Permission has been granted to undertake this study by the Kenyatta National Hospital -

University of Nairobi Ethics and Research Committee (KNH- UoN ERC Protocol No._____)

This research study is a way to learn more about people.

About 101 adolescents will be participating in this research study with you.

If you decide that you want to be part of this study, kindly give affirmative agreement then I will give you three questionnaires to fill, which will take around 30 minutes to 1 hour. Your parent/guardian and teacher will fill one questionnaire. Later on, you might be called in for an interview that will be recorded.

There are some things about this study you should know;

Benefits

There are no direct benefits of this study to you as an individual but from this study, however the results of these findings will allow us to learn about the psychopathology, risk and resilience factors among the Deaf and Hard of Hearing adolescents. The findings made will also be shared to the relevant stakeholders to guide in policy making for the care and promotion of psychological health and proper planning and treatment of this group of adolescents.

Risks

You will be required to only use a paper and pen or answer questions so no physical harm will come to you. However, in case of emotional distress kindly talk to the researcher. When we are finished with this study we will write a report about what will be learned. This report will not include your name or that you were in the study.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parent and teachers know about the study too.

Appendix 4: Teacher/Instructor Informed Consent Form

Title: PSYCHOPATHOLOGY, RISK AND RESILIENCE FACTORS AMONG DEAF AND HARD OF HEARING ADOLESCENTS: A MIXED METHODS STUDY OF THE SPECIAL UNIT SCHOOLS IN NAIROBI COUNTY, KENYA.

Researcher: MUTAHI, JOAN WANGARI- MSc. Clinical Psychology Student, University of Nairobi.

Introduction

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

iv. Your decision to participate is entirely voluntary
v. You may withdraw from the study at any time without necessarily giving a reason for your withdrawal
vi. Refusal to participate in the research will not affect the patient's treatment in the hospital

I will give you a copy of this form for your records.
May I continue? YES / NO
This study has approval by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Protocol No. _____

This Informed Consent Form has two parts: Information Sheet (to share information about the research with you) and Certificate of Consent (for signatures if you agree to take part). You will be given a copy of the full Informed Consent Form

PART I: Information Sheet

Introduction

My name is Mutahi, Joan Wangari. I am a post-graduate student undertaking a Master's of Science in Clinical Psychology in University of Nairobi. This study, Psychopathology, risk and resilience factors among Deaf and Hard of Hearing adolescents: A mixed methods study of the special unit schools in Nairobi County, Kenya, is a requirement for part fulfillment of the degree requirements.

I am going to explain about this research in detail in a language that you understand maybe spoken, signed or written and invite you to voluntarily agree to participate. You are free to ask any question or seek clarification about the research during and after data collection using the contact address provided at the end of this document.

Purpose of the research

Purpose of the research is to find out the psychopathology prevalence and patterns as well as risk and resilience factors among Deaf and Hard of Hearing adolescents in Nairobi County.

Benefits

There are no direct benefits of this study to you as an individual but from this study, however the results of these findings will allow us to know the psychopathology prevalence and patterns as well as risk and resilience factors among Deaf and Hard of Hearing adolescents in Nairobi County. The findings made will also be shared to the relevant stakeholders, Ministry of Education, among others to guide in policy making for the management, care and comprehension of the Deaf and Hard of Hearing adolescents.

Risks

You will be required to only use a paper and pen and answer questions so no physical harm will come to you. There shall also be no economic harm resulting from participating in this research. However, there might be one or more known or unknown psychological risks from participating in this research. They include you not liking some of the questions that will be asked or some of the questions evoking strong emotional reactions from you. You may also be asked information on matters that you may consider private. In the case of emotional distress kindly talk to the researcher.

Voluntary Participation

It is your choice whether or not to continue with the study, without repercussions in your work. If you feel like withdrawing, you can without any victimization.

Confidentiality

Your identity and the adolescents' will not be disclosed or shared with anyone. To ensure confidentiality the data collection forms will ar codes instead of your names. Only the researchers will recognize what your numbers are and the collected data kept under lock and key. All the data and the information obtained during the study will be used for the sole purpose of meeting the objective of the study.

Duration

The data collection will only take a period of 30 minutes to 1 hour. During this time, you will only be expected to answer the questions asked as outlined.

Contacts

Questions are welcome at the moment or later, even when the study is in progress. Feel free to contact researcher on 0705280306 or the supervisors Dr Manasi on 0717379687 and Dr. Kamau on 0722489273. You may also contact the KNH/UON-ERC on Email address uonknh_erc@uonbi.ac.ke; Website: http://www.erc,uonbi.ac.ke.

PART II: Certificate of Consent

Statement of Consent

I have read this consent form. I have had the chance to discuss this research study with the researcher. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study.

Name: _____Work Designation: _____

Signature: _____ Date: _____

Principal Investigator: _____Signature: _____

Date: _____

Contacts

Questions are welcome at the moment or later, even when the study is in progress. This will be through the researcher on 0705280306 or the supervisors Dr. Manasi on 0717379687 and Dr. Kamau on 0722489273. I may also contact the KNH/UON-ERC on Email address uonknh_erc@uonbi.ac.ke; Website: http://www.erc,uonbi.ac.ke.

Appendix 5: Socio-Demographic Questionnaire

Date …….. **Research Code……..**

i) Personal Information

1. Sex. Male …… Female…..
2. Date of Birth ……. Age …….
3. Level of Study (Tick where appropriate)
   Grade 1…. Class 5…. Form 1……
   Grade 2….. Class 6…. Form 2……
   Grade 3…. Class 7….. Form 3……
   Grade 4…. Class8….. Form 4…..
4. Hearing Status (Tick where appropriate)
   Hearing …..
   Deaf …..
   Hard of Hearing …..
5. Were you born Deaf? Yes …… No …….

a) If No, when were you first diagnosed with Hearing Loss? .....
b) How old were you? ….
c) What was the cause of the Deafness ……

6. Hearing Aid Use (Tick where appropriate)
   Yes ….
   No ….
7. How do you feel about your hearing/non-hearing state?

8. How can you describe other peoples' (family, peers, and strangers) response to your Deaf state?

ii) Family Information

9. Is/Are there Deaf member(s) in your family? Yes ……. No …..

a) If Yes, who?
   Mother….. Father ….. Brother ….. Sister ….. Cousin…… Uncle …..
   Aunt ….. Grandmother … Grandfather …… Other(specify)……

10. What language (s) is/ are used at home for communication? (Tick where appropriate).
    English …….
    Swahili ……
    Mother Tongue …….
    Sign Language …..
11. Who do you live with? (Tick where appropriate)
    One Parent …….
    Both Parents …….
    Relatives …….
    Children's Home …….
    Other (explain) …….
12. How Many Siblings Do You Have? ……..
13. What is your Birth Order? (Tick where appropriate)

1^{st} ….. 2^{nd} …… 3^{rd} ….. 4^{th} …… Other…

14. Where do you stay? ……
15. How would you describe your family financially? (Tick where appropriate)

Rich ……
Average …..
Poor ……

16. How much money are you given as pocket money per school term? ……

iii) **Academic Information**

17. What kind of primary school did/do you attend? (Tick where appropriate)
Special (Deaf) School ……
Normal (Hearing) School ……..
Integrated (Both Deaf and Hearing) ……
18. What was your performance at :
Last Term…….. (Marks) Position …..Out of…….
KCPE?…… (Marks)
19. What is your average performance here in school? (Tick where appropriate)

Below 100Marks….. 100-200Marks……. 200-300Marks…….. 300-400Marks…

400-500Marks…….

A……. A-…….B+…….B……. B-…….C+…….C……..C-……

D+…….D……D-…….E……
20. What is your general feeling concerning school?

21. What is your general plan after finishing High School?

iv) Social Information (Tick where appropriate)

22. Who do you prefer to hang out with?
Hearing Friends ……..
Deaf & Deaf and Hard of Hearing Friends ……..
Hearing and Deaf/ Hearing- Impaired Friends……..
I prefer to stay alone most times ……..
23. Most of my friends communicate in
Kenyan Sign Language …….
Mother Tongue ……..
Swahili ……
English ……
24. Where do you mostly spend time at?
School …… Home ….. Streets …… Church/Mosque…….
Other (specify) …….
25. I am often bullied/ ridiculed by other students
Most Times …… Sometimes ……. Never ……
26. My friends and family are often supportive of me and my life
Most Times ….. Sometimes …… Never …….

27. Information concerning mental health is accessible for me

Yes …… Somehow …….. No ……

28. I have access to a Sign Language Interpreter out of school

Most Times ….. Sometimes …… Never ……..

Appendix 6: Strength and Difficulty Questionnaire – English

Area Logo

TY1

Teacher Report Measuresfor
Children and Adolescents
SDQ(T)11-17

FacilityName:_____

Code: |____|___|___|___|

Please used gummed label if available

Patient or Client Identifier:

||_____|___|___|___|___|___|___|

Surname:

Other names:

Date of Birth: Sex:

_____/_____/_____ Male☐$_1$ Female☐$_2$

Address:

Instructions: For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of this student's behavior **over the last six months or this school year**.

	Strengths and Difficulties Questionnaire	Not True	Somewhat True	Certainly True
1.	Considerate of other people's feelings	O	O	O
2.	Restless, overactive, cannot stay still for long	O	O	O
3.	Often complains of headaches, stomach-aches, or sickness	O	O	O
4.	Shares readily with other young people, for example CDs, games, food	O	O	O
5.	Often loses temper	O	O	O
6.	Would rather be alone than with other young people	O	O	O
7.	Generally well behaved, usually does what adults request	O	O	O
8.	Many worries or often seems worried	O	O	O
9.	Helpful if someone is hurt, upset or feeling ill	O	O	O
10.	Constantly fidgeting or squirming	O	O	O
11.	Has at least one good friend	O	O	O
12.	Often fights with other young people or bullies them	O	O	O
13.	Often unhappy, depressed or tearful	O	O	O
14.	Generally liked by other young people	O	O	O
15.	Easily distracted, concentration wanders	O	O	O
16.	Nervous in new situations, easily loses confidence	O	O	O
17.	Kind to younger children	O	O	O
18.	Often lies or cheats	O	O	O
19.	Picked on or bullied by other young people	O	O	O
20.	Often volunteers to help others (parents, teachers, children)	O	O	O
21.	Thinks things out before acting	O	O	O
22.	Steals from home, school or elsewhere	O	O	O

23.	Gets along better with adults than with other young people	O	O	O
24.	Many fears, easily scared	O	O	O
25.	Good attention span, sees chores or homework through to the end	O	O	O

Please turn over – there are a few more questions on the other side

Do you have any other comments or concerns?

		No	Yes – minor difficulties	Yes – definite difficulties	Yes – severe difficulties
26.	Overall, do you think that this student has difficulties in any of the following areas: emotions, concentration, behavior or being able to get along with other people?	O	O	O	O

If you have answered "Yes", please answer the following questions about these difficulties:

		Less than a month	1-5 months	6-12 months	Over a year
27.	How long have these difficulties been present?	O	O	O	O

		Not at all	A little	A medium amount	A great deal
28.	Do the difficulties upset or distress this student?	O	O	O	O
Do the difficulties interfere with this student's everyday life in the following areas?					
	30. PEER RELATIONSHIPS	O	O	O	O
	31. CLASSROOM LEARNING	O	O	O	O
33.	Do the difficulties put a burden on the class as a whole?	O	O	O	O

Signature____ Date____

__ __ __ __ __ __ __ __

Area Logo

PY1

Parent Report Measures for Children and Adolescents
SDQ(P)11-17

FacilityName: _____

Code: |__|__|__|__|

Please used gummed label if available

Patient or Client Identifier:
| | | | | | | | |

Surname:

Other names:

Date of Birth: _____/_____/_____

Sex: Male ☐$_1$ Female☐$_2$

Address:

Instructions: For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of your child"s behaviour **over the last six months.**

	Strengths and Difficulties Questionnaire	Not True	Somewhat True	Certainly True
1.	Considerate of other people's feelings	O	O	O
2.	Restless, overactive, cannot stay still for long	O	O	O
3.	Often complains of headaches, stomach-aches, or sickness	O	O	O
4.	Shares readily with other young people, for example CDs, games, food	O	O	O
5.	Often loses temper	O	O	O
6.	Would rather be alone than with other young people	O	O	O
7.	Generally well behaved, usually does what adults request	O	O	O
8.	Many worries or often seems worried	O	O	O
9.	Helpful if someone is hurt, upset or feeling ill	O	O	O
10.	Constantly fidgeting or squirming	O	O	O
11.	Has at least one good friend	O	O	O
12.	Often fights with other young people or bullies them	O	O	O
13.	Often unhappy, depressed or tearful	O	O	O
14.	Generally liked by other young people	O	O	O
15.	Easily distracted, concentration wanders	O	O	O
16.	Nervous in new situations, easily loses confidence	O	O	O
17.	Kind to younger children	O	O	O
18.	Often lies or cheats	O	O	O
19.	Picked on or bullied by other young people	O	O	O
20.	Often volunteers to help others (parents, teachers, children)	O	O	O
21.	Thinks things out before acting	O	O	O
22.	Steals from home, school or elsewhere	O	O	O
23.	Gets along better with adults than with other young people	O	O	O

24.	Many fears, easily scared	O	O	O
25.	Good attention span, sees chores or homework through to the end	O	O	O

Do you have any other comments or concerns?

	Over the last six months, have your child's teachers complained of:	No	A Little	A Lot
36.	Fidgetiness, restlessness or over activity	O	O	O
37.	Poor concentration or being easily distracted	O	O	O
38.	Acting without thinking, frequently butting in, or not waiting for his or her turn	O	O	O

		No	Yes – minor difficulties	Yes – definite difficulties	Yes – severe difficulties
26.	Overall, do you think that your child has difficulties in any of the following areas: emotions, concentration, behavior or being able to get along with other people?	O	O	O	O

If you have answered "Yes", please answer the following questions about these difficulties:

		Less than a month	1-5 months	6-12 months	Over a year
27.	How long have these difficulties been present?	O	O	O	O

		Not at all	A little	A medium amount	A great deal
28.	Do the difficulties upset or distress your child?	O	O	O	O
	Do the difficulties interfere with your child's everyday life in the following areas?				
	29. HOME LIFE	O	O	O	O
	30. FRIENDSHIPS	O	O	O	O
	31. CLASSROOM LEARNING	O	O	O	O
	32. LEISURE ACTIVITIES	O	O	O	O
33.	Do the difficulties put a burden on you or the family as a whole?	O	O	O	O

Signature_____ Date_____

Mother/Father/Other (please specify):_____

Thank you very much for your help.

Area Logo

YR1

Youth Report Measures for Children and Adolescents SDQ(S)11-17

Facility Name: _____

Code: |__|__|__|__|

Please used gummed label if available

Patient or Client Identifier: |__|__|__|__|__|__|__|__|__|

Surname:

Other names:

Date of Birth: _____/_____/_____

Sex: Male ☐1 Female☐2

Address:

Instructions: For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of how things have been for you **over the last six months.**

	Strengths and Difficulties Questionnaire	Not True	Somewhat True	Certainly True
1.	I try to be nice to other people. I care about their feelings	O	O	O
2.	I am restless, I cannot stay still for long	O	O	O
3.	I get a lot of headaches, stomach-aches, or sickness	O	O	O
4.	I usually share with others, for example CDs, games, food	O	O	O
5.	I get very angry and often lose my temper	O	O	O
6.	I would rather be alone than with people of my age	O	O	O
7.	I usually do as I am told	O	O	O
8.	I worry a lot	O	O	O
9.	I am helpful if someone is hurt, upset or feeling ill	O	O	O
10.	I am constantly fidgeting or squirming	O	O	O
11.	I have one good friend or more	O	O	O
12.	I fight a lot. I can make other people do what I want	O	O	O
13.	I am often unhappy, depressed or tearful	O	O	O
14.	Other people my age generally like me	O	O	O
15.	I am easily distracted, I find it difficult to concentrate	O	O	O
16.	I am nervous in new situations. I easily lose confidence	O	O	O
17.	I am kind to younger children	O	O	O
18.	I am often accused of lying or cheating	O	O	O
19.	Other children or young people pick on me or bully me	O	O	O
20.	I often volunteer to help others (parents, teachers, children)	O	O	O
21.	I think before I do things	O	O	O
22.	I take things that are not mine from home, school or elsewhere	O	O	O
23.	I get along better with adults than with people my own age	O	O	O
24.	I have many fears, I am easily scared	O	O	O
25.	I finish the work I'm doing. My attention is good	O	O	O

Please turn over – there are a few more questions on the other side

		No	A Little	A Lot
39.	Does your family complain about you having problems with over activity or poor concentration?	O	O	O
40.	Do your teachers complain about you having problems with over activity or poor concentration?	O	O	O
41.	Does your family complain about you being awkward or troublesome?	O	O	O
42.	Do your teachers complain about you being awkward or troublesome?	O	O	O

		No	Yes – minor difficulties	Yes – definite difficulties	Yes – severe difficulties
26.	Overall, do you think that you have difficulties in any of the following areas: emotions, concentration, behavior or being able to get along with other people?	O	O	O	O

If you have answered "Yes", please answer the following questions about these difficulties:

		Less than a month	1-5 months	6-12 months	Over a year
27.	How long have these difficulties been present?	O	O	O	O

		Not at all	A little	A medium amount	A great deal
28.	Do the difficulties upset or distress you?	O	O	O	O
	Do the difficulties interfere with your everyday life in the following areas?				
	29. HOME LIFE	O	O	O	O
	30. FRIENDSHIPS	O	O	O	O
	31. CLASSROOM LEARNING	O	O	O	O
	32. LEISURE ACTIVITIES	O	O	O	O
33.	Do the difficulties make it harder for those around you (family, friends, teachers, etc.)?	O	O	O	O

Your Signature_____Today's Date_____

Thank you very much for your help.

Appendix 7: Strengths and Difficulties Questionnaires – Swahili S 11-17

MASWALI YAUWEZO NA UGUMU

Kwa kila swali, tafadhali weka alama ya Siyo Kweli, Kweli Kiasi au Hakika Kweli. Itatusaidia endapo utajibu maswali yote vizuri kadiri uwezavyo hata kama huna uhakika au maswali hayaonyeshi kuwa na maana kwako.Tafadhali jibu kwa kuzingatia hali yako katika kipindi cha miezi sita iliyopita.

Jinalako..... Mume/Mke

Tarehe ya kuzaliwa.....

	Siyo Kweli	**Kweli Kiasi**	**Hakika Kweli**
1.Najaribu kuwa mwema kwa watu wengine. Najalihisiazao	☐	☐	☐
2.Situlii, nashindwa kutulia kwamudamrefu	☐	☐	☐
3.Mara kwa mara huumwa na kichwa, tumbo nakujihishi kutapika	☐	☐	☐
4. Kwa kawaida nagawa na wenzangu (kalamu, peremende, vifaa vya michezo, na kadhalika)	☐	☐	☐
5. Nina hasira sana, na mara kwa maranashindwa kujizuia	☐	☐	☐
6.Mara nyingi niko peke yangu, huchezapeke yangu	☐	☐	☐
7.Kwa kawaidahufanya ninachoambiwa	☐	☐	☐
8.Huwa ninakuwa nawill iwill isana	☐	☐	☐
9. Huwa natoa msaada kama mtu ameumizwa amekuwa na huzuni auni mgonjwa	☐	☐	☐
10. Mara nyingi ninapoketi huwa ninajinyongoa mikono yangu haitulii na huwa inashika shika vitu	☐	☐	☐
11. Nina rafiki moja au zaidiwakaribu	☐	☐	☐
12. Ninapigana sana. Ninaweza kuwafanya watu wengine kufanya yale ambayo ninataka wafanye	☐	☐	☐
13. Mara kwa mara sina furaha, huwa nina machoziya karibu	☐	☐	☐
14.Watu wengine wa umri wangu kwaujumlawananipenda	☐	☐	☐
15. Mawazo yangu yanavurugika kwa urahisi. Ninaona vigumukuwa makini	☐	☐	☐
16. Huwa nina hofu katika mazingira mapya. Ninapoteza kujiaminikwaurahisi	☐	☐	☐
17. Ni mkarimu kwawatotowadogo	☐	☐	☐
18.Mara kwa mara nalaumiwa kwa kusema uongoau kudanganya	☐	☐	☐
19.Watoto wengine au vijana wananioneaauwananichokoza	☐	☐	☐
20. Mara kwa mara huwa ninajitolea kuwill aidia wengine (wazazi,walimu,watoto)	☐	☐	☐
21. Ninafikiri kabla yakufanyavitu	☐	☐	☐
22.Ninachukua vitu ambavyo siyo vyangu toka nyumbani, shuleni aukwinginekokote	☐	☐	☐
23.Ninaelewena vizuri na watu wazima kuliko watu warikalangu	☐	☐	☐
24.Nina uoga wa vitu vingi, ninaogopakwaurahisi	☐	☐	☐
25.Namaliza kazi ninayofanya. Umakini wangunimzuri	☐	☐	☐

Je una maoni au maswali yoyote?

Tafadhali geuza karatasi kwa maswali zaidi:

26. Kwa ujumla, Je unadhani una matatizo au unapata ugumu katika angalau mojawapo ya maeneo ya fuatayo: kuhuzunika au kuwa na will iwill i, umakini, tabia, ama kuweza kupatana na watu wengine

Hapana	Ndiyo, ana matatizo/ ugumu kiasi	Ndiyo, ana matatizo/ ugumu sana	Ndiyo, ana matatizo/ ugumu kali
☐	☐	☐	☐

Kama umejibu ndiyo, tafadhali jibu maswali yafuatayo kuhusu magumu haya.

27.Haya matatizo yamekuwepo kwa mudagani?

Chini ya mwezi mmoja iliyopita	Kati ya mwezi 1 hadi 5 iliyopita	Miezi 6 hadi 12 iliyopita	Zaidi ya mwaka mzima
☐	☐	☐	☐

28.Je matatizo haya hukufanya ujisikie vibaya auhukusononesha?

Hapana	Kidogo	Sana	Kwa ukubwa sana
☐	☐	☐	☐

Je magumu haya hutatiza mAK002yako kila siku katika maeneohaya?

	Hapana	Kidogo	Sana	Kwa ukubwa sana
29.MAISHAYANYUMBANI	☐	☐	☐	☐
30.URAFIKI	☐	☐	☐	☐
31.KUSOMADARASANI	☐	☐	☐	☐
32.SHUGHULI ZA KUJIBURUDISHA/ BURUDANI	☐	☐	☐	☐

33.Je magumu haya hukupa changamoto kwa wale walio karibu yako (wazazi, marafiki, walimu nakadhalika)?

Kwa ukubwa

Hapana

Sahihi

.....

Asante kwamsaadawako

Tarehe ya leo .....

Kidogo Sana sana

MASWALI YAUWEZO NA UGUMU

Kwa kila swali,tafadhali weka alama ya Siyo Kweli, Kweli Kiasi, Hakika Kweli. Itatusaidia endapo utajibu maswali yote vizuri kadiri uwezavyo hata kama huna uhakika au maswali hayaonyeshi kuwa na maana kwako. Tafadhali jibu kwa kuzingatia hali yake katika kipindi cha miezi sita iliyopita au mwaka huu wa shule.

Jina laMtoto ..... Mume/Mke

Tarehe ya Kuzaliwa .....

	Siyo Kweli	Kweli Kiasi	Hakika Kweli
1.Anajali hisiazawengine	☐	☐	☐
2.Hatulii , hawezi kutulia mahali pamoja kwamudamrefu	☐	☐	☐
3.Mara kwa mara analalamika kuumwa na kichwa, tumbo nakujihishi kutapika	☐	☐	☐
4.Hugawa kwa urahisi vitu vyake na watoto wengine (kalamu, peremende, vifaa vyamichezo na kadhalika)	☐		
5.Hukasirika mara kwa mara naanahasirakali	☐		
6.Kwa kawaida yuko peke yake, anachezapekeyake	☐		
7.Kwa kawaida ni mtiifu, hufanya anachoambiwa nawatuwazima	☐		
8.huwa inashika shika vitu kuwanawill i	☐		
9.Angalau ana rafiki mmojawakaribu	☐		
10.Kwa kawaida anapendwa nawatotowenzake	☐		
11.Ni rahisi kupoteza mweleko na kupotezaumakini	☐		
12.Ni muoga na hushikilia wazazi, hana ujasiri katikamazingiramapya	☐		
13.Ni mkarimu kwawatotowadogo	☐		

Ana will iwill i wa vitu vingi, mara kwa mara huonekana haitulii na huwa

Husaidia mtu kama ana huzuni, ameumizwa amani mgonjwa

Mara nyingi Anapoketi huwa anajinyongoa mikono yake mchokozi

Mara kwa mara anapigana na watoto wenzake, huwa nakuwaoneapia karibu

Mara kwa mara hana furaha na ana machoziya

☐

☐

14.Mara kwa mara huwa anasema uongo, nani mdanganyifu ☐ ☐ ☐

☐

☐

☐

15.Watoto humchokozaaukumuonea wenzake

☐ ☐ ☐ Mara kwa mara anajitolea kuwill aidia wengine (wazazi,walimu nawatotowenzake)

☐ ☐ ☐ Huwa anafikiria kwanza kabla hajaamuakufanya jambo

☐ ☐ ☐

16.Anaiba ausehemunyingine nyumbani, shuleni

☐ ☐ ☐ Kwa kawaida huwa anaelewana zaidi na watu wazima kulikowatotowenzake

☐ ☐ ☐ Ana uoga wa vitu vingi, huogopakwa urahisi

☐ ☐ ☐

17.Humaliza kazi anazopewa na ni makiniwakutosha

☐ ☐ ☐

Saini ..... Tarehe .....

Mzazi/ mwalimu/ mwingine (tafadhali mtaje Yule mwingine):

Asante sana kwaushirikianowako

MASWALI YAUWEZO NA UGUMU P 4-17

Kwa kila swali,tafadhali weka alama ya Siyo Kweli, Kweli Kiasi, Hakika Kweli. Itatusaidia endapo utajibu maswali yote vizuri kadiri uwezavyo hata kama huna uhakika au maswali hayaonyeshi kuwa na maana kwako. Tafadhali jibu kwa kuzingatia hali yake katika kipindi cha miezi sita iliyopita.

Jina laMtoto ..... Mume/Mke

Tarehe ya Kuzaliwa .....

	Siyo Kweli	**Kweli Kiasi**	**Hakika Kweli**
1.Anajali hisiazawengine	☐	☐	☐
2.Hatulii , hawezi kutulia mahali pamoja kwamudamrefu	☐	☐	☐
3.Mara kwa mara analalamika kuumwa na kichwa, tumbo nakujihishi kutapika	☐	☐	☐
4.Hugawa kwa urahisi vitu vyake na watoto wengine (kalamu, peremende, vifaa vyamichezo na kadhalika)	☐☐☐		
5.Hukasirika mara kwa mara naanahasirakali	☐	☐	☐
6.Kwa kawaida yuko peke yake, anachezapekeyake	☐	☐	☐
7.Kwa kawaida ni mtiifu, hufanya anachoambiwa nawatuwazima	☐	☐	☐ 8.Ana
will iwill i wa vitu vingi, mara kwa mara huonekana kuwanawill iwill i	☐	☐	☐
9.Husaidia mtu kama ana huzuni, ameumizwa amani mgonjwa	☐	☐	☐
10.Mara nyingi Anapoketi huwa anajinyongoa mikono yake haitulii na huwa inashika shika vitu	☐	☐	☐
11.Angalau ana rafiki mmojawakaribu	☐	☐	☐
12.Mara kwa mara anapigana na watoto wenzake, huwa mchokozi nakuwaoneapia	☐	☐	☐
13.Mara kwa mara hana furaha na ana machoziya karibu	☐	☐	☐
14.Kwa kawaida anapendwa nawatotowenzake	☐	☐	☐
15.Ni rahisi kupoteza mweleko na kupotezaumakini haraka	☐	☐	☐
16.Ni muoga na hushikilia wazazi, hana ujasiri katikamazingiramapya	☐	☐	☐
17.Ni mkarimu kwawatotowadogo	☐	☐	☐
18.Mara kwa mara huwa anasema uongo, nani mdanganyifu	☐	☐	☐
19.Watoto wenzake humchokozaaukumuonea	☐	☐	☐
20.Mara kwa mara anajitolea kuwill aidia wengine (wazazi,walimu nawatotowenzake)	☐	☐	☐
21.Huwa anafikiria kwanza kabla hajaamuakufanya jambo	☐	☐	☐
22.Anaiba nyumbani, shuleni ausehemunyingine	☐	☐	☐
23.Kwa kawaida huwa anaelewana zaidi na watu wazima kulikowatotowenzake	☐	☐	☐ 24.Ana
uoga wa vitu vingi, huogopakwa urahisi	☐	☐	☐
25.Humaliza kazi anazopewa na ni makiniwakutosha	☐	☐	☐

Je una maoni au maelezo zaidi?

Tafadhali geuza karatasi-Kuna maswali mengine machache ya kujibu upande wa pili

26.Kwa ujumla unadhani mtoto wako ana matatizo au anapata ugumu katika angalau mojawapo ya maeneo ya fuatayo: kuhuzunika au kuwa na will iwill i, umakini, tabia, ama kuweza kupatana vizuri na watu wengine?

Hapana	Ndiyo, ana matatizo/ ugumu kiasi	Ndiyo,ana matatizo/ ugumu sana	Ndiyo,ana matatizo/ ugumu kali
☐	☐	☐	☐

Kama ulijibu ndiyo, tafadhali jibu maswali yafuatayo kuhusu ugumu anao upata mwanao:

27.Haya matatizo yamekuwepo kwa mudagani?

Chiniya mwezi mmojauliopita	Kati ya mwezi 1 hadi 5 iliyopita	Miezi 6 hadi 12 iliyopita	Zaidi ya Mwaka mzima
☐	☐	☐	☐

Je matatizo haya yanamfanya mtoto wako ajisikie vibaya aukusononeka?

Hapana	Kidogo	Sana	Kwa ukubwa sana
☐	☐	☐	☐

28.Je matatizo haya hutatiza mAK002ya kila siku ya mwanao katika maeneoyafuatayo?

	Hapana	Kidogo	Sana	Kwa ukubwa sana
29.MAISHAYANYUMBANI	☐	☐	☐	☐
30.URAFIKI	☐	☐	☐	☐
31.KUSOMADARASANI	☐	☐	☐	☐
32. SHUGHULI ZA KUJIBURUDISHA/ BURUDANI	☐	☐	☐	☐

33.Je matatizo haya yanakupa mzigo wewe au familia yako kwaujumla?

Hapana	Kidogo	Sana	Kwa Ukubwa sana
……	…….	…….	……

Sahihi……..
Tarehe …….

Asante sana kwa ushirikiano wako

Mama/Baba/Other (Tafadhali bainisha):

Appendix 8: DSM-5 Level 1 Cross Cutting Symptom Measure (11-17yrs)- **English** **Code….. Gender ….. Date…….Instructions:** The questions below ask about things that might have bothered you. For each question, circle the number that best describes how much (or how often) you have been bothered by each problem during the **past TWO (2) WEEKS.**

		During the past **TWO (2) WEEKS,** how much (or how often) have you…	**None** Not at all	**Slight** Rare, less than a day or two	**Mild** Several days	**Moderate** More than half the days	**Severe** Nearly every day	**Highest Domain Score** (clinician)
I.	1.	Been bothered by stomachaches, headaches, or other aches and pains?	0	1	2	3	4	
	2.	Worried about your health or about getting sick?	0	1	2	3	4	
II.	3.	Been bothered by not being able to fall asleep or stay asleep, or by waking up too early?	0	1	2	3	4	
III.	4.	Been bothered by not being able to pay attention when you were in class or doing homework or reading a book or playing a game?	0	1	2	3	4	
IV.	5.	Had less fun doing things than you used to?	0	1	2	3	4	
	6.	Felt sad or depressed for several hours?	0	1	2	3	4	
V. & VI.	7.	Felt more irritated or easily annoyed than usual?	0	1	2	3	4	
	8.	Felt angry or lost your temper?	0	1	2	3	4	
VII.	9.	Started lots more projects than usual or done more risky things than usual?	0	1	2	3	4	
	10.	Slept less than usual but still had a lot of energy?	0	1	2	3	4	
VIII.	11.	Felt nervous, anxious, or scared?	0	1	2	3	4	
	12.	Not been able to stop worrying?	0	1	2	3	4	
	13.	Not been able to do things you wanted to or should have done, because they made you feel nervous?	0	1	2	3	4	
IX.	14.	Heard voices—when there will no one there—speaking about you or telling you what to do or saying bad things to you?	0	1	2	3	4	
	15.	Had visions when you were completely awake—that is, seen something or someone that no one else could see?	0	1	2	3	4	
X.	16.	Had thoughts that kept coming into your mind that you would do something bad or that something bad would happen to you or to someone else?	0	1	2	3	4	
	17.	Felt the need to check on certain things over and over again, like whether a door will locked or whether the stove will turned off?	0	1	2	3	4	
	18.	Worried a lot about things you touched being dirty or having germs or being poisoned?	0	1	2	3	4	
	19.	Felt you had to do things in a certain way, like counting or saying special things, to keep something bad from happening?	0	1	2	3	4	
		In the past **TWO (2) WEEKS,** have you…						
XI.	20.	Had an alcoholic beverage (beer, wine, liquor, etc.)?	☐Yes		☐No			
	21.	Smoked a cigarette, a cigar, or pipe, or used snuff or chewing tobacco?	☐Yes		☐No			
	22.	Used drugs like marijuana, cocaine or crack, club drugs (like Ecstasy), hallucinogens (like LSD), heroin, inhalants or solvents (like glue), or methamphetamine (like speed)?	☐Yes		☐No			
	23.	Used any medicine without a doctor's prescription to get high or change the way you feel (e.g., painkillers [like Vicodin], stimulants [like Ritalin or Adderall], sedatives or tranquilizers [like sleeping pills or Valium], or steroids)?	☐Yes		☐No			
XII.	24.	In the last 2 weeks, have you thought about killing yourself or committing suicide?	☐Yes		☐No			
	25.	Have you EVER tried to kill yourself?	☐Yes		☐No			

Appendix 9: DSM -5 Level 1 Cross Cutting Symptom Measure (11-17yrs)- Swahili

Jina: Umri: Jinsia: θ Kiumeθ Kike Tarehe: Maelekezo:

Maswali yafwatayo yanahusu mambo ambayo yanaweza kukusumbua wewe. Kwa kila swali, chagua idadi inayofafanua kiasi gani (au mara ngapi) wewe husumbuliwa na kila tatizo kwa wakati wa kipindi cha WIKI MBILI (2).

	Katika kipindi chaWIKI MBILI(2), ni kiasi gani (au mara ngapi) wewe ...		Hakuna hata kidogo	Kidogo kiasi, chini ya siku moja au mbili	Kali Kiasi siku kadhaa	Will tani, Zaidi ya nusu ya siku	Kali zaidi Karibu kila siku	Alama ya juu zaidi (Daktari)
I.	1.	Umesumbuliwa na maumivu ya tumbo, kichwa, au maumivu mengine?	0	1	2	3	4	
	2.	Will iwill i kuhusu afya yako au juu ya kuugua?	0	1	2	3	4	
II.	3.	Umesumbuliwa na kutoweza kulala au kukaa umelala, au kuamka mapema sana?	0	1	2	3	4	
III.	4.	Umesumbuliwa na kutoweza kukaa makini wakati ukiwa katika darasa au kufanya kazi za nyumbani au kusoma kitabu au kucheza mchezo?	0	1	2	3	4	
IV.	5.	Umekosa kuridhika kuliko awali wakati unapofanya mambo yaliyokufurahisha?	0	1	2	3	4	
	6.	Umehisi kusononeka au kuhuzunika kwa masaa kadhaa?	0	1	2	3	4	
V. & VI.	7.	Umehisi kukasirika haraka kuliko kawaida?	0	1	2	3	4	
	8.	Kuwa na hasira?	0	1	2	3	4	
VII.	9.	Umeanza miradi ya mambo zaidi kuliko kawaida au kufanywa zaidi mambo ya hatari kuliko kawaida?	0	1	2	3	4	
	10.	Kulala masaa kidogo kuliko kawaida lakini bado una nguvu na nishati zaidi.	0	1	2	3	4	
VIII.	11.	Kuona will iwill i, hofu au kuogopa?	0	1	2	3	4	
	12.	Umeshindwa kuwacha kuwa na will iwill i?	0	1	2	3	4	
	13.	Hujaweza kufanya mambo uliotaka au lazima kufanyika, kwa sababu yalikufanya uhisi will iwill i?	0	1	2	3	4	
IX.	14.	Kusikia sauti-wakati kulikuwa hakuna mtu huko, wanaozungumza kuhusu wewe au kukuambia nini cha kufanya au kukuambia mambo mabaya?	0	1	2	3	4	
	15.	Kuona maono ulipokuwa kabisa macho-yaani, kuona kitu au mtu ilhali hakuna mtu mwingine anaweza kuona hayo?	0	1	2	3	4	
X.	16.	Umekuwa na mawazo kwamba ungefanya kitu kibaya au kuwa kitu kibaya kingetokea kwako au mtu mwingine?	0	1	2	3	4	
	17.	Umeona haja ya kuangalia juu ya mambo fulani tena na tena, kwa mfano, kama mlango umefungwa au kama jiko lilikuwa limezimwa?	0	1	2	3	4	
	18.	Will iwill i sana kuhusu vitu unavyogusa kuwa chafu au kuwa na vijidudu au kuwa na sumu?	0	1	2	3	4	
	19.	Kuona haja ya kufanya mambo kwa njia fulani, kama kuhesabu au kusema mambo maalum, ili kuzuia kitu kibaya kutokea	0	1	2	3	4	
	Kwa Muda wa Wiki Mbili (2) zilizopita, ume…							
XI.	20.	Kunywa vinywaji vya kulewesha mfano; (pombe, divai, mvinyo na kadhalika)?		☐ Ndio		☐ La		
	21.	Kuvuta sigara, au mabomba, au kutumika ugoro au kutafuna tumbaku?		☐ Ndio		☐ La		
	22.	Kutumia dawa za kulevya kama bangi, cocaine au crack, dawa za klabu (kama Ecstasy), kuleta njozi (kama LSD), heroin, kuvuta au vimumunyisho (kama gundi), au methamphetamine (kama speed)?		☐ Ndio		☐ La		
	23.	Kutumia dawa yoyote bila idhini ya daktari kwa nia ya kulewesha au kubadilisha hisia (kwa mfano, dawa za kutuliza maumivu [kama Vicodin], stimulants [kama Ritalin au Adderall], sedatives au tranquilizers [kama dawa kulala au Valium], au steroids)?		☐ Ndio		☐ La		
XII.	24.	Kwa wiki 2 zilizopita, umekuwa na mawazo kuhusu kujiua au kuitoa uhai?		☐ Ndio		☐ La		
	25.	Je, umewahi kujaribu kujiua?		☐ Ndio		☐ La		

Appendix 10: In-Depth Interview Guide

i. Background Information.
ii. Circumstances leading to Deafness.
iii. Challenges and risks identified.
iv. Resilience identified.

1) Tell me about your family.
2) When was the first time you experienced hearing problems?
3) What were the circumstances leading to your hearing disability?
4) What has been your experience with hearing disability so far?
5) How do you feel about your hearing/non-hearing state?
6) How can you describe other peoples' (family, peers, and strangers) response to your hearing disability state?
7) Tell me about your school/ education.
8) What is your general feeling concerning school?
9) What is your general plan after finishing School?
10) What challenges do you experience in the following?
    a) Economic (food, shelter, clothing, access to school, medical care)
    b) Social (social support- [friends, family, teachers], violence, abuse, substance abuse)
    c) Medical (other disability, medical condition)
11) What do you understand concerning mental health?
12) What is your experience having a sign language interpreter in the various places you visit?
13) What do you think is the most challenging thing about having a hearing disability?
14) What do you think is the most encouraging thing about having a hearing disability?
15) What would you want other people your age facing hearing disability to know?

Appendix 11: ERC UON/KNH APPROVAL

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Ref. No.KNH/ERC/R/173

30th August, 2021

Joan Wangari Mutahi
Reg. No.H58/7558/2017
Dept. of Psychiatry
School of Medicine
College of Health Sciences
University of Nairobi

Dear Joan

Re: Approval of Annual Renewal – Psychopathology, Risk and Resilience Factors among Hearing impaired Adolescents: A Mixed Methods Study of the Special Units Schools in Nairobi County, Kenya (P790/09/2019)

Refer to your communication dated 11th August, 2021

This is to acknowledge receipt of the study progress report and hereby grant annual extension of approval for ethical research protocol P790/09/2019.

The approval dates are 16th January 2021 – 15th January 2022.

This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH- UoN ERC before implementation.
c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH- UoN ERC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).

f) Clearance for export of biological specimens must be obtained from KNH- UoN-Ethics & Research Committee for each batch of shipment.

g) Submission of an *executive summary* report within 90 days upon completion of the study This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

Kindly adhere to renewal timelines as per clause (e) above.

Yours sincerely,

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

C.c. The Principal, College of Health Sciences, UoN
The Director CS, KNH
The Chairperson, KNH-UoN ERC
The Dean, School of Medicine, UoN
The Chair, Dept. of Psychiatry, UoN

Appendix 12: NACOSTI APPROVAL

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **794488**

Date of Issue: **18/March/2020**

RESEARCH LICENSE

This is to Certify that Miss.. JOAN WANGARI MUTAHI of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: Psychopathology, Resilience and Risk Factors among Hearing Impaired Adolescents; A Mixed Methods Study of the Special Unit Schools in Nairobi County, Kenya. for the period ending : 18/March/2021.

License No: **NACOSTI/P/20/3890**

794488

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

Decommended

COUNTY COMMISSION..
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666

13/9/21

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Appendix 13: MINISTRY OF EDUCATION APPROVAL

Republic of Kenya

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

When replying please quote

REGIONAL DIRECTOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

Ref: RDE/NRB/RESEARCH/1/65 Vol.1

DATE: 13th September, 2021

Miss Joan Wangari Mutahi
University of Nairobi

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on the topic: *"Psychopathology, Resilience and Risk Factors among Hearing Impaired Adolescents: A Mixed Methods Study of the Special Unit in Nairobi County, Kenya."*

This office has no objection and authority is hereby granted for a period, ending **18th March, 2022** as indicated in the request letter.

Kindly inform the Sub County Director of Education of the County you intend to visit.

JAMES KIMOTHO
FOR: REGIONAL DIRECTOR OF EDUCATION
NAIROBI.

REGIONAL DIRECTOR OF EDUCATION
NAIROBI
13 SEP 2021
MINISTRY OF EDUCATION
P.O. Box 74629, NAIROBI

Copy to: Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI.