ANXIETY, DEPRESSION, AND POSTTRAUMATIC STRESS DISORDER IN ADOLESCENTS RESIDING ALONG THE WHARF COMMUNITY IN FREETOWN IN THE POST-EBOLA PERIOD

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DECLARATION

I hereby declare that this dissertation is my original work and that it has not been submitted for any award in any institution.

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This dissertation is dedicated to my daughters

Jazrah and Sammes

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KEY TO ABBREVIATION (ACRONYMS)

ADAA	Anxiety and Depression Association of America
AIDS	Acquired Immunodeficiency Syndrome
BDI	Beck's Depression Inventory
CFR	Case Fatality rate
CHO	Community Health Officer
DRC	Democratic Republic of Congo
DSM	Diagnosis and Statistical Manual of Mental Disorder
EVD	Ebola Virus Disease
ICD	International Classification of Diseases
LAMIC	Low and Middle Income Countries
PTSD	Post Traumatic Stress Disorder
SLRC	Secure Livelihoods Research Consortium
SPSS	Statistical Package for Social Sciences
UN	United Nations
UNICEF	United Nations Children's Fund
WHO	World Health Organization

ABSTRACT

BACKGROUND

The period of adolescence is characterized by rapid change physically, mentally, emotionally and socially. Consequently, adolescents need enabling and supportive environments to develop into healthy adults that can function successfully in the thought, mood and behavioural realms, and engage in productive activities and fulfilling relationships. Studies have established that adolescents living in less privileged environments and those exposed to traumatic events are more likely to experience significant impairment in their cognitive, affective or relational abilities than their counterparts.

Sierra Leone has been through a number of traumatic events including war, flooding and the most recent Ebola Virus Disease (EVD) epidemic, thus subjecting its people to a continuous series of trauma, with the younger population been the most affected. However, there is little data on the mental health status of adolescents and a dearth of child and adolescent mental healthcare available to survivors of these traumatic events. This study therefore aimed to assess the prevalence and correlates of anxiety disorder, depression, and post-traumatic stress disorder among adolescents living in the Wharf communities in Freetown, Sierra Leone in the post-Ebola period.

METHODOLOGY

This was a descriptive cross sectional study conducted in a Wharf community in Freetown, Sierra Leone. A cluster sampling technique was used to select study participants, and a total of 429 adolescents 13-19 years were recruited into the study. Instruments used were a socio-demographic questionnaire, Child PTSD checklist, and Beck's depression and anxiety inventory.

Frequency tables were used to represent socio-demographic characteristics, reported experiences of the EVD epidemic and coping strategies used by adolescents to deal with stressful events. Correlates of anxiety, depression and probable diagnosis of PTSD were determined using the Chi-square and logistic regression analysis. Selection criteria of 20% was used to input variables into the logistic regression and Statistical significance was set at $P < 0.05$.

RESULTS

The mean age of the participants was 15.3 (± 1.8) years, with over half (57%) of the participants within the 13 to 15 years old category. The male to female ratio was 2:3 and majority (86.9%) of the adolescents were in school. Almost half (45.8%) worked to earn money before or after school. About one in every 4 respondents had a probable diagnosis of PTSD (24.0%) and anxiety (24.7%) respectively, while about 1in every 5 (21.2%) had depression. A higher proportion of the older adolescents (15-19years old) had depression (27.7% Vs 16.3%; p=0.004), while younger adolescents (13 - 15 years old) were more likely to have anxiety (79.6% Vs. 69.6%; p=0.06).

Adolescents who were single or double orphans and those who were living with persons other than their parents were significantly more likely to have depression (p=<0.01) and PTSD (p=0.013). Adolescents, whose parents were separated, divorced or dead were significantly more likely to have depression (p=<0.001) compared to adolescents whose parents were married (p=<0.01). Among in-school adolescents, those who had to work to earn money before or after school were significantly more likely to have anxiety compared to their counterparts (p=0.003). Adolescents who were infected with the EVD and those who lost a loved one during the EVD epidemic were significantly more likely to have PTSD (p=0.016) and anxiety disorder (<0.01), while adolescents whose family members were infected with

the EVD were significantly more likely to have PTSD ($p<0.01$) and depression ($p=0.017$) compared to their counterparts. Over two-thirds of the participants reported they used emotion-focused methods of coping with stressful events, and 'Religion' was the most utilized sub-theme among these participants. About 25% of participants' made use of distraction (avoidant coping) and 13.1% sought out (problem-focused coping) ways to combat stressful events.

CONCLUSION

Adolescents in the Wharf Communities had high prevalence rates of PTSD, depression and anxiety in the Post EVD period. Factors such as being infected with the EVD, having family members who was infected with the EVD, losing a loved one to the EVD epidemic, being out of school, living with persons other than parents, working to earn money and having parents who were separated, divorced or dead, were associated with adolescents' having a mental disorder. The most common coping strategy among adolescents was the Emotion-focused strategy. Providing mental health services for adolescents in this community would be beneficial both to the adolescents and to the community at large.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Adolescence is a transitory period of growth and development between childhood and adulthood (Chambers et al., 2003). The World Health Organization defines adolescence as a time from ages 10 to 19 years (WHO, 2016a). As adolescents navigate through this transitory period, they experience many physical, psychological and social changes (WHO, 2016a). During this period, adolescents are faced with the task of discovering their identity, establishing peer relationships, trying to gain independence from their parents as they explore new things, and engage sometimes in risky adventures (Chambers et al., 2003).

Exposure to traumatic events at the crucial period of adolescence can result in deviations from the normal developmental trajectory, and an increased risk to developing various psychopathologies such as anxiety, depression, and post traumatic stress disorder (Shultz et al., 2015). Adolescents living in sub-Saharan Africa are at a higher risk of exposure to traumatic events such as civil wars, disease epidemics, flooding, domestic violence, rape and child labour (Omigbodun et al., 2008). They are therefore more likely to develop mental disorders during their lifetime (Betancourt, 2010; Kallay, 2015).

The impact of traumatic exposure is reported to be greater among adolescents who experienced them directly as compared to those who were indirectly affected (Omigbodun et al, 2008). Omigbodun et al (2008) found that adolescents who experienced physical abuse or sexual assault were more likely to have depressive symptoms than adolescents who experienced community unrest but without direct physical trauma. The more traumatic events experienced in a lifetime, the greater the risk of developing mental health problems and mental disorders (Suliman et al., 2009).

Anxiety, depression and PTSD are the most prevalent psychopathologies experienced by adolescents exposed to traumatic events (Shultz et al., 2015). These psychopathologies have higher rates in female adolescents than their male peers (Birmaher et al., 2007; Katja, 2009).

Anxiety disorders are reported to be the most prevalent psychopathology found among children and adolescents (Abbo, 2013; Parvaresh and Bahramnezhad, 2009). Similarly, depression and depressive symptoms have been identified as one of the most prevalent treatable mental disorders which, if left untreated, predict a risk of recurrence with persistence of depressive episodes and psychosocial morbidity into adulthood (Rao et al., 1995).

According to the Anxiety and Depression Association of America, 50% of adolescents diagnosed with depression have a co-morbid anxiety disorder (ADAA, 2016). However, distinguishing these disorders in children and adolescents can be challenging because some children and adolescents present with irritability, sleep difficulties, and nervousness when they are depressed and these mimic anxiety symptoms (ADAA, 2016).

Sierra Leone like many other African countries has experienced major traumatic events in the last three decades (Betancourt, 2010; Kallay, 2015; WHO, 2016d). In the early 2000s, the country emerged from an eleven-year brutal war that claimed the lives of an estimated 50,000 persons, with over 10,000 youth captured as child soldiers (Betancourt, 2010; WHO, 2010).

Just when things were about settling down, another major disaster occurred. The Ebola virus disease outbreak struck, with a total of 3589 lives lost(WHO, 2016d). The magnitude and impact of the disease was alarming, and it was reported to have recorded more cases and deaths than all other Ebola outbreaks combined (WHO, 2016b). It devastated families and communities across the country and disrupted every aspect of life resulting in a standstill in every sector of the country (WHO, 2016b).

Over the last two decades, there has been a rise in the number of slum communities along the coastal margins of the country, especially in the Eastern part of Freetown (SLDHS, 2013; Census, 2015). This is largely attributed to the migration of people from rural communities (Drumtra, 2003). The crowded nature of these slums as well as their location along the coastal margin made the communities more susceptible to infection during the Ebola outbreak.

The effect of the Ebola Virus Disease (EBV) was not just limited to physical health concerns, but there were also significant psychological and social implications (Van Bortel et al., 2016). During the EVD outbreak, adolescents were exposed to several risk factors that predispose to common mental health problems (Shultz et al., 2015).

Most adolescents in Sierra Leone experienced the EVD outbreak in varying forms. Some of these ways include being survivors of the epidemic, losing a loved one, disruption to their academic life, suffering starvation and several other concerns. In the aftermath of the outbreak, it is pertinent for policy makers and planners to pay attention, not only to the physical wellbeing of young people, but also to their mental wellbeing.

The Ebola epidemic is over, however, it has left an indelible imprint on the economic and psychosocial health of the nation and most especially the young people (Van Bortel et al., 2016). As the government strives to restore the health sector of the country, it is important to provide information on the mental health effect of the Ebola epidemic on the populace including adolescents who are also coping with several other transitions of life (Hall, 2008; Van Bortel et al., 2016)

1.2 STATEMENT OF THE PROBLEM

Mental, neurological, and substance use disorders make up 14% of the global burden of disease (WHO 2016c). It is well established that 50% of these mental disorders begin before age 14 years (Kessler et al, 2007). Unfortunately the mental health treatment gap is huge in most developing country settings and, 75% of individuals affected in low and middle income countries, do not have access to the care they need (WHO, 2016c).

Sierra Leone has a population of approximately seven million people and it is characterised by a youthful population, whereby children and adolescents constitute over 50% of the population (Statistic Sierra Leone, 2015). The country's mental health system is no different from that seen in other sub-Saharan African countries (WHO, 2016c; Yoder et al., 2016) with scarce human resources and facilities.

Sierra Leone has an existing Mental Health policy that was enacted in 2012 (WHO, 2015a). For over three decades now, there has been only one trained psychiatrist practicing in the country, alongside few mental health specialists who had received some form of training on mental health. Hence, the mental health treatment gap is over 99.8%; an indication of the poor situation of mental health services in the country (Yoder et al., 2016).

1.3 JUSTIFICATION

The period of adolescence is characterized by many opportunities as well as susceptibilities due to risky behaviours. Therefore, it is important to ensure the measures are put in place to support adolescent mental wellbeing in order for them to function optimally during this period. According to the World Health Organization, there is 'no health without mental health' (WHO, 2013).

Amidst the series of traumatic events that Sierra Leone has been exposed to over the years, little or no mental health care has been made available to her people as evident by limited research on mental disorders in the country as vital part of a needs assessment for the development of services and facilities.

Studies have established that the socio-economic prosperity of nation is directly linked to the mental wellbeing of its young people (Ardington and Case, 2010; Escarce, 2003). It is therefore important to determine the prevalence of mental health problems and disorders among adolescents in the post Ebola period, to provide a baseline for the development of appropriate mental health services in the country.

It is hoped that findings from this research will inform policy that will enhance early identification and treatment of adolescents with mental health problems. Also, the findings are expected to highlight the importance and the urgent need for the development and implementation of child and adolescent mental health services in the country.

1.4 AIM:

The aim of this study is to determine the prevalence and correlates of anxiety disorder, depression, and posttraumatic stress disorder (PTSD) among adolescents living in Wharf Communities in Freetown, Sierra Leone in the Post-Ebola period.

1.5 SPECIFIC OBJECTIVES:

The objectives of this study are:

1. To determine the prevalence of anxiety disorders, depression, and PTSD in adolescents in the Wharf communities

2. To document the reported physical and emotional experiences of the adolescents during the EVD epidemic

3. To determine the coping strategies reportedly used by these adolescents to deal with stressful event

4. To determine the socio-demographic correlates of anxiety, depression, and PTSD in these adolescents.

5. To determine the association between adolescent's reported experience of the EVD epidemic, coping strategies used and the presence of anxiety disorder, depression, and PTSD

1.6 PRIMARY OUTCOME MEASURES

Primary outcome measures are prevalence of PTSD, Anxiety Disorder and Depression.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The period of adolescence is characterized by rapid changes physically, mentally, emotionally and socially (WHO, 2016a). Consequently, adolescents need enabling and supportive environments to develop into healthy adults that can function successfully in the thought, mood and behavioural realms, and engage in productive activities and fulfilling relationships (Chambers et al., 2003). Studies have established that adolescents living in less privileged environments and those exposed to traumatic events are more likely to experience significant impairment in their cognitive, affective or relational abilities than their counterparts (Ardington and Case, 2010; Escarce, 2003).

2.2 The period of adolescence and its peculiarities

Navigating through adolescent period involves dramatic changes which are physical, social/emotional, and cognitively (WHO, 2016a). All these changes are influenced by external factors including the environment, culture, religion, school, and the media (Omigbodun, 2006; Abdulmalik et al., 2009; Chambers et al., 2003).

The psychoanalytic theory of Erikson identified eight stages of human psychosocial development from birth to death, including the period of adolescence (McLeod, 2013a). Erikson described adolescence as a period when individuals become more aware of themselves as individuals and how they appear to others (McLeod, 2013a). He was of the opinion that unsuccessful mastery of each stage of development will reappear as a problem in the future.

According to Stanley Hall the period of adolescence can be described as 'storm and stress'. Hall explained that adolescence corresponds to a time when the human race was in a turbulent transitional stage and the emotional life of the adolescent was seen as an oscillation between contradictory tendencies(Arnett, 2006).

2.3. Impact of traumatic events on adolescent mental health

Adolescents exposed to traumatic events such as the death of loved one, physical and sexual abuse, war, natural disaster and other life changing events are associated with increased risk of developing mental health problems and mental disorders such as posttraumatic stress disorder (PTSD), anxiety, depression and substance abuse. This risk is higher when the traumatic event affects them directly as in sexual assault and physical injury (Omigbodun et al., 2008).

When psychosocial attributes were determined among orphaned youths in Nigeria, low self-esteem was found to be associated with orphanhood (Omigbodun, 2006).

Depressed adolescents exhibit high levels of risky behaviours including engaging in unprotected sexual activity (Milhausen et al., 2003). Other behaviours include alcohol, tobacco, or other psychoactive substance use that may affect their mental and physical health (Nduna et al., 2010, Peltzer, 2009). A study conducted by Abdulmalik and colleagues, (2009) reported a rate of 66.2% psychoactive substance use among street children in Northern Nigeria (Abdulmalik et al, 2009).

2.4 Common mental health disorders in adolescence

Mental health disorder is common among adolescents and a prevalence of one in every five adolescents has diagnosable mental health disorder (Kessler et al., 2007) and half of all adult mental health disorders start during adolescent period (Kessler et al., 2007).

2.4.1 Depression

Depression is a common mood disorder that is most often characterized by persistent low mood, low energy, and loss of interest in once pleasurable activities. The symptomatic presentation of depression varies between adult and children- the latter usually present with irritability instead of low mood; but adolescents with depression presents with a similar clinical course as adults (American Psychiatric Association, 2013). Depression is associated with poor academic performance, low self esteem, psychoactive substance use, and suicidal thoughts or attempts (Adewuya and Olagun, 2006; Nalugya-Sserunjogi et al, 2016).

Epidemiology of depression

Depression among adolescents is a significant issue of public health concern. In a study reviewing recent community studies across the world reported the prevalence of depression among children and adolescents to range from 0.2% to 17% for major depression (Merikangas et al., 2009). And in studies from sub-Saharan African countries, Maria and colleagues reported a rate of 18.0 % among adolescents living with HIV in Malawi (Maria et al., 2015), Barhafumwa et al, (2016) reported a prevalence of 33.0% among adolescents in South Africa, and also from Kenya, a rate of 26.4% was reported among adolescents in public secondary school (Khasakhala et al., 2012). But in Nigeria, a lifetime prevalence of 1.9%- 7.4% was reported among adolescents attending secondary school in South-east Nigeria (Chinawa et al., 2015).

2.4.2 Anxiety Disorders

Nervousness, fear, apprehension and worrying can be normal as an individual faces life's issues daily, therefore some level of anxiety can be a normal reaction that helps adolescents

deal with stressful situations. Anxiety can become an issue of concern when these symptoms persist to the level of affecting daily functioning. Anxiety disorder according to ICD-10 and DSM-V can be classified as generalized anxiety disorder, social phobia, panic disorder, specific phobias and separation anxiety.

Epidemiology of anxiety disorders

Anxiety disorder is classified as the most common psychopathology among children and adolescents worldwide (Merikangas, 2009).The prevalence of anxiety disorders among adolescents in developed countries has been reported to range from 2% to 24% (Merikangas, 2009; Erskine et al, 2016). Review of mental health disorders in Iran reported a rate of 6.8% to 85% among children and adolescents (Zarafshan et al., 2015). Similarly Abbo and colleagues carried out a study among adolescents aged 14 to 19 years in North-east Uganda and had a prevalence of 26.6% (Abbo et al., 2013).

Reviewing the magnitude of mental disorders in children and adolescents from studies worldwide, Merikangas observed that generalized anxiety disorder and social anxiety were the most common anxiety disorders among youths (Merikangas, 2009). Similarly, genealized anxiety disorder was found to be the most common anxiety disorder among secondary school children in an Urban city in Nigeria. But post traumatic stress disorder was found to be the most common anxiety disorder among children in the mid and late adolescence stage in North-east Uganda (Abbo et al, 2013).

2.4.3 Post traumatic Stress Disorder (PTSD)

PTSD is an anxiety disorder that occurs in individuals who have witnessed traumatic events that can be shocking, scary, or dangerous (ADAA, 2016). According to DSM-5, symptoms of PTSD includes intrusive memories, persistent avoidance of the stimuli, negative changes in

thinking and mood, and changes in physical and emotional reactions (American Psychiatric Association, 2013). Symptoms are usually self-limiting after an exposure to traumatic events but PTSD is considered when these symptoms persist for a month, with associated significant distress or impairment in general functioning (American Psychiatric Association, 2013).

Theories that underlie the development and maintenance of PTSD have been postulated to shed more light on the various symptoms associated with the disorder (Brewin and Holmes, 2003).

Cognitive model of PTSD

This involves the understanding of PTSD from a cognitive perspective as a disorder in which the problem is recollection of what happened at a particular event (Ehlers and Clark, 2000). There is an associated anxiety because of judgement relating to the impending threat.

The model proposes that a sense of current threat can be derived from two key processes (Ehlers and Clark, 2000).. The first process is that PTSD develops in individuals who are unable to see that trauma is a time-limited event that will not have general negative impact for their future. The threat might either be internal or external. The second process relies on individual differences in the way we remember events and the link it has to other autobiographical memories. Patients may have fragmented or poorly organised intentional recall of the traumatic event (Ehlers and Clark, 2000).

Emotional processing theory

This theory developed by Foa and Kozak (1986), states that there are structures which represent fear on exposure to a stimulus that are designed as a programme to avoid or escape danger. They have connection to both response elements such as physiological and behavioural elements and meaning elements.

Survivors of traumatic events with PTSD experience two basic dysfunctional cognitions that support its development and maintenance. The first is that 'the world is completely dangerous' and the second is that 'one's self is totally incompetent' (Rauch, 2006).

Epidemiology of PTSD in adolescents

According to report from the National Centre for PTSD a Lifetime prevalence of 5% was reported among adolescents aged 13-18 years in America (Hamblem and Barnett, 2016). This is contrary to what is seen in low and middle income countries, because most studies in these countries are focused on 'high-risk' population defined by exposure to trauma (Dorrington et al., 2014). Some studies in low and middle income countries have reported a high rate of PTSD among adolescents. Parveresh et al, (2009) reported a rate of 51.6% among adolescents less than 15 years and 36.3% in those older than 15 (Rajkumar, 2008; Parvaresh and Bahramnezhad, 2009). Contrary to these findings, Sheikh et al, (2016) reported a lower rate of 4.1% probable PTSD among Nigerian children and adolescents, living in a camp for internally displaced persons due to post-election violent conflict. This lower prevalence was attributed to the fact that the children and adolescents are living with their parents in the camp, and that they had access to the provision of psychosocial interventions (Sheikh et al, 2016).Betancourt et al, (2016) reported a rate of 11.3% among adults aged 18 years and above in Sierra Leone (Betancourt and Brennan, 2016).

2.5 Risk factors for mental health disorders in adolescents

Interplay between Bio-psycho-social factors increases the risk of developing mental health disorders (Patel et al., 2007). Studies have established that abuse (physical, sexual, emotional or neglect), the disintegration of family structure leading to inconsistent care-giving, poor family discipline and management, and family conflict are among the factors which predisposes young people to behavioural and emotional problems (Fisher et al., 2011).

2.5.1 Depression

Possible risk factors for depression among adolescents could be socio-demographic factors or factors related to traumatic exposure.

Socio-demographic factors

Depression in adolescents is more common after puberty, and is often confused with adolescent mood swings. Birmaher and colleagues reported that the increase in the rate of depression during this period might be due to the increased hormonal surge especially in females (Birmaher et al., 2007). Studies have reported a female preponderance of depression with a male: female ratio of 1:2 among adolescents in developed countries (Birmaher et al., 1996; Piccinelli, 2000). Similarly, studies in sub-Saharan Africa reported the rate of 5.5% among male adolescents and 8.9% among the females (Adewuya et al., 2007).

Depressive disorders in children and adolescents have been found to be associated with mothers with no formal education, parental separation or divorce, living with single parent or other relative and poor school performance (Guereje and Omigbodun, 1995).

Traumatic factors

According to a study conducted among adolescents in Malawi, adolescents exposed to emotional and physical abuse were more likely to experience depression irrespective of gender (Ameli et al., 2017). The risk of developing depressive symptoms was found to be twice (28.1%) among adolescents exposed to trauma as compared to those not exposed to traumatic conditions (Omigbodun et al., 2008, Sheikh et al., 2015)

2.5.2 Anxiety

The risk factors for anxiety disorders are observed to be related to socio-demographic factors and life events.

Socio-demographic factors

Generalized anxiety disorder and social anxiety are most prevalent anxiety disorders among young people. The age of first onset of anxiety disorders in children and adolescent is unclear, but studies have suggested that anxiety disorders especially separation anxiety disorder and specific phobias begin in childhood before the age of 12 years (Becker et al., 2007, Kessler et al., 2005).

Anxiety disorders have a female preponderance in adults correspondingly, this is the same trend observed in adolescents, but there is no significant difference in the age of onset among males or females (Katja et al, 2009).Socioeconomic status and educational level of parents were found to have a significant association with increase risk of anxiety disorders among adolescents (McLaughlin, 2012).

Life events

These are events experienced by adolescents that can significantly change their normal routine (Omigbodun et al, 2006). In a study conducted among adolescent female rape survivors in Cape Town, 16.1% were reported to have anxiety disorders (Oshodi et al., 2016). Similarly, findings from a study conducted among Nigerian youth in high schools exposed to physical abuse, revealed that physical abuse from parents was associated with anxiety disorders (Fakunmoju et al, 2015).

2.5.3 Post traumatic stress disorder

Exposure to traumatic events does not invariably result in the development of PTSD; it is important to identify the individual vulnerability factors that contribute to PTSD development, beyond the traumatic experience. Research reports possible risk factors for PTSD(Parvaresh and Bahramnezhad, 2009) as socio-demographic factors, history of previous trauma, previous psychiatric illness and low social support

Socio-demographic factors

The prevalence of PTSD varies across the stages of human development with the rate lower in childhood and adolescence. The reason for the lower prevalence in this population has been linked to the absence of diagnostic criteria for PTSD in children prior to the arrival of the DSM-5, resulting in the misdiagnosis of children. Studies have reported a relatively high rate of PTSD in adolescents less than 15 years (51.6%) among Bam earthquake survivors and 70.1% (acute PTSD) and 10.9% (delayed onset PTSD) among survivors of the tsunami disaster in Tamil Nadu (Parvaresh and Bahramnezhad, 2009).

PTSD has been reported to be commoner among females than males. Mclean and colleagues reported a male: female lifetime prevalence ratio of any anxiety disorder as 1:1.7, but gender differences were not observed in the age of onset and chronicity of these disorders (McLean et al, 2011). Therefore it is evident that in traumatic experiences, females are more prone to develop PTSD than their male peers.

History of previous trauma

Studies have shown that multiple previous traumatic experiences can increase an individual's risk of developing PTSD (Breslau, 1999). Most Sub-Saharan countries, like Sierra Leone

have had recurrent traumatic events which has the potential of increasing the risk of developing PTSD among the populace (Betancourt, 2010; Kallay, 2015).

Previous psychiatric illness

An individual with prior history of anxiety and other emotional disorders is more likely to develop PTSD when exposed to traumatic events (Breslau et al., 1991, McFarlane, 1989).

Owing to the huge mental health treatment gap in Africa and the limited awareness of mental health services in the country, many adolescents may not be aware that they are predisposed to PTSD (WHO, 2016c).

Low social support

The 'Perception or actuality that one is not cared for, has little or no assistance available from other people, not being a part of a supportive social network' describes an individual with low social support. Studies have reported that, individuals with low social support have poor coping strategies and are at a high risk of developing PTSD when exposed to traumatic events (Brewin et al., 2000; Elklit., 2012).

2.6. Sierra Leone- traumatic events and their impact on the mental wellbeing of adolescents

Studies have established that traumatic experiences are common in adolescence and can significantly affect the adolescent's psychological and emotional well-being (Omigbodun et al., 2008). Sierra Leone has a predominantly youthful population (Statistic Sierra Leone, 2015) and has experienced repeated traumatic situations (Betancourt, 2010; Kallay, 2015; WHO,2016).

4.6.1 Traumatic events in Sierra Leone

Civil conflicts

Civil conflicts have been one of the most traumatic events experienced in several African countries over the past three decades (Piot, 2014). In majority of these countries, the conflict is mainly associated with internal politics, ethnic and religious conflicts (Elbadawi and Sambanis, 2000).

In all these conflicts, women and children are the most vulnerable (UNICEF, 2005). Thousands of children have been recruited as child soldiers and many more made orphans (Breuning, 2011; Global Report, 2008) and very often, children are faced with immense hardship and torture that adversely affect their life's trajectory (Barbara, 2006; Betancourt, 2010).

Natural disasters

Vast deforestation has predisposed countries to recurrent natural disasters (Reyers, 2015), such as landslides and flooding. These disasters have reportedly claimed many lives, destroyed several homes causing enormous displacement. In 2015, Sierra Leone experienced one of the deadliest flooding brought by torrential rainfall (Ratto et al, 2016).It was a very traumatic event that left four people dead and many others homeless. Many people dreaded the effects of this event because it occurred at the period of the Ebola outbreak in the country. The government had to intervene urgently by moving occupants in the most vulnerable communities such as the slums to much safer environments (Ratto et al., 2016).This period was associated with immense nationwide panic.

Ebola virus disease outbreak

About four decades ago, the first outbreak of EVD was reported in Yambuku village near the Ebola River in the Democratic Republic of Congo (DRC). Over this period a series of recurrent outbreaks had occurred in various parts of DRC and Uganda. An observation made by Alicia and colleagues in the analysis of these outbreaks was a pattern of high case fatality rate of patients less than 5 years and those above 15 years (Rosello, 2015). Children have relatively high chances of dying from this disease because they are particularly susceptible to dehydration.

According to Rosello and colleagues, in the analysis of the series of outbreaks in Congo an average of 57% of cases were females. They also discovered that the mean case fatality rate (CFR) was 79% and all children under 2 years of age died (Rosello, 2015). Contrary to their findings, the West Africa outbreak was observed to have a lower CFR of about 50% (WHO, 2016b) and equal male and female cases with children below 14 years accounting for 19% and 58% of young adults above 15 years (Leligdowicz et al, 2016).

Transmission of EVD among humans is via direct or indirect contact with infectious body fluids (WHO, 2014b); therefore controlling the spread of the disease can be achieved by primarily avoiding direct contact with infected person and/ or their body fluids (WHO, 2017b). A study conducted in Nigeria during the West Africa EVD epidemic reported that compliance to WHO infection control guidelines (WHO, 2017b) improved significantly because of fear of the disease (Yusuf et al., 2014)

4.6.2 Impact of the Ebola Virus Disease on the mental wellbeing of adolescents in Sierra Leone

Survivors

Children and adolescents infected by the Ebola virus disease according to UNICEF accounted for 20% of all confirmed cases (UNICEF, 2016). Studies have shown that in earlier EVD outbreaks, the most common symptoms of EVD were fever, vomiting and haemorrhage (Rosello, 2015). Haemorrhage was pathognomonic of Ebola hence, the name haemorrhagic fever. A study conducted among Ebola survivors in Liberia described experiences faced by survivors when discharged from the Ebola treatment unit as ambivalence. Some were ostracized from their family, work places and communities. Others had to battle with various complications from the disease (Rabelo et al., 2016). These conditions are recipe for the development of mental health disorders such as depression, anxiety disorders and posttraumatic stress disorders.

Orphans

More than 16,000 children lost their parents or caregivers to Ebola in the West Africa outbreak (UNICEF, 2016). They experienced various challenges during the outbreak such as rejection from their surviving relatives for fear of the infection; they were vulnerable to stigmatization, hunger, malnutrition, and in some cases violence (UNICEF, 2016). Also some older children assumed parental responsibility of their younger ones (Murphy, 2015).

Cheney reported in her ethnographic study of Ugandan children affected by AIDS that orphans are challenged with immense emotional pain and loss but the communities do not encourage them to express them (Cheney, 2015). Nyamukapa and colleagues concluded that orphan hood is associated with psychosocial distress, which was identified, by Sengendo and

others as change in the quality of their lives. Most of these children lost hope when their parents died resulting in sadness and helplessness (Nyamukapa et al., 2008, Sengendo and Nambi, 1997).

In a study conducted in Nigeria, on the psychosocial attributes of orphaned youths, Omigbodun found that orphans within the adolescent age group experienced low self-esteem and were more likely to have to work to earn money (Omigbodun, 2006)

Teenage pregnancy

Teenage pregnancy has been a serious challenge in low and middle-income countries over the years and approximately one million births occur to girls under 15 years every year (WHO, 2014). Sierra Leone is among those African countries where 10% of girl children become mothers. Secure Livelihoods Research Consortium (SLRC) in highlighting the impact of the Ebola outbreak, noted that the rate of teenage pregnancy increased during the outbreak (Denney et al, 2015). Though the extent of the increase is debatable, the Ministry of Education, Science and Technology reported that approximately 3,000 schoolgirls across the country became pregnant and were excluded from school and banned from exams (Amnesty, 2015). There were further reports that these girls were blamed and shamed for their actions. Activities associated with the long break from school and the prohibition of all public gatherings due to the outbreak might have increased their risk of getting pregnant.

Studies have noted that the consequences of teenage pregnancy are incomplete education, complications during pregnancy and childbirth, rejection by family, friends, and community and the development of psychopathologies (Ayuba and Gani, 2012; Melvin and Uzoma, 2012).

CHAPTER THREE

METHODOLOGY

3.1. Study Location

The study was conducted in the Wharf communities in the eastern part of Freetown, Sierra Leone. Sierra Leone is located on the west coast of Africa and is surrounded on the northeast by the Republic of Guinea, Liberia on the southeast and the Atlantic Ocean on the southwest. The country is divided into four regions, which are subdivided into 14 districts, and subsequently 149 chiefdoms. Freetown, the capital city is located in the western urban region (Statistic Sierra Leone, 2013).

The major landmarks of the country are the hills and mountains which rise impressively from 200 to 1,000 meters above the coastal are (Statistic Sierra Leone, 2013).. Climate in Sierra Leone is characterised by two main seasons: rainy/wet season and the dry season. There are fifteen ethnic groups in the country but the major tribes include the Mende, Temne, Limba and Creole. English language is the official language (Statistic Sierra Leone, 2013). Islam and Christianity are the two main religions practiced in Sierra Leone (Statistic Sierra Leone, 2013).

The ethnic groups are uniquely distributed within the four regions, with the Creole predominantly stationed in Freetown the largest city in the country. Therefore, the most widely spoken local language in the country is Krio (broken English) which originated from the Creoles. There has been a massive migration of people from the rural areas of the country to Freetown due to the devastating 10-year civil war, which resulted in the development of many slums around the Freetown area and especially along the coastal margin (Statistic Sierra Leone, 2015).

The Wharf communities are inhabited by diverse groups of people, especially migrants from various regions of the country but predominantly the Temne, from the northern region (Statistics Sierra Leone, 2013). Islam is the most commonly religion among the Wharf communities and the main source of livelihood is fishing and petty trading (Statistic Sierra Leone, 2013).Inhabitants of these communities have experienced diverse traumatic events including flooding, stone-slid disaster, and disease outbreaks. Despites these experiences, there is still ongoing migration of people to these communities, hence worsening the living condition of inhabitants (Statistics Sierra Leone, 2015).

Magazine and Moa Wharf community have a total of 1,850 houses that accommodates a total population of 8,006; the male population constitutes 51.5% (Statistics Sierra Leone, 2013). Structures within the community that are geared to meet the socio-cultural needs of the inhabitants include three mosques, three primary schools, one secondary school and a three-bed community health centre that is operated by two community health officers and 21 nurses.

3.2. Study design

This was a cross sectional study to evaluate mental health outcomes among adolescents living in the Wharf community following the 2014/15 Ebola virus disease (EVD) outbreak.

3.3 Study population

The study was conducted among adolescents aged 13-19 years old in the Wharf community, in Freetown. The selection of a minimum age of 13 years was done because the instrument used for the assessment of depression and anxiety required a minimum age of 13 years.

Inclusion criteria

1. Adolescents whose parents/guardians gave consent to the study, and adolescents who gave assent to participate.

2. Adolescents who lived within the wharf communities during the 2014/15 Ebola outbreak.

3. Age bracket of 13-19 years

Exclusion criteria

1. Severely ill adolescents were excluded from the study

2. Adolescents with a previous history of mental disorder

3.4. Sample size estimation

The prevalence of PTSD was estimated at 50% because the author could not find any previous studies on mental disorders among adolescents in Sierra Leone in the literatures. With a precision of 5% (0.05) and a confidence interval of 95% (1.96), the minimum sample size that was needed to estimate the mean of PTSD was calculated using the formula:

$$n = \frac{Z^2 pq}{d^2}$$

Where,

n = required sample size

Z_α = Z statistic for a level of confidence, 95% = 1.96

p = prevalence = 50% = 0.5

q = 1-p = 1-0.5 = 0.5

d = degree of precision 5% = 0.05

Thus, the minimum sample size (n) proposed for this study was

$$\frac{(1.96)^2 \text{x } 0.5 \text{ x } 0.5}{(0.05)^2}$$

= 384.16

n = 384

Assuming non-responsive rate of 10%, the adjusted minimum sample size was $\underline{n=}$ 1-10% =427

3.5. Sampling Technique

Cluster sampling of 427 adolescents in the Wharf communities was done. The sampling unit was a household with an adolescent, age 13-19 years and the informant was the adolescent. The sampling was done in stages.

Stage one: A map obtained from the Statistics Sierra Leone, shows that the Wharf communities were divided into fifteen (15) clusters. By using a simple balloting technique, ten (10) out of the 15 clusters were sampled.

Stage two: Among the 10 selected clusters, 5-8 compounds were selected by proportional sampling according to the size of the cluster.

Choosing a starting cluster and compound was also done by random selection (i.e. simple balloting) from among the 10 clusters

Stage three: At the selected starting compound, the first house was randomly selected. Alternate houses were visited and a maximum of two (2) adolescents who met the inclusion

criteria were randomly selected from each house (i.e. where there were more than two adolescents, simple balloting was done to choose the two adolescents that were recruited into the study). A ceiling to the maximum number of adolescents from each household was done in order to achieve a good coverage of the community. Moving from the starting house, the other houses were visited in a clockwise direction. Households with no adolescent present or one who met the inclusion criteria were skipped and the next available house was sampled. At the end of the starting cluster, the adjacent cluster was visited in a clockwise direction. This was done until the required sample size was obtained.

3.6. Study instruments

The following are the various questionnaires used for data collection

3.6.1 Adapted Socio-demographic Questionnaire (Omigbodun et al. 2008) (See appendix II)

This questionnaire was designed to capture data on respondent's personal and family characteristics, coping strategies and the reported experiences EVD epidemic. The questionnaire was adapted from a 40-item school health questionnaire designed by Omigbodun and Omigbodun (2008). For ease of administration and respondent's understanding, the adapted questionnaire was translated to Krio (Broken English)

3.6.2 Child Post traumatic stress disorder checklist (See appendix III)

This is a 40-item questionnaire that screens for PTSD in children aged 7-18 years. Validated in South Africa among adolescents 10-19 years; Cronbach's α estimate for full scale is .93 (Boyes et al., 2012).

The instrument is designed to screen for;

1. Traumatic events- include items 1-13 and the responses are coded '0' and '1'. It scores the totality of events.

2. PTSD symptoms- include items 14-34 and the responses are coded 0-4. The scores are summed up and a 'probable diagnosis' of PTSD is based on a cut off of 20.

3. Functional impairment- items 35-40 and the responses are coded 0-4. The cut off ≥4 indicates a functional impairment.

This instrument has been used in several African communities, including Nigeria (Akpobi-Madu, 2014), to assess the psychological effect of exposure to traumatic conditions on adolescents. The questionnaire was translated in Krio.

3.6.3 Adapted Beck's Depression Inventory (see appendix IV)

This is a 21-item questionnaire that is used to screen for depression. The responses for the various items are coded 0-4 and the score for each question are summed up to give a total score which indicates the levels of depression. The various levels of depression, ranges from normal (≤10) to extreme depression (>40).

In screening for depression among adolescents, the BDI has been used in a variety of cultures including Nigeria. It was validated for use among Nigerian students with a cut-off point for depression as 18 and above; and was also reported to have good psychometric properties (Adewuya, 2007).

3.6.4   Adapted Beck's Anxiety Inventory (see appendix V)

This 21-item instrument is a widely used tool that screens for symptoms of anxiety.

Each question has its responses coded 0-3 and the scores are summed up to give a grand total that indicates the level of anxiety. The various levels of anxiety, ranged from very low anxiety (0-21) to potential cause for concern (>36)

3.7   Study procedure

At the household where an adolescent met the inclusion criteria, both consent and assent were obtained from the caregivers and the adolescents respectively.

The informed consent form, which explained the aims and objectives of the study, was written in English and translated to Krio. It was administered to the adolescents > 18 years, and they were required to sign or thumbprint. Adolescents' ≤ 18years gave assent after their caregivers had signed the informed consent form.

After obtaining the informed consent and assent from the caregiver and the adolescent respectively, the various questionnaires were administered in English and Krio (and the information obtained was recorded in the respective questionnaires. Administration of the questionnaire was in this order:

- Adapted socio-demographic questionnaire
- Child PTSD checklist
- Adapted Beck's depression inventory
- Adapted Beck's anxiety inventory

3.7.1 The Pre-test

Before the start of data collection, a trained researcher administered all the study instruments to 10 adolescents in the Kroo Bay community; an environment that is similar in characteristic as the study site. The instruments were found to be appropriate for use among adolescents in this community.

3.8   Data management and analysis

Data collected was cleaned and coded. Statistical analysis was done by entering the coded data into the Statistical Package for the Social Sciences (SPSS) 20.0 version. Quantitative variables such as age were summarized using mean and standard deviation while qualitative variables such as sex and educational level were summarized using frequencies and proportions. Frequency tables were used to present socio-demographic characteristics, reported experiences of adolescents during the EVD epidemic and coping strategies used by these adolescents to deal with stressful events. Association between PTSD, depression, anxiety and socio-demographic characteristics, reported experiences of the EVD epidemic and coping strategies were determined using the Chi-square test and logistic regression. Selection criteria of 20% level of significance was used to input variables into the logistic regression and Statistical significance was set at $p<0.05$.

3.9   Ethical consideration

Permission to conduct the study was acquired from the Sierra Leone Ethics and Scientific Review Committee and the following ethical issues were regarded:

Autonomy

Complete information explaining the purpose of the study was given to the participants in a simple and understandable language that empowered them make an informed consent. The

choice to consent to or opt out of the study at any point was provided without any associated consequences.

Confidentiality

The data collected from the subjects were coded using study numbers to ensure confidentiality and to facilitate data analysis. No names or any other forms of personal identification were used in the questionnaire.

Beneficence to participants

Participants had their body mass index assessed and any health advice needed was given accordingly. Those identified with health issues were appropriately referred.

Non-maleficence to the participant

The process of data collection did not involve any invasive procedure or collection of biological samples. To minimize inconveniencies to the participants, the time most convenient for the data collection was used.

Justice

The study participants were randomly selected to reduce bias in the selection process and they had equal opportunity to be a part of the study.

Voluntariness

Maximum effort was made to ensure that participants were not coerced or unduly influenced to participate in the study.

CHAPTER FOUR

RESULTS

This chapter consists of findings from a descriptive cross-sectional study among adolescents living along the Wharf in Freetown, Sierra Leone. It is presented in accordance with the objectives and research questions of the study, and thus, is divided into five (5) sections as follows:

a. Section one presents the socio-demographic characteristics of participants

b. Section two presents the prevalence of anxiety disorders, depression, and PTSD among adolescents in the wharf communities

c. Section three presents reported experiences of the adolescents during the EVD epidemic and coping strategies used by these adolescents to deal with stressful events.

d. Section four presents the socio-demographic correlates of anxiety, depression and PTSS among the respondents

e. Section five presents the association between adolescents' reported experience of the EVD epidemic, coping strategies used and the presence of anxiety disorder, depression and PTSD. This section also presents multiple regressions of significant associations between socio-demographic variables and anxiety, depression and PTSD.

A total number of 429 adolescents participated in this study. Some of the questions were left unanswered; hence not all the variables add up to 429.

Section 1- Socio-demographic Characteristics of the participants

The following subdivisions are used to present the socio-demographic characteristics of the study population:

- 4.1a**.** Personal Information
- 4.1b.Family-related Information

4.1a. Socio-demographic Characteristic: Personal Information

Information involving the personal Socio-demographic characteristics of the respondents is illustrated in Table 4.1a.The mean age of the respondents was 15.3 (±1.8) years old, with over half (57%) of the respondents aged from 13 to 15 years. The male to female ratio was 2:3, and the overwhelming majority of the respondents (94.9%) reported Islam as their religion. Majority (86.9%) of the adolescents were in school and of these in-school adolescents, almost half (45.8%) reported they had to work to earn money before or after school (See Table 4.1a).

Table 4.1a: Socio-demographic characteristics of study population: Personal information (N = 429)

Variables	Frequency (n)	Percentage (%)
Age of adolescent (years)		
13-15	245	57.1
16-19	184	42.9
Total	**429**	**100**
Sex of adolescents		
Male	172	40.1
Female	257	59.9
Total	**429**	**100**
Religion		
Islam	407	94.9
Christianity	22	5.1
Total	**429**	**100**
Level of education		
Primary	120	28.0
Junior sec. school	174	40.5
Senior sec. school	79	18.4
Not in school	56	13.1
Total	**429**	**100**
Work to earn money before or after school		
Yes	171	45.8
No	202	54.2
Total	**373**	**100**

4.1b. Socio-demographic Characteristics: Family-related Information

Table 4.1b illustrates the adolescents' family-related characteristics. More than half (52.2%) of the adolescents reported that they were from a monogamous family type, 17.2% had parents who were either separated or divorced and 15.6% had one or both parents' dead. About one-third (38.2%) of the adolescents were living with both parents, and 20.3% were living with other relatives (See Table 4.1b).

Table 4:1b Socio-demographic characteristics of study population: Family Information

Variable	Frequency (n)	Percentage (%)
Family type		
Monogamous	224	52.2
Polygamous	205	47.8
Total	**429**	**100**
Number of mother's children		
1-2	51	11.9
3-4	170	39.6
>4	208	48.5
Total	**429**	**100**
Number of father's children		
1-2	30	7.0
3-4	124	28.9
>4	275	64.1
Total	**429**	**100**
Marital status of parents		
Married	287	67.1
Separated/divorced	74	17.3
Single parents	67	15.6
Total	**428**	**100**
Current caregiver		
Parents	164	38.2
Single parent	132	30.8
Grandparents	46	10.7
Others	87	20.3
Total	**429**	**100**
Father's Level of education		
No formal education	149	35.6
Koranic/primary	82	19.6
Secondary/higher	187	44.8
Total	**418**	**100**
Mother's Level of education		
No formal education	266	62.7
Koranic/primary	60	14.2
Secondary/higher	98	23.1
Total	**424**	**100**
Father's Occupation		
Unskilled &semi-skilled	370	86.2
University & professional	48	11.2
I don't know	11	2.6
Total	**429**	**100**
Mother's occupation		
Unskilled & semi-skilled	419	97.7
University & professional	7	1.6
I don't know	3	0.7
Total	**429**	**100**

4.2 Prevalence of anxiety disorders, depression, and PTSD in adolescents in the Wharf communities

Table 4.2 presents the prevalence of PTSD, depression and anxiety. About one in every four respondent had a probable diagnosis of PTSD and anxiety; 24.0% and 24.7%, respectively, while about one in every five (21.2%) had depression (See Table 4.2).

Table 4.2: Prevalence of anxiety disorders, depression, and PTSD in adolescents in the Wharf communities (N = 429)

Variables	Frequency (%)
PTSD	
No PTSD	326 (76.0)
Probable diagnosis of PTSD	103 (24.0)
DEPRESSION	
No depression	338 (78.8)
Depression	91 (21.2)
ANXIETY	
No anxiety	323 (75.3)
Anxiety	106 (24.7)

4.3: Reported experiences of the adolescents during the EVD epidemic and coping strategies used by these adolescents to deal with stressful events

4.3a: Reported experiences of the adolescents during the EVD epidemic

Table 4.3a describes the reported experiences of the adolescents during the EVD epidemics. Out of the 429 respondents, 5.1% reported they were infected with EVD during the epidemic, 14% reported their family members were infected with EVD and 11.9% stated they lost loved ones during the epidemic (See Table 4.3a).

Table 4.3a: Reported experiences of the adolescents during the EVD epidemic (N= 429)

Variables	Frequency (%)
Adolescents infected with EVD	
Yes	22 (5.1)
No	407(94.9)
Adolescent's family experience of EVD	
Yes	60 (14.0)
No	369 (86.0)
Adolescents who lost loved ones during the Ebola epidemic	
Yes	51 (11.9)
No	378 (88.1)

4.3b   Qualitative analysis of reported experiences of the adolescents during the EVD epidemic

4.3b.1 Effect of EVD outbreak on adolescents

Over half (58.3%) of the participants stated that they were affected by the outbreak because of Ebola regulations requiring restriction of movement and reduction of body contact. About 21% of the participants reported that they were afraid, worried or upset. Over 7% were affected by the loss of loved ones, whilst 13.2% reported they were not directly affected by the Ebola epidemic (See Table 4.3b.1).

Table 4.3b.1 Effect of EVD outbreak on adolescents (N=424)

Themes	n	%
Ebola regulations required restriction of movement and reduction of body contact to prevent spread	242	58.3
"*The outbreak prevents me from attending school*"		
"*My movement was restricted*"		
"*I was infected with EVD and I had to be quarantined*"		
"*The outbreak has increased my awareness about personal hygiene*"		
Fear/Afraid/Terrified/worried/upset	90	21.2
"*I was afraid that I might get infected*"		
"*I was very worried and upset because many people were getting infected*"		
I lost loved ones	31	7.3
"*I lost my parents during the EVD outbreak*"		
"*I lost my entire family during the outbreak, am the only survivor*"		
"*My best friend was infected with the EVD and later died in the treatment centre*"		
Not affected directly	56	13.2

4.3b.2 Effect of EVD outbreak on adolescents' family

Families of almost half (48.6%) of the participants were affected by the restriction of movement that resulted in financial difficulties as businesses were closed down and family members not living in the same house had difficulty interacting with each other. Thirty-one percent of adolescents expressed that their families were emotionally distressed after the death of their loved ones, and had fear or anxiety. Less than 1% reported their families had become more aware of the need to maintain personal hygiene and were appreciative of the aid they received from international organisations. Also, about a fourth (19.7%) of participants stated that their families were not negatively affected (See Table 4.3b.2).

Table 4.3b.2 Effect of EVD outbreak on adolescents' family (N=416)

Themes	n	%
Ebola regulations required restriction of movement and this resulted in financial difficulties as businesses were closed down and reduced family interactions.		
"My parents were restricted from going out to do their business"	202	48.6
"There was reduction in sales of our goods, because people were not allowed to move around"		
" We were not able to see other family members due to the lockdown"		
Emotional distress resulting from loss of loved ones, fear and anxiety.		
"We lost members of our family members"		
"We were sad because we lost our parents and were not able to give them a befitting burial"	129	31.0
"My grandmother refused to allow our friends visit the house, she was afraid that we might get infected with Ebola virus"		
Our family has become more sensitised to personal hygiene and we benefited from aid received from international organisations.		
"*Our awareness about hand washing has improved"*		
"Our family regularly received food items and beddings from government and NGOs during our quarantined period"	3	0.7
My family was not negatively affected	82	19.7

4.3b.3 Effect of EVD outbreak on adolescents' community

Majority of participants (58.9%) stated that their communities were affected because many took ill and many lost their lives resulting in increased fear, worries, anxiety, chaos and lack of trust. And 30.9% of the participants reported that because of the required restriction of movement in the community, all social and income generating activities were disrupted. On the other hand, 10.2% of participants acknowledged that there have been increased community development programmes including improved hygiene practices and waste disposal (See Table 4.3b.3).

Table 4.3b.3 Effect of EVD outbreak on adolescents' community (N=411)

Themes	N	%
Many people took ill and many lives were lost resulting in increased fear, worries, anxiety, chaos and lack of trust.	242	58.9
"Many people died in the community"		
"Several children were made orphans due to the death of their parents"		
"There was lack of trust among community people, therefore people were not allowing visitors in their house"		
Increased community development programmes including improved hygiene practices and waste disposal	42	10.2
"*Several toilets and taps were constructed in the community*"		
Ebola regulations required restriction of movement and this resulted in a disruption of social and income generating activities.	127	30.9
"*All community football activities were banned"*		
"The cinemas and game stations were closed down"		

4.3c Coping strategies used by adolescents to deal with stressful events

Over two-third of the participants reported they used emotion-focused methods of coping with stressful events, and 'Religion' was the most utilized sub-theme among these participants. About 25% of participants' made use of distraction (Avoidant coping) as a method of coping with stress and 13.1% sought out (problem-focused coping) ways they can combat stressful events (See Table 4.3c).

Table 4.3c Qualitative analysis of coping strategies used by adolescents to deal with stressful events

Themes	n	%
Emotion-focused Coping		
"I pray to God"		
"I explain the problem to my mother"	286	67.0
"I cry for awhile, because that will help ease the stress"		
Problem-focused Coping		
"I seek advice from an older person"	56	13.1
"I think of ways to solve the problem"		
Avoidant Coping		
"I listen to music"		
"I play football with my friends"	106	24.7
"I avoid the place where the stress or trouble is coming from"		

4.4: Socio-demographic correlates of PTSD, depression and anxiety

This section presents findings from the analysis for an association between PTSD, depression, anxiety and the socio-demographic characteristics of adolescents. It is presented as follows:

- 4.4a. Socio-demographic correlates of PTSD

- 4.4b. Socio-demographic correlates of depression

- 4.4c. Socio-demographic correlates of anxiety

4.4a Socio-demographic correlates of PTSD in the Adolescents

Tables 4.4a.1 and 4.4a.2 illustrate the socio-demographic correlates of PTSD in the adolescents'. Adolescents aged 13-15 years old, had lower rates of PTSD (21.0%) compared to those aged 16-19 years old (28.3%), but this association was not significant (p= 0.074). One quarter (25.0%) of adolescents who reported being Muslims had PTSD compared to 4.5% of those who reported being Christians, and this difference was statistically significant (p=0.028). Students' not in school (37.5%) had higher rates of probable PTSD compared to those in Junior secondary school (26.4%), and Senior secondary school (17.7%). This difference was statistically significant (p=0.019).

Adolescents who were either single or double orphans had higher rates of PTSD (46.3%) than those whose parents were separated or divorced (35%) and whose parents were married (26%). This difference was statistically significant (p<0.001). Adolescents who lived with both parents (16.5%) or with grandparents (21.7%) had lower rates of PTSD compared to those living with a single parent (32.6%) or other relatives (26.4%). This difference is statistically significant p=0.013 (See Tables 4.4a.1 and 4.4a.2).

Table 4.4a.1: Socio-demographic correlates of PTSD in the Adolescents: personal information

Variables	Adolescent's probable diagnosis of PTSD Yes (%) n	No (%) n	Total	X^2	p value
Age of adolescents					
13-15	51(20.8)	194(79.2)	245(100)	3.192	0.074
16-19	52(28.3)	132(71.7)	184(100)		
Total	**103(24.0)**	**326(76.0)**	**429(100)**		
Sex of adolescents					
Male	37(21.5)	135(78.5)	172(100)	0.982	0.322
Female	66(25.7)	191(74.3)	257(100)		
Total	**103(24.0)**	**326(76.0)**	**429(100)**		
Family type					
Monogamous	59(26.3)	165(73.7)	224(100)		
Polygamous	44(21.5)	161(78.5)	205(100)	1.395	0.238
Total	**103(24.0)**	**326(76.0)**	**429(100)**		
Religion					
Islam	102(25.1)	305(74.9)	407(100)	4.815	0.028*
Christianity	1(4.5)	21(95.5)	22(100)		
Total	**103(24.0)**	**326(76.0)**	**429(100)**		
Level of education of adolescents					
Not in school	21(37.5)	35(62.5)	56(100)	9.979	0.019*
Primary	22(18.3)	98(81.7)	120(100)		
Junior secondary	46(26.4)	128(73.6)	174(100)		
Senior secondary	14(17.7)	65(82.3)	79(100)		
Total	**103(24.0)**	**326(76.0)**	**429(100)**		
Marital status of parents					
Married	46(16.0)	241(84.0)	46(16.0)	33.183	<0.001*
Separated/divorced	26(35.1)	48(64.9)	26(35.1)		
Others[a]	31(46.3)	36(53.7)	31(46.3)		
Total	**103(24.1)**	**325(75.9)**	**429(100)**		
Work to earn money before or after school					
Yes	133(77.8)	38(22.2)	171(100)	0.00	0.990
No	158(77.8)	45(22.2)	203(100)		
Total	**291(77.8)**	**83(22.2)**	**374(100)**		

* Relationship is significant; a= one or both parents dead

Table 4.4a.2: Socio-demographic correlates of PTSD in the Adolescents: family information

Variables	Adolescent's probable diagnosis of PTSD		Total	X^2	p value
	Yes (%) n	No (%) n			
Number of father's children					
1-2	8(26.7)	22(73.3)	30(100)		
3-4	34(27.4)	90(72.6)	124(100)	1.410	0.494
>4	61(22.2)	214(77.8)	275(100)		
Total	**103(24.0)**	**326(76.0)**	**429(100)**		
Number of mother's children					
1-2	13(25.5)	38(74.5)	51(100)	0.206	0.902
3-4	42(24.7)	128(75.3)	170(100)		
>4	48(23.1)	160(76.9)	208(100)		
Total	**103(24.0)**	**326(76.0)**	**429(100)**		
Position among father's children					
1st	27(31.4)	59(68.6)	86(100)	6.187	0.045*
2nd-3rd	36(18.7)	157(81.3)	193(100)		
4th +	40(26.7)	110(73.3)	150(100)		
Total	**103(24.0)**	**326(76.0)**	**429(100)**		
Position among mother's children					
1st	27(26.7)	74(73.3)	101(100)	6.304	0.043*
2nd-3rd	39(18.8)	168(81.2)	207(100)		
4th +	37(30.6)	84(69.4)	121(100)		
Total	**103(24)**	**326(76.0)**	**429(100)**		
Father's educational level					
No formal education	35(23.5)	114(76.5)	149(100)	0.607	0.738
Koranic/primary	22(26.8)	60(73.2)	82(100)		
Secondary/higher	42(22.5)	145(77.5)	187(100)		
Total	**99(23.7)**	**319(76.3)**	**418(100)**		
Mother's educational level					
No formal education	68(25.6)	198(74.4)	266(100)	1.228	0.541
Koranic/primary	13(21.7)	47(78.3)	60(100)		
Secondary/higher	20(20.4)	78(79.6)	98(100)		
Total	**101(23.8)**	**23(76.2)**	**429(100)**		
Current caregiver					
Parents	27(16.5)	137(83.5)	164(100)	10.838	0.013*
Single parents	43(32.6)	89(67.4)	132(100)		
Grandparents	10(21.7)	36(78.3)	46(100)		
Others[b]	23(26.4)	64(73.6)	87(100)		
Total	**103(24.0)**	**326(76.0)**	**429(100)**		

* Relationship is significant at p<0.05; b=other relatives (uncle, aunt and siblings)

4.4b: Socio-demographic correlates of depression in the Adolescents

Tables 4.4b.1 & 4.4b.2 presents the socio-demographic correlates of depression in the adolescent participants. Approximately 28% of adolescents aged 16 to 19 years old had depression compared to 16.3% of adolescents aged 13 to 15 years. This difference was statistically significant (p= 0.004). A higher proportion of female adolescents (23.3%) had depression compared to 18.0% of male adolescents. This difference was not statistically significant (p=0.186).

About 45% and 31.1% of adolescents with either one or both parents dead and parents that were separated or divorced respectively had depression compared 13.3% of adolescents with parents that were married. This difference was statistically significant p=<0.001. Also 31%, 26.5%, and 21.7% of adolescents living with other relatives, single parents and grandparents, respectively had depression compared to 11.6% of adolescents living with their parents. This difference is statistically significant p=0.001. Out of school adolescents had higher rates of depression (41.1 %) than those in school (11%-21%) and this was statistically significant (p<0.001) (See Tables 4.4b.1 & 4.4b.2)

Table 4.4b.1: Socio-demographic correlates of depression in the Adolescents

Variables	Depression		Total	X^2	p value
	Yes (%) n	No (%) n			
Age of adolescents					
13-15	40(16.3)	205(83.7)	245		
16-19	51(27.7)	133(72.3)	184	8.158	0.004*
Total	**91(21.2)**	**338(78.8)**	**429**		
Sex of adolescents					
Male	31(18.0)	141(82.0)	172		
Female	60(23.3)	197(76.7)	257	1.747	0.186
Total	**91(21.2)**	**338(78.8)**	**429**		
Family type					
Monogamous	48(21.4)	176(78.6)	224		
Polygamous	43(21.0)	162(79.0)	205	0.013	0.909
Total	**91(21.2)**	**338(78.8)**	**429**		
Religion					
Islam	89(21.9)	318(78.1)	407		
Christianity	2(9.1)	20(90.9)	22	2.039	0.153
Total	**91(21.2)**	**338(78.8)**	**429**		
Level of education of adolescents					
Not in school	23(41.1)	33(58.9)	56		
Primary	21(17.5)	99(82.5)	120		
Junior secondary	38(21.8)	136(78.2)	174	18.804	<0.001*
Senior secondary	9(11.4)	70(88.6)	79		
Total	**91(21.2)**	**338(78.8)**	**429**		
Marital status of parents					
Married	38(13.2)	249(86.8)	287		
Separated/divorced	23(31.1)	51(68.9)	74	37.421	<0.001*
Others[a]	30(44.8)	37(55.2)	67		
Total	**337(78.7)**	**91(21.3)**	**428**		
Number of father's children					
1-2	8(26.7)	22(73.3)	30		
3-4	30(24.2)	94(75.8)	124	1.812	0.404
>4	53(19.3)	222(80.7)	275		
Total	**91(21.2)**	**338(78.8)**	**429**		
Number of mother's children					
1-2	11(21.6)	40(78.4)	51		
3-4	38(22.4)	132(77.6)	170	0.266	0.876
>4	42(20.2)	166(79.8)	208		
Total	**91(21.2)**	**338(78.8)**	**429**		

* Relationship is significant at p <0.05; a= one or both parents dead

Table 4.4b.2: Socio-demographic correlates of depression in the Adolescents (Continued)

Variables	Depression Yes Frequency n (%)	No Frequency n (%)	Total	X^2	p value
Position among father's children					
1st	22(25.6)	64(74.4)	86		
2nd-3rd	35(18.1)	158(81.9)	193		
4th +	34(22.7)	116(77.3)	150	2.266	0.322
Total	**91(21.2)**	**338(78.8)**	**429**		
Position among mother's children					
1st	22(21.8)	79(78.2)	101		
2nd-3rd	40(19.3)	167(80.7)	207	1.011	0.603
4th+	29(24.0)	92(76.0)	121		
Total	**91(21.2)**	**338(78.8)**	**429**		
Father's educational level					
No formal education	32(21.5)	117(78.5)	149		
Koranic/primary	18(22.0)	64(78.0)	82		
Secondary/higher	38(20.3)	149(79.7)	187	0.116	0.944
Total	**88(21.1)**	**330(78.9)**	**418**		
Mother's educational level					
No formal education	59(22.2)	207(77.8)	266		
Koranic/primary	9(15.0)	51(85.0)	60	1.544	0.462
Secondary/higher	20(20.4)	78(79.6)	98		
Total	**88(20.8)**	**336(79.2)**	**424**		
Current caregiver					
Parents	19(11.6)	145(88.4)	164(100)		
Single parents	35(26.5)	97(73.5)	132(100)	16.345	0.001*
Grandparents	10(21.7)	36(78.3)	46(100)		
Others[b]	27(31.0)	60(69.0)	87(100)		
Total	**91(21.2)**	**338(78.8)**	**429(100)**		
Work to earn money before or after school					
Yes	30(17.5)	141(82.5)	171(100)		
No	38(18.7)	165(81.3)	203(100)	0.086	0.769
Total	**68(18.2)**	**306(81.8)**	**374(100)**		

* Relationship is significant at p <0.05; b=other relatives (uncle, aunt and siblings)

4.4c: Socio-demographic correlates of anxiety in the Adolescents

Table 4.4c.1 & 4.4c.2 present the socio-demographic correlates of anxiety. A significantly higher proportion of adolescents who were aged 16-19 years old had anxiety compared to those who were aged 13-15 years old (30.4% Vs. 20.4%, p=0.017). All participants with anxiety were Muslims (p=0.022). Approximately 33% of respondents who worked to earn money before or after school had anxiety compared to 28.1% of those who did not work. The difference is statistically significant p=0.007.

Out of the 428 participants, 39% of those with separated or divorced parents had anxiety compared to 32.5% with one or both parent dead and 19.2% with married parents. The difference was statistically significant p=<0.001. Similarly a significant difference (p=0.023) was observed among respondents with regards to their caregiver; 33.3% of those who lived with single parent had anxiety compared to 30.5% living with their grandparents, 25.3% living with other relatives and 15.9% living with both parents. This was statistically significant (p<0.005) (See Table 4.4c.1 and 4.4c.2).

Table 4.4c.1: Socio-demographic correlates of anxiety in the Adolescents

Variables	Anxiety		Total	X^2	p value
	No Frequency n (%)	Yes Frequency n (%)			
Age of adolescents					
13-15	195(79.6)	50(20.4)	245		
16-19	128(69.6)	56(30.4)	184	5.679	0.017*
Total	323(75.3)	106(24.7)	429		
Sex of adolescents					
Male	133(77.3)	39(22.7)	172		
Female	190(73.9)	67(26.1)	257	0.639	0.424
Total	323(75.3)	106(24.7)	429		
Family type					
Monogamous	170(75.9)	54(24.1)	224		
Polygamous	153(74.6)	52(25.4)	205	0.091	0.763
Total	323(75.3)	106(24.7)			
Religion					
Islam	301(74.0)	106(26.0)	407		
Christianity	22(100.0)	0(0.0)	22	7.610	0.006*
Total	323(75.3)	106(24.7)	429		
Level of education of adolescents					
Not in school	35(62.5)	21(37.5)	56		
Primary	93(77.5)	27(22.5)	120		
Junior secondary	135(77.6)	39(22.4)	174	5.751	0.124
Senior secondary	60(75.9)	19(24.1)	79		
Total	323(75.3)	106(24.7)	429		
Marital status of parents					
Married	232(80.8)	55(19.2)	287		
Separated/divorced	45(60.8)	29(39.2)	74	15.438	<0.001*
Others[a]	45(67.2)	22(32.8)	67		
Total	322(75.2)	106(24.8)	428		
Number of father's children					
1-2	18(60.0)	12(40.0)	30		
3-4	90(72.6)	34(27.4)	124	5.495	0.064
>4	215(78.2)	60(21.8)	275		
Total	323(75.3)	106(24.7)	429		
Number of mother's children					
1-2	34(66.7)	17(33.3)	51		
3-4	131(77.1)	39(22.9)	170	2.375	0.305
>4	158(76.0)	50(24.0)	208		
Total	323(75.3)	106(24.7)	429		

* Relationship is significant at p<0.05; a=one or both parents dead

Table 4.4c.2: Socio-demographic correlates of anxiety in the Adolescents (Continued)

Variables	Anxiety No Frequency n (%)	Yes Frequency n (%)	Total	X^2	p value
Position among father's children					
1st	59(68.6)	27(31.4)	86		
2nd-3rd	154(79.8)	39(20.2)	193		
4th +	110(73.3)	40(26.7)	150	4.478	0.107
Total	**323(75.3)**	**106(24.7)**	**429**		
Position among mother's children					
1st	75(74.3)	26(25.7)	101		
2nd-3rd	161(77.8)	46(22.2)	207	1.494	0.474
4th +	87(71.9)	34(28.1)	121		
Total	**323(75.3)**	**106(24.7)**	**429**		
Father's educational level					
No formal education	112(75.2)	37(24.8)	149		
Koranic/primary	66(80.5)	16(19.5)	82	1.837	0.399
Secondary/higher	136(72.7)	51(27.3)	187		
Total	**314(75.1)**	**104(24.9)**	**418**		
Mother's educational level					
No formal education	196(73.7)	70(26.3)	266		
Koranic/primary	54(90.0)	6(10.0)	60	8.589	0.014*
Secondary/higher	69(70.4)	29(29.6)	98		
Total	**319(75.2)**	**105(24.8)**	**424**		
Current caregiver					
Parents	138(84.1)	26(15.9)	164		
Single parents	88(66.7)	44(33.3)	132	13.017	0.005*
Grandparents	32(69.6)	14(30.4)	46		
Others[b]	65(74.7)	22(25.3)	87		
Total	**323(75.3)**	**106(24.7)**	**429**		
Work to earn money before or after school					
Yes	143(83.6)	28(32.9)	171(100)		
No	146(71.9)	57(28.1)	203(100)	7.240	0.007*
Total	**289(77.3)**	**85(22.7)**	**374(100)**		

* Relationship is significant at p<0.05; b=other relatives (uncle, aunt and siblings)

4.5: Association between adolescents' reported experience of the EVD epidemic, coping strategies used and the presence of anxiety disorder, depression and PTSD.

This section presents:

4.5a: Association between adolescents' reported experience of the EVD epidemic and the presence of anxiety disorder, depression and PTSD

4.5b: Association between adolescents' coping strategies and the presence of anxiety disorder, depression and PTSD.

4.5c: Predictors of probable PTSD, depression and anxiety

4.5a: Association between adolescents' reported experience of the EVD epidemic, and the presence of anxiety disorder, depression and PTSD.

4.5a.1: Adolescents infected with EVD during the Ebola epidemic

Out of the 22 participants infected with EVD, 45.5% had a probable diagnosis of PTSD compared to 22.9% with PTSD of those who were not infected. The difference is statistically significant p=0.016. On the other hand, 9.1% had depression compared to 90.9% with no depression p=0.153 and 31.8% had anxiety compared to 68.2% with no anxiety p=0.427 (See Table 4.5a.1).

Table 4.5a.1: Association between adolescents infected with EVD during the Ebola epidemic and PTSD, depression, and anxiety

Variable	Infected with EVD		Total	X^2	p value
	Yes	No			
	Frequency n (%)	Frequency n(%)			
PTSD					
No PTSD	12(54.5)	314(77.1)	326(76.0)		
Probable PTSD	10 (45.5)	93(22.9)	103(24.0)	5.845	0.016*
Total	**22(100)**	**409(100)**	**429(100)**		
Depression					
No depression	20(90.9)	318 (78.1)	338(78.8)		
Depression	2(9.1)	89(21.9)	91(21.2)	2.039	0.153
Total	**22**	**407**	**429(100)**		
Anxiety					
No Anxiety	15 (68.2)	308 (75.7)	323(100)		
Anxiety	7(31.8)	99(24.3)	106(100)	0.630	0.427
Total	**22(100)**	**407(100)**	**429(100)**		

* Relationship is significant at p <0.05

4.5a.2: Adolescent's family experience of EVD during the Ebola epidemic

Of the participants who had relative(s) who were infected with EVD, 45.5% had a probable diagnosis of PTSD compared to 20.1% of those without relative(s) infected with EVD; $p = <0.001$.

From the 59 participants with relatives infected with EVD, 33.9% had depression compared to 19% of those without infected relatives. The difference was statistically significant $p = 0.009$ (See Table 4.5a.2).

Table 4.5a.2: Relationship between adolescent's family experience of EVD during the Ebola epidemic and PTSD, depression, and anxiety

Variables	Family experience of EVD		Total	X^2	p value
	Yes	No			
	Frequency n (%)	Frequency n (%)			
PTSD					
No PTSD	31(52.5)	294(79.9)	325(76.1)		
Probable PTSD	28(47.5)	74(20.1)	102(23.9)	20.918	<0.001*
Total	**59**	**368**	**427(100)**		
Depression					
No depression	39 (66.1)	298 (81.0)	337(78.9)		
Depression	20 (33.9)	70 (19.0)	90(21.1)	6.765	0.009*
Total	**59(100)**	**368(100)**	**427(100)**		
Anxiety					
No Anxiety	44 (74.6)	277(75.3)	321(75.2)		
Anxiety	15(25.4)	91 (24.7)	106(24.8)	0.013	0.909
Total	**59(100)**	**368(100)**	**427(100)**		

* Relationship is significant at p <0.05

4.5a.3: Adolescents that lost loved ones during the Ebola epidemic

Out of the 51 participants who lost loved ones during the Ebola epidemic, 47.1% of them had probable diagnosis of PTSD compared to 20.9% of those that did not loss loved ones during the EVD epidemic; p=<0.001 (See Table 4.5a.3).

Table 4.5a.3: Relationship between adolescents that lost loved ones during the Ebola epidemic and PTSD, depression, and anxiety

Variables	Death of loved ones during the EVD outbreak		Total	X^2	p value
	Yes	**No**			
	Frequency n(%)	**Frequency n(%)**			
PTSD					
No PTSD	27(52.9)	299(79.1)	326(76.0)		
Probable PTSD	24(47.1)	79(20.9)	103(24.0)	16.855	<0.001*
Total	**51(100)**	**378(100)**	**429**		
Depression					
No depression	36(70.6)	302(79.9)	338(78.8)		
Depression	15(29.4)	76(20.1)	91(21.2)	2.329	0.127
Total	**51(100)**	**378(100)**	**429(100)**		
Anxiety					
No Anxiety	36(70.6)	287(75.9)	323(75.3)		
Anxiety	15(29.4)	91(24.1)	106(24.7)	0.688	0.407
Total	**51(100)**	**378(100)**	**429(100)**		

* Relationship is significant at p <0.05

4.5b: Association between adolescents' coping strategies used and the presence of anxiety disorder, depression and probable diagnosis of PTSD.

4.5b.1: Association between adolescents' Emotion-focused coping strategies used and the presence of anxiety disorder, depression and probable diagnosis of PTSD.

Out of the 247 participants that used Emotion-focused coping strategy to combat stressful events, 18.2% had probable diagnosis of PTSD compared to 29.6% of participants that did not use Emotion-focused method of coping; p=0.012. On the other hand, 16.2% of participants that used Emotion-focused coping strategy had depression compared to 21.6% that did not used this method of coping p= 0.200 but 23.1% of participants that used Emotion-focused method of coping had anxiety compared to 21.6% that did not used this method of coping p=0.748 (See Table 4.5b.1).

Table 4.5b.1: Association between adolescents' Emotion-focused coping strategies used and the presence of anxiety disorder, depression and probable diagnosis of PTSD.

Variables	Yes	No	Total	X^2	p value
	Frequency n (%)	Frequency n(%)			
PTSD					
No PTSD	202(81.8)	88(70.4)	290(78.0)		
Probable PTSD	45(18.2)	37(29.6)	82(22.0)	6.256	0.012*
Total	**247(100)**	**125(100)**	**372(100)**		
Depression					
No depression	207(83.8)	98(78.4)	305(82.0)		
Depression	40(16.2)	27(21.6)	67(18.0)	1.642	0.200
Total	**(100)**	**(100)**	**372(100)**		
Anxiety					
No Anxiety	190(76.9)	98(78.4)	288(77.4)		
Anxiety	57(23.1)	27(21.6)	84(22.6)	0.104	0.748
Total	**247(100)**	**125(100)**	**372(100)**		

* Relationship is significant at p <0.05

Table 4.5b.2: Association between adolescents' Problem-focused coping strategies used and the presence of anxiety disorder, depression and probable diagnosis of PTSD.

Variables	Problem-focused coping strategy		Total	X^2	p value
	Yes	No			
	Frequency n(%)	Frequency n(%)			
PTSD					
No PTSD	38(76.0)	252(78.3)	290(78.0)		
Probable PTSD	12(24.0)	70(21.7)	82(22.0)	0.129	0.720
Total	**50(100)**	**322(100)**	**372(100)**		
Depression					
No depression	42(84.0)	263(81.7)	305(82.0)		
Depression	8(16.0)	59(18.3)	67(18.0)	0.158	0.691
Total	**50(100)**	**322(100)**	**372(100)**		
Anxiety					
No Anxiety	43(86.0)	245(76.1)	288(77.4)		
Anxiety	7(14.0)	77(23.9)	84(22.6)	2.433	0.119
Total	**50(100)**	**322(100)**	**372(100)**		

4.5b.3: Association between adolescents' avoidant coping strategies used and the presence of anxiety disorder, depression and probable diagnosis of PTSD.

Of the participants who used avoidant coping strategy to deal with stressful events, 29.5% had a probable diagnosis of PTSD compared to 19.5% of those who do not use avoidant coping strategy (p=0.043) (See Table .4.5c.1)

Table 4.5b.3: Association between adolescents' avoidant coping strategies used and the presence of anxiety disorder, depression and probable diagnosis of PTSD.

Variables	Avoidant coping strategy		Total	X^2	p value
	Yes	No			
	Frequency n(%)	Frequency n(%)			
PTSD					
No PTSD	67(70.5)	223(80.5)	290(78.0)		
Probable PTSD	28(29.5)	54(19.5)	82(22.0)	4.099	0.043*
Total	**95(100)**	**277(100)**	**372(100)**		
Depression					
No depression	73(76.8)	232(83.8)	305(82.0)		
Depression	22(23.2)	45(16.2)	67(18.0)	2.289	0.130
Total	**95(100)**	**277(100)**	**372(100)**		
Anxiety					
No Anxiety	71(74.7)	217(78.3)	288(77.4)		
Anxiety	24(25.3)	60(21.7)	84(22.6)	0.525	0.469
Total	**95(100)**	**277(100)**	**372(100)**		

* Relationship is significant at p <0.05

4.5c.1: Predictors of probable diagnosis of PTSD, depression and anxiety among adolescents

4.5c.1a: Predictors of probable diagnosis of PTSD among adolescents

All socio-demographic characteristics, reported experiences of EVD and coping strategies that were statistically significant were entered into a logistic regression equation (Table 4.5c.1). Marital status of parents and adolescents not in school remained significantly associated with probable diagnosis of PTSD after adjusting for other variables. Adolescents with single parents were 4.3 times more likely to have probable diagnosis of PTSD than those with married parents (95% CI=2.085-8.830) p=<0.001; adolescents with separated or divorced parents were 3.3 times more likely to have probable diagnosis of PTSD than adolescents with married parents (95%CI= 1.617-6.767) p=0.001 and adolescents not in school (OR 0.42[95%CI 0.190-0.940] p=0.035).

Table 4.5c.1a: Predictors of probable diagnosis of PTSD among adolescents

Variables	Adjusted Odds ratio (AOR)	95% CI OR	p value
Level of education of adolescents			
Not in school	0.422	0.190-0.940	0.035*
Primary	0.644	o.306-1.357	0.247
Junior secondary	0.426	0.174-1.042	0.061
Senior secondary(Ref)	1		
Marital status of parents			
Married (Ref)	1		
Separated/divorced	3.307	1.617-6.767	0.001*
Single parent	4.291	2.085-8.830	<0.001*
Current caregiver			
Parents(Ref)	1		
Single parents	1.016	0.505-2.045	0.964
Grandparents	0.536	0.203-1.417	0.209
Others	0.906	0.418-1.964	0.802
Adolescents infected with EVD			
Yes	2.736	0.965-7.754	0.058
No (Ref)	1		
Adolescent's family experience of EVD			
Yes	1.808	0.581-5.621	0.306
No (Ref)	1		
Adolescents who lost loved ones during the EVD epidemic			
Yes	1.426	0.436-4.667	0.557
No(Ref)	1		
Emotion-focused coping			
Yes(Ref)	1		
No	1.745	0.892-3.413	0.104
Avoidant coping			
Yes	1.158	0.557-2.408	0.694
No(Ref)	1		

* Relationship is significant at p <0.05

4.5c.2: Predictors of depression among adolescents

Age and level of education of adolescents and marital status of parents remained significantly associated with depression after adjusting for other variables. Adolescents 16-19 years are 2.2 times more likely to be depressed than those 13-15 years (95% CI=1.239-4.084) and adolescents in Junior secondary school are 0.2 times more likely to be depressed than their counterparts in senior secondary school (95% CI=0.093-0.624). Adolescents with single parents were 3.9 times more likely to have depression than those with married parents (95% CI=1.911-7.785) and adolescents with separated or divorced parents were 2.5 times more likely to have depression than adolescents with married parents (95%CI=1.249-5.100) (See Table 4.5c.2).

Table 4.5c.2: Predictors of depression among adolescents

Variable	Adjusted odds ratio (AOR)	95% CI OR	p value
Age of adolescents			
13-15 (Ref)	1		
16-19	2.249	1.239-4.084	0.008*
Level of education of adolescents			
Not in school	0.632	0.267-1.494	0.296
Primary	0.696	0.327-1.481	0.346
Junior secondary	0.241	0.093-0.624	0.003*
Senior secondary(Ref)	1		
Marital status of parents			
Married(Ref)	1		
Separated/divorced	2.523	1.249-5.100	0.010*
Single parent	3.857	1.911-7.785	<0.001*
Current caregiver			
Parents(Ref)	1		
Single parents	1.171	0.559-2.450	0.675
Grandparents	0.803	0.303-2.127	0.659
Others	1.488	0.681-3.252	0.319
Adolescent's family experience of EVD			
Yes	1.701	0.865-3.344	0.124
No (Ref)	1		

* Relationship is significant at p <0.05

4.5c.3: Predictors of anxiety among adolescents

Educational level of adolescents' mothers remained significantly associated with anxiety after adjusting for other variables. Adolescents with mothers who had koranic/primary education are 0.4 times more likely to have anxiety than their peers whose mothers had no formal education (95% CI 0.142-0.904) (see table 4.5c.3).

Table 4.5c.3: Predictors of anxiety among adolescents

Variable	Adjusted odds ratio (OR)	95% CI OR	p value
Age of adolescents			
13-15(Ref)	1		
16-19	1.601	0.892-2.875	0.115
Level of education of adolescents			
Not in school	0.841	0.448-1.579	0.590
Primary	0.826	0.0.343-1.985	0.669
Junior secondary(Ref)	1		
Senior secondary			
Marital status of parents			
Married(Ref)	1		
Separated/divorced	1.940	0.991-3.798	0.053
Single parent	1.632	0.817-3.260	0.165
Mother's educational level			
No formal education(Ref)	1		
Koranic/primary	0.359	0.142-0.904	0.030*
Secondary/higher	1.077	0.603-1.926	0.801
Current caregiver			
Parents (Ref)	1		
Single parents	1.620	0.822-3.194	0.163
Grandparents	1.374	0.573-3.294	0.477
Others	1.280	0.607-2.701	0.516

* Relationship is significant at p <0.05

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

This study examined the prevalence of anxiety, depression and PTSD among adolescents living in the Wharf communities of Freetown, Sierra Leone, as well as their reported experiences of the EVD epidemics.

The discussion of findings from this study is presented as follows:

5.1a. Socio-demographic characteristics of the study participants

5.1b. Prevalence of PTSD, depression and anxiety disorder

5.1c. Reported adolescent experiences of the EVD outbreak and coping strategies

5.1d. Socio-demographic correlates of PTSD, depression, and anxiety disorders among the study population

5.1e. Reported adolescent' experiences of the EVD and their association with PTSD, depression and anxiety disorders

5.1a Socio-Demographic Characteristics of the Study Participants

Over half (57%) of the participants in this study fell into the category of middle adolescence, aged 13 - 15 years, while the rest were at the stage of late adolescence (aged 16 - 19 years). As had been stated earlier, the instrument for the assessment of depression and anxiety required a minimum age of 13 years, hence the selection of that minimum age with the upper limit of 19 years tallying with the United Nations definition of adolescence (UN, 2010).

A slightly higher proportion of the participants, were female, a reflection of the national estimate of female to male ratio of 1.2:1 in Sierra Leone (Statistic Sierra Leone, 2015). However a community study among adolescents aged 12-19 years living in Bo town in Southern Sierra Leone, obtained a male preponderance in the study population of 62.4% males to 37.6% females (Johnny, 2016). Several reasons may account for this difference but a major reason would be the period when the study was conducted. The current study was conducted at a time when calm had returned to Sierra Leone and as a result the adolescent boys would be less likely to be at home in the evening time when data collection was carried out.

The study with the male preponderance was carried out in the heart of the Ebola Virus Disease outbreak. At this time, schools and places or work and apprenticeship were closed with restriction of the movement of the entire population to prevent the spread of the virus. The researcher conducting a study at this time would have met most people at home including the adolescent boys. Furthermore the adolescent girls may not have had the opportunity to participate in that study as due to cultural expectations and gender roles in these cultures, while the boys would be left free to play and explore with friends, the girls are involved in household chores, cooking and care giving (Omigbodun and Olatawura, 2008).

An overwhelming majority (87%) of the study participants were enrolled in school. This proportion is higher than the findings of Johnny (2016) who reported a school enrolment rate of 69.9% among adolescents in the Bo community. It is also higher than the estimate reported in the national survey for Sierra Leone (48.6%) (Statistics Sierra Leone, 2015). Freetown being the capital city of Sierra Leone may have more opportunities for access to school than Bo community and even the national average. Also there is likely to be more awareness about the importance of education in the Freetown area than in other regions of the country. Coincidentally, Freetown, Sierra Leone has several firsts' education wise in the

West African region as this city has the first secondary schools for boys and girls and the first University in this sub-region. School attendance in this study is also higher than estimates from slum community studies reported among adolescents in Kenya (52.9%) (Kabiru et al., 2010).

A study conducted in a slum community in Pakistan observed that school enrolment was inversely related to the age of a child, which implied that younger adolescents were likely to be in school than older adolescent (Bangladesh report, 2013). This is understandable due to the risk of dropout of school for varying reasons. The high proportion of participants in this study aged 13 to 15 years might also explain the high proportion in school. In a report describing the progress made on education in sub-Saharan African countries as they strove to achieve education for all by 2015, it was reported that less than 30% of adolescents and young people in some of these countries are out of school (Status report, 2012). In recent times the government and international organizations have opened several schools in these slum communities to encourage school enrolment (USAID, 2017). This may also account for the high school enrolment rate recorded in this study.

Approximately 46% of study participants reported that they worked to earn money before or after school (Omigbodun et al., 2008). This is not surprising because most of the parents and caregivers were involved in petty trading therefore participants are likely to join their parents in the market or shops during the off-school hours.

Islam is the predominant (94.9%) religion reported in this study and this is consistent with the national estimates in Sierra Leone where the ratio of Muslim to Christian is 4:1(Statistics Sierra Leone, 2015). However, the capital city of Freetown had experienced a demographic change in religion participation. Christianity used to be the predominant religion of practice in Freetown (SLDHS, 2013; Statistic Sierra Leone, 2015), but during the war inhabitants

migrated from hither land (rural regions in the northern district of the country) to Freetown bringing their religion with them while many of the inhabitants of Freetown the Creoles, who were predominantly Christian left the country (SLDHS, 2013; Statistic Sierra Leone, 2015).

Two-thirds (67.1%) of the study participants' parents were married and 31% of participants were living with their grandparents or other relatives. This is consistent with reports from other studies in sub-Saharan African countries including Nigeria, which revealed that about a third of the African children live with persons other than their parents (Omigbodun et al., 2008; Bella-Awusah et al., 2016).This pattern of child rearing is called 'child fostering', and it is a practice whereby children are given to extended family members who are considered to be more financially empowered, for care and sometimes for education or apprenticeship (Omigbodun et al., 2008).

A higher proportion of participants' mothers were illiterate compared to participants' fathers. This is in keeping with the National statistics which revealed that over half of the female population is illiterate compared to just over a third of the male population (SLDHS, 2013). It also reveals the phenomenon of male preference and female discrimination with regards to education, a situation that the Sustainable Development Goals (SDGs) are billed to tackle through girl child empowerment (UN, 2017).

An overwhelmingly high proportion of both fathers and mothers were either unskilled or semi-skilled by occupation and their main occupation was trading. One possible reason for this finding is the fact that a higher proportion of inhabitants of the study site were of the Temne tribe who are predominantly traders (SLDHS, 2013).

5.1b.1 Prevalence of Post Traumatic Stress Disorder

One in every four adolescents in this study (24.0%) had a diagnosis of probable PTSD. This finding is higher than the prevalence of 4.1% reported among children and adolescents living with their parents in an internally displaced camp in Kaduna, Nigeria that were exposed to the postelection violent conflict (Sheikh et al, 2016). Among adults in Sierra Leone and Nigeria who experienced intense violence, rates of 11.3% and 46.1% respectively were reported (Betancourt and Brennan, 2016; Tagurum et al., 2015). This difference in the prevalence of PTSD may be attributed to the difference in the study instruments used in both studies (i.e. diagnostic or screening instruments). It is also noteworthy that the study community has been repeatedly exposed to various traumatic events such as recurrent flooding, landslides, high rates of violence, and epidemics including the recent EVD epidemic.

5.1b.2 Prevalence of Depression

About one in every five (21.2%) participants in this study was found to have depression. This finding is higher than the prevalence of 16.4% obtained from a community study conducted in Bo district in the Southern province of Sierra Leone (Johnny, 2015).Similarly, the findings from this study are also above the range of 0.2%-17% with depression reported among children and adolescents from recent community studies across the world (Merikangas et al., 2009) and a lifetime prevalence of 1.9% to 7.4% found among adolescents attending secondary school in Nigeria (Chinawa et al, 2015). Other studies in Sub-Saharan African countries reported a rate of 18.0 % among adolescents living with HIV in Malawi (Maria et al., 2015) and among adolescents in Southwest Nigeria, 28.1% reported depressive symptoms after exposure to traumatic events (Omigbodun et al., 2008). However, this study has a lower prevalence compared to findings (33.0%) from adolescents living in the HIV endemic community of Soweto, South Africa (Barhafumwa et al, 2016). Also in Kenya, a rate of 26.4% was reported among adolescents in public secondary school (Khasakhala et al., 2012).

The difference in the rates reported by previous studies might be due to the type of prevalence they report such as lifetime prevalence or point prevalence. Also differences in instrument (diagnostic or screening) used might also be responsible for this difference. Studies have established that adolescents in slums are constantly exposed to adverse psychosocial conditions such as poverty, poor housing condition, overpopulated environments etc which increase their likelihood of being depressed (Thapar et al., 2012). This may account for the increased rate of depression among the study respondents.

5.1b.3 Prevalence of anxiety disorder

One in every five adolescents in this study had an anxiety disorder (24.7%) and this is above the range (2% to 24%) reported in a review of community studies carried out among children and adolescents around the world (Merikangas, 2009). The range of 6.8% to 85% as having anxiety disorder was reported in a meta-analysis of studies conducted among children and adolescents living in various states in Iran (Zarafshan et al., 2015). The result obtained in this study is similar to the prevalence (26.6%) reported among adolescents in Uganda (Abbo et al, 2013). Apart from the fact that the community had been exposed to various traumatic events overtime, it is possible that the high rate of anxiety among the study populations is due to the fact that slum areas are characterised by dysfunctional homes, exposing children and adolescents to a myriad of uncertainties and poor supervision early on in life, and thus affecting the attachment process and increasing the likelihood of developing anxiety disorders later on in life (Fisher et al., 2011).

5.1c. Reported Adolescent Experiences of the EVD Outbreak and Coping Strategies

One out of every 20 adolescents in this study reported that they were infected with the EVD during the epidemic that occurred in 2015. This is much higher than the reported national prevalence rate of 0.2% in the entire Sierra Leonean population (Statistic Sierra Leone, 2015). Another important finding was the fact that one out of every 8 participants reported having a family member who was infected with the EVD. This was slightly lower than the estimated national survey which revealed that 21% of households in the western area had at least one confirmed case of EVD (WHO, 2015). It is noteworthy that slum areas are usually overcrowded, which would have made it easier for communicable disease such as EVD to spread fast. The area is also characterised by poor infrastructural facilities, which would have made it difficult for infected people to be quarantined and/or have access to needed care (Statistic Sierra Leone, 2015). Culture may have also played a major role in the spread of the EVD in the study community, as was reflected in other communities (Manguvo and Mafuvadze, 2015). Majority of the Sierra Leonean communities have a burial rite that requires the washing of dead bodies before burial and this was a practice the people continued with even during the EVD epidemic despite enlightenment jingles by the government and other health institutions (Manguvo and Mafuvadze, 2015).

One of the ways by which the government tried to curb the spread of the EVD was by placing a ban on the movement of people from one community to another and also bombarding the media with constant jingles that discouraged people from having physical contact with others (WHO, 2017). This had a great impact on the inhabitants of communities at all levels (Van Bortel et al., 2016). For instance, majority of the participants in this study mentioned that the restriction of movement and body contact was a major challenge to them and their families during the EVD outbreak. As reflected in the participants' own words, a very likely reason

for this impact is the fact that the restriction in movement affected business transactions, schooling, recreational and social activities such as football, ceremonial occasions (child naming, wedding and burial ceremonies), religious activities and clubs, thus impacting negatively on the financial power of most families, majority of whom are yet to recover, 2 years after the EVD outbreak (Van Bortel et al., 2016). It is also important to note that adolescents are at a stage of life where they are quite weary of limitations or restrictions, and want to explore the world around them, be constantly on the go, and also develop mutual or romantic relationships (Chambers et al., 2003). This may account for the high proportion of adolescents reporting the restriction of movement and physical interaction as a challenge the EVD epidemic had on them as individuals.

About one in every 5 participants was worried or terrified by the EVD epidemic while a third of families were distressed. This is not unusual given the suddenness of the EVD epidemic and the frightening rate at which it claimed lives. Although, the study community had been exposed to other life threatening events such as flooding and war, it must have been a gruesome experience to watch people become infected, experience the deadly symptoms and eventually die in quick succession. Also, the suspense of not knowing who may be infected next may have added to the awful realization that there were not enough facilities to care for the infected, thus heightening the people's fear and raising suspicion even among relatives and close friends during the EVD epidemic (Van Bortel et al., 2016; Yusuf et al., 2014)

Individuals respond differently to challenging situations. In this study, when respondents were asked how they coped with stressful events, two-thirds of them claimed they used Emotion-focused coping strategies which included praying to God or talking to someone. The Wharf community is known as a religious society, which also upholds communal living and encourages individuals share their challenges with other people who may be religious leaders, parents or elders (Columbus, 2014).

In the current study, adolescents who were out of school were significantly more likely to have a probable diagnosis of PTSD compared to in-school adolescents. It may be that adolescents in school are better able to deal with the traumatic experiences since they spent most of their days in school which is a formal and organised setting and which also provided adolescents with a platform for productive activities as they interacted with other adolescents and school personnel. School may also serve as a form of distraction to the otherwise crippling memory of a traumatic event (Omigbodun et al., 2010).

It is also important to note that adolescents who were out of school were engaged in unskilled trades such as labourers, bus conductors, and peddlers etc, thus exposing them to multiple traumatic events as they carried out their daily activities.

There was a statistically significant relationship between PTSD and the marital status of the respondents' parents, such that a higher proportion of single or double orphans had probable PTSD, followed by participants whose parents were separated or divorced. Studies have established that the disintegration of family structure leads to inconsistent care-giving, poor family discipline and management, and family conflict which predispose young people to behavioural and emotional problems (Fisher et al., 2011). It is also likely that the break in family structure was fallout of the EVD epidemic, thus a constant and readily available reminder of the unpleasant events that the adolescent experienced during the epidemic.

Socio-demographic correlates of depression

The prevalence of depression in the study population increased with age. This is consistent with other previous studies including those from this region (Adewuya et al., 2007). This is not surprising because as adolescents grow older, they experience more traumatic events that increase their risk of developing depression. Also from this study, female participants had a higher (23.3%) prevalence of depression. This is in keeping with every study in both developed (Birmaher et al, 1996; Piccinelli, 2000) and African countries (Adewuya et al., 2007).This study found high prevalence of depression among study participants with unstable family and those not living with both parents. This is in accordance with other studies in the sub-region (Gureje and Omigbodun, 1995; Bella-Awusah et al., 2016).

Socio-demographic correlates of anxiety

The prevalence of anxiety increased as age increased in this study. This is in keeping with other studies (Beesdo et al., 2009; Kessler et al., 2005). A third (32.9%) of study participants who worked to earn money before or after school was found to have anxiety. This is not surprising because during the process of performing their task, they would be faced with traumatic events that increase their risk of developing anxiety.

Participants from unstable families, those who had lost one or both parents, and participants living with single parents or other relatives had higher prevalence rates of anxiety. This is not surprising because stressful life events are a risk factor for anxiety (Omigbodun et al, 2006). Also in an unstable family, children form insecure type of attachment with caregiver; hence the risk of developing anxiety is increased.

5.1e. Reported Adolescents' Experiences of the EVD and their association with PTSD, Depression and Anxiety Disorders

A significant association was observed in this study between those participants who survived the EVD and PTSD with almost half (45.5%) with a probable diagnosis of PTSD. This finding is not surprising because exposure to such immense trauma increased their risk of developing high prevalence rates of PTSD. This is in keeping with report from a study conducted among Bam-survived students months after the earthquake (Parvaresh and Bahramnezhad, 2009).

Participants with family that were infected with EVD have very high rates of PTSD (45.5%), depression (33.9%) and anxiety (25.4%). Adolescents in the various households would have been actively involved in the care of sick relatives or siblings and that could have resulted in much fear or worry, hence increasing the risk of developing these emotional disorders.

Participants who lost loved ones were found to have high prevalence rates of PTSD (47.1%), depression (29.4%) and anxiety (29.4%). The loss of loved ones is a risk factor for developing emotional disorders (Omigbodun, 2006; Levey et al, 2017).

5.2 Conclusion

This study was conducted to determine the prevalence and correlates of anxiety disorder, depression, and post-traumatic stress disorder (PTSD) among adolescents living in the Wharf community in Freetown, Sierra Leone in the post-Ebola period.

Depression, anxiety and a probable diagnosis of PTSD were prevalent among adolescents in this community. Increasing age of the adolescents, and having parents or caregivers who are single, separated, divorced or deceased were significantly associated with depression. The involvement of adolescents in income generation, and having parents who were single, separated, divorced or deceased were significantly associated with anxiety in these adolescents. A probable diagnosis of PTSD was also found to be significantly associated with infection of the adolescents with EVD, the adolescent's family experience of EVD, the loss of loved ones, Emotion-focused coping and avoidant coping. Depression on the other hand was significantly associated with the adolescents' family experience of EVD. No significant association was found between anxiety and the adolescents' experiences of the epidemic. Female sex was seen to be associated with depression however, this relationship was not significant.

Strength and Limitations

The current study on mental health problems among adolescents in the post Ebola period is the first to be conducted in the study community to the knowledge of the author and this contributes to information to help with health planning and programmes. A limitation was that instruments used to identify adolescents with PTSD, depression and anxiety were screening tools and as such there may have been false positives and negatives

5.3 Recommendations

Based on the findings from this study, the following recommendations are made:

1. A follow up assessment of adolescents in this community using a diagnostic tool should be conducted.

2. Mental health services for adolescents should be integrated into the health care services to ensure holistic care for adolescents.

3. Robust efforts to resettle the community should be made by the government

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APPENDIX I

INFORMED CONSENT (Krio & English)

My name is Dr Sarah Conteh; I am a medical doctor from the Centre for Child and Adolescent Mental Health, University of Ibadan, Nigeria and the Ministry of Health, Sierra Leone. The main purpose of my study is to identify the mental health outcome among adolescents living in the Wharf communities at the Eastern part of Freetown, during the post Ebola period.

The process will involve gathering of information from you through a one-to-one interview, a physical examination and measure your weight and height; this will last for approximately 30-45 minutes. Your participation is voluntary and you are free to withdraw or discontinue participation from the study at any time. Also, please be aware that if you choose not to take part in the study, there will be no associated consequences. If any adolescent needing help is identified during the study, they will be referred appropriately.

All information provided will be strictly confidential and will be managed by the Centre for Child and Adolescent Mental Health. Furthermore, a copy of the report will be submitted to the Ministry of Health and Sanitation in Sierra Leone so that they can adequately plan for the health needs of adolescents in the community.

There will be very minimal risk associated with the study. Some personal questions will be asked but accurate answers are encouraged as much as possible. Please feel free to ask questions that will ensure proper clarification and provide full satisfaction.

If you have understood the explanation provided and you voluntarily agree to participate in the study, please sign or thumb print below. Thank you.

Mi nem na dɔkta Sarah Conteh; mi na dɔkta we kɔmɔt na di Sɛnta fɔ pikin ɛn Yɔŋ pɔsin dɛn wɛl bɔdi ɛn dɛn Maynd na d Yunivasiti ɔf Ibadɔn, Nayjiriya ɛn d Ministri fɔ Wɛlbɔdi biznɛs na Salon. D tin way mɛk a d do dis stɔdi na fɔ fɛnɔt bɔt ow Yɔŋ pɔsin dɛm Wɛl bɔdi ɛn Maynd fiba lɛk afta d Ebola wahala na dis Waf kɔmuniti way day istend insie Fritɔŋ.

Pa dis stɔdi ya a go gɛda infɔmatɔn frɔm u, a go luk u bɔdy en chɛk u wet ɛn hayt; dis go tak bɔt 30-45 minits. A nɔ di fos u fɔ de pan d stɔdi ɛn u kin fil fri fɔ lɛf ɛni tɛm. Sem way so, if u se u nɔ de mix pa di stɔdy, natin bad nor go apin to u ɛn u go stil gɛt d savis wɛ d ɔda wan dɛm day gɛt. If r fɛnɔt se ɛni yɔŋ pɔsin gɛt wɛlbɔdi prɔblɛm we pas di Wɛlbɔdi Sɛnta na ya go sɛn am go na di rayt ples.

Wɔd we cɔmɔt pan dis stɔdy d go to d Sɛnta fɔ Pikin ɛn Yɔŋ pɔsin Wɛl bɔdi ɛn Maynd we go tek kiya of am. Sem way so, d Ministri fɔ Wɛlbɔdi biznɛs na Salone go get a ripɔt bɔt d stɔdy ɛn den go yuz am fɔ plan gud wɛlbɔdi biznɛs fɔ dɛn Yɔŋ pɔsin na dis kɔmuniti ya.

If ɛni trɔbul go de pan di stɔdi sɛf, i go b so smɔl. Sɔm pan di kwɛshɔn dɛm, na pɔsin to pɔsin tɔk bɔt a de beg mek yu gi mi di tru ansa dɛm to aw bɛst yu ebul.Yu kin fil fri fɔ aks mi fɔ kliya ɛni tin wit yu fɔ mek yu ɔndastand gud gud wan ɛn mek yu at go gladi.

If yu dɔn ɔndastand ɔl wɛtin r dɔn tɛl yu bɔt di stɔdi ɛn yu gri fɔ jɔyn, duya sayn ɔ tɔmbprint dɔŋ ya. Tɛnki ya.

\---

Signature/Thumb print & date

(Parent/guardian/child)

\---

Signature of Investigator & date

APPENDIX II

Serial Number: __ __ __ __   Today's Date: __ __/__ __/__ __

ADAPTED SOCIO-DEMOGRAPHIC QUESTIONNAIRE (ENGLISH & KRIO)

Please write the answers to the questions, or draw a circle where it applies to you. This is not an examination it is only to find out about you and your health.

Duya rayt di ansa dɛm to dɛm kwɛshɔn ya, ɔ sakul usay yu fɔ sakul. Dis nɔto ɛgzam na fɔ fɛnɔt bɔt yu ɛn yu wɛl bɔdi wan.

SECTION I

Personal Information

1. Where do you live? (Address of Present Abode):

1. Usay yu tap? (di adrɛs we yu de naw):

2. What is your date of birth? Date of Birth: _____ _____ _____

                                         Day   Month   Year

2. Us tɛm yu bɔn?   Tɛm we yu bɔn: -------- -------- ---------------

                                         De   Mɔnt   Ia

3. How old are you? (3. ɔmɔs ia yu ol?)

4. Are you a boy or a girl?   (a) Boy   (b) Girl

4. Yu na bɔy ɔ titi?   (a) Bɔy   (b) Gyal

5. Do you practise any religion? No   Yes

5. Yu biliv pan Gɔd ɔ ɛni ɔda tin?   No   Yɛs

6. Please write down the exact place you attend for worship

6. Duya rayt dɔŋ di ples gbɛt we yu di wɔship.

_____

(a) Islam   (b) Orthodox Christian   (c) Pentecostal Christian   (d) Traditional religion   (e) Other

Family Information

7. Family Type:(7. Na us kayn famili u cɔmɔ)

 (a) Monogamous   (b) Polygamous

(a) Na wan wɛf yu papa gɛt   (b) Yu papa gɛt pas wan wɛf

8. Number of Mother's Children:

8. ɔmɔs pikin yu mama gɛt:

9. Number of Father's Children:

9. ɔmɔs pikin yu papa gɛt:

10. What is your position among your father's children?

10. Yu na di nɔba ɔmɔs pikin to yu papa?

11. What is your position among your mother's children?

11. Yu na di nɔba ɔmɔs pikin to yu mama?

12. Marital Status of Parents:

12. Aw yu mama ɛn papa sidɔm na os:

(a) Married   (b) Separated/Divorced   (c) Father is dead

(a) Dɛn mared   (b) Dɛn dɔn skata   (c) Yu papa dɔn day

 (d) Mother is dead   (e) Mother & Father are dead

(d) Yu mama dɔn day   (e) Yu mama ɛn papa dɔn day

13. Who do you live with presently?

13. Udat yu tap to naw?

 (a) Parents   (b) Mother   (c) Father   (d) Grandparents   (e) Grandmother

(a) Mama ɛn papa (b) Mama   (c) Papa   (d) Grama ɛn Grampa   (e) Grama

 (f) Grandfather   (g) Other [please specify] _____

(f) Grampa   (g) ɔda pɔsin {Tɔk udat}---------------------------

14. Do you do any kind of work to earn money before or after school? Yes   No

14. Yu de do ɛni kayn wok fɔ gɛt mɔni bifo yu go skul ɔ we yu kɔmɔt skul? Yɛs   Nɔ

15. If yes, please specify what you do _____

15. If na yɛs, tɔk watin yu de do   --

16. Level of Father's Education

16. Aw fa yu papa lan buk

 (a) No Formal Education   (b) Koranic School   (c) Primary School

(a) I nɔ lan buk   (b) I lan Koran   (c)   I go praymari Skul

(d) Secondary School   (e) Post Secondary (Non-University)

(d) Sɛkɔndari skul   (e) I lan mɔ afta Sɛkɔndari skul

 (f) University Degree and above (e) I do not know

(f) I gɛt digri   (e) A nɔ no

17. Occupation of Father: _____ /I do not know

17. Us wok yu papa de du: ---------------------------------/ A nɔ no

18. Level of Mother's Education

(a) No Formal Education   (b) Koranic School   (c) Primary School

(a) I nɔ lan buk   (b) I lan Koran   (c)   I go praymari Skul

(d) Secondary School   (e) Post Secondary (Non-University)

(d) Sɛkɔndari skul   (e) I lan mɔ afta Sɛkɔndari skul

 (f) University Degree and above (e) I do not know

(f) I gɛt digri   (e) A nɔ no

19. Occupation of Mother: _____/   I do not know

19. Us wok yu mama de du: ----------------------------------/ A nɔ no

School-Related Questions

20. Name of School:

20. Wetin yu skul nem:

21. Class:

21. Klas

22. Do you like your school? Yes   No

22. Yu lɛk yu skul?   Yɛs   Nɔ

23. How many children are there in your class?___

23. ɔmɔs pikin de na yu klas

24. Do you do well academically? Yes   No

24. Yu de do wɛl na skul?   Yɛs   Nɔ

25a. If Yes, explain   (25a. If na yεs, wetin mek yu tink se yu de du wεl) ----------------------
----

25b. If No, explain   (25b. If na nɔ, wetin mek yu nɔ de du wεl) ----------------------------------
----

SECTION 2

Level of experience of the Ebola virus disease outbreak

26. During the Ebola outbreak here, did you become sick with Ebola?Yes   No

26. Wεn di Ibola sik bin kam, yu bin gεt di sik?   Yεs   Nɔ

27. Where did you receive care?(27. Usay dεn trit yu?)

    (a) An Ebola treatment center   (a) Na Ibola tritmεnt senta

    (b) Regular Hospital   (b)   Nɔmal ospitul

    (c) A traditional healer (c) Mεrεsin man

    (d) others   (d) ɔda pɔsin dεm

28.Did anyone living at your home (i.e. parents, aunts, uncles, grand-parents) become sick with Ebola?Yes   No

28. εni bɔdi we bin tap na yu os lεk mama; papa; anti; ɔnkul; grama εn grampa, gεt di ibola sik?   Yεs   Nɔ

29. How many people living at your home became sick with Ebola? -------------

29. ɔmɔs pipul we bin tap na yu os gεt di ibola sik?   ------------------------

30. Did anyone living at your home die from Ebola? Yes   No

30. Di ibola sik bin kil εni bɔdi na yu os? Yεs   Nɔ

30a. If Yes, please specify --

30a. If dat bi, tɔk udat dɛm---

31. How has the Ebola Virus Disease outbreak affected you? Please explain

31. Aw di Ibola sik chenj ɛni tin na yu layf? Duya tɔk am

_____

_____

32. How has the Ebola Virus Disease outbreak affected your family? Please explain

32. Aw di Ibola sichenj aw una layf bin tan na una famili? Duya tɔk am

_____

_____

33. How has the Ebola Virus Disease outbreak affected your community? Please explain

33.Aw di Ibola sik chenj una layf, una we bin tap na di eria? Duya tɔk am

_____

_____

SECTION 3

Help-Seeking Behaviour

34. When you are stressed or feeling unhappy, what do you do to make you feel better?

34. Wɛn yu fil se ɔl tin de mɔna yu ɔ yu nɔ gladi, wetin yu kin du fɔ mɛk yu fil bɛtɛ?

_____

_____

35. When you have a problem and need some help or advice, who do you usually go to?
Write the number against the person selected, in order of preference for the 1st three.

35. Wɛn yu gɛt prɔblɛm ɛn yu want mɛk pɔsin ɛp yu ɔ tɛl yu wɛtin fɔ du, udat yu kin go to?

Rayt nɔmba 1,2 ɛn 3 nia di pɔsin dɛm we yu pik,lɛk udat yu go go to fɔs , sɛkɔnd , tɔd.

Best friend (Yu bɛst padi) -----   Mother(Yu mama) -----   Father (Yu papa) -----

Siblings (Yu brɔda ɛn sista dɛm) -----   Other Family Members like (ɔda pɔsin na di famili)---

Pastor (Yu Pastɔ) ------   Imam (Yu Imam) -------   Teacher (Yu ticha) ------

Doctor (Yu dɔkta) ------

SECTION 4

Coping strategies

36.When you are stress/ afraid/ in danger, what do you do? Please explain

36. If yu gɛt prɔblɛm dɛm we de mɔna yu; ɔ yu de fred ɛnitin/ɛnibɔdi; ɔ if yu tink se sɔntin bad go apin to yu, wɛtin yu kin du

---

SECTION 5

BMI Assessment of adolescent

(a) Weight (Kg) -----------------
(b) Height (cm) ------------------
(c) Physical Examination (circle that which applies)

	YES	NO
1. Good physical activity	√	√
2. Good oral hygiene	√	√
3. Good body hygiene	√	√
4. Any sign of disability	√	√
5. Any sign of self-inflicted injury (I.e. Wrist scar)	√	√

Serial Number: __ __ __ __   Today's Date: __ __/__ __/__ __

ADAPTED PTSD CHECKLIST-CHILD VERSION (CPC-C)

TO COUNT AN EVENT, YOU MUST HAVE FELT ONE OF THESE:

FƆ MEK U SE SƆOMTIN APIN, U FƆ DƆN FIL WAN PAN DƐN TIN YA:

YOU FELT LIKE YOU MIGHT DIE, OR
U FIL LƐK SE SƆMTƐM U GO DAY, Ɔ
YOU HAD A SERIOUS INJURY OR FELT LIKE YOU MIGHT GET A SERIOUS
INJURY, OR
U GƐT SOBA WUND DƐM Ɔ U FIL LƐK SE U GO GƐT SOBA WUND DƐM, Ɔ
YOU SAW (1) OR (2) HAPPEN TO ANOTHER PERSON, OR YOU SAW SOMEONE
DIE.
U SI (1) Ɔ (2) APIN TO ƆDA PƆSIN, Ɔ U SI WE SƆM PƆSIN DAY

	Did not happen to you. I nɔ apin to u	Did happen to you. I apin to u	Age when this happen to you the first time. ɔmos iya u ol we i apin to u fɔ d fɔs tɛm.	Age when this happen to you the last time. ɔmos iya u ol we i apin to u d las tɛm.	How many times this happened to you. ɔmos tɛm dis dɔn apin to u?
1.Accident or crash with automobile, plane or boat. Axidɛnt ɔ motoka ɔ plen krash.	0	1			
2.Attacked by an animal. Animal atak u	0	1			
3.Man-made disasters(fires,war,etc). Mɔtalman nambara lɛk faya ɛn wa.	0	1			
4.Natural disasters (flood, landslide). Tin lɛk ebi ren ɛn kɔt dɔti.	0	1			
5.Hospitalization or invasive medical procedure. U sik de ɔspitul ɔ dɛn yuz tin we d go insay u bɔdi.	0	1			
6.Physical abuse. Dɛn bata u.	0	1			
7.Sexual abuse, sexual assault, or rape. Dɛn do mami ɛn dadi bznɛs to u bay kɔmpra	0	1			

8.Accidental burning. Bay mistek u bɔdi bɔn.	0	1			
9.Near drowning. U lɛf smɔl u lɛf na wata.	0	1			
10.Witnessed<u>another person</u> being beaten, raped, threatened with serious harm, shot at seriously wounded, or killed. U si dɛn d bit, du mami ɛn dadi bznes bay kɔmpra, trɛtin fɔ do bad, shut, wund bad bad wan ɔ kil ɔda pɔsin.	0	1			
11.Kidnapped. Dɛn ayd wit u.	0	1			
12.Other. ɔda tin dɛm.	0	1			

13.If more than one event happened to you: Write the number of the event that you think caused the most distress to you If i pas wan pan dɛn tin ya we apin to u, rayt d nɔmba fɔ d wan we mɔna u pas ɔl.	

Below is a list of symptoms that children can have after life-threatening events.

Dɔŋ di peg na tin dɛm we pikin dɛm kin fil we i lɛf smɔl dɛn day.

When you think of ALL the life-threatening traumatic events from the first page, circle the number below (0-4) that best describes how often the symptom has bothered you in the LAST 2 WEEKS.

We u mɛmba ɔl d tin dɛm we kin mek pɔsin ɔlmos lɔs in layf frɔm d fɔs pej, sakul d nɔmba dɔŋ (0-4) we d tɛl aw da tin de dɔn mɔna u insay d LAS 2 WIK.

0	1	2	3	4
Not at all	Once a week or less/ Once in a while	2 to 4 times a week/ half the time	5 or more times a week/almost always	Everyday
I nɔ mɔna mi at ɔl	wan tɛm fɔ wik ɔ lɛs/ wan wan tɛm	2 to 4 tɛm fɔ wik/ af ɔf d tɛm	5 ɔ mɔ tɛm fɔ di wik/ ɔl di tɛm	Ɛvride

14. Do you have unwanted memories of the trauma that intrude

into your mind?

(Tin dɛm we u nɔ wan mɛmba bɔt wetin dɔn apin di lɛf na u maynd)   0   1   2   3   4

15. Are you having more nightmares since the trauma(s) occurred?

   (U di gɛt mɔ naytmiya frɔm we di bad tin (s) apin to u?)   0   1   2   3   4

16. Do you act like the traumatic event is happening to you again,   0   1   2   3   4

even when it isn't? This is where you act like you are back in the

traumatic event and aren't in touch with reality.

This is a pretty obvious thing when it happens.

(I kin bi to u lɛk se d bad tin d apin bak ivin we i nɔd apin? U kin do

lɛk se u d go bak to d tɛm we d bad tin bin bi ɛn u nɔd de bay usɛf. I kin

bi tru tru to u)

17. Since the trauma(s) have you had episodes when you seem to freeze?   0   1   2   3   4

Someone else may have tried to snap you out of it but you were unresponsive.

(Frɔm we dis (dɛn) wahala bi tɛm kin deɔ we u kin jes lɔs. Pɔsin kin tray

fɔ briŋ u bak but nɔor d ebul.)

18. Do you get upset when exposed to reminders of the event(s)?   0   1   2   3   4

(U kin fil bad we dɛn mɛmba u bɔt dɛn tin de?)

19. Do you get physically distressed when exposed to reminders?   0   1   2   3   4

Like heart racing, shaking hands, sweaty, short of breath,

Or sick to your stomach?

 (Tin kin apin to u bɔdi we dɛn mɛmba u bɔt dɛn bad tin we dɔn pas?

  Lɛk u at d bit fas fas, u an dɛm d shek, d swɛt bɔku, u layf d kɔt pan u ɔu sik insay?)

20. Do you show persistent negative emotions (fear, guilt, sadness,   0   1   2   3   4

Shame, confusion) that are <u>not</u> triggered by exposure to reminders of the events

[Dɛn bad filin ya kin te pan u (fred fred, d fil gilt, sɔri sɔri, d shem pan u sɛf,

u d kɔnfuz) dɛn tin ya kin apin ivin we u nɔd mɛmba wetin dɔn apin)

21. Do you try to avoid conversations that might remind you   0   1   2   3   4

of the trauma(s)? For example, if other people talk about what

happened, do you walk away or change the topic?

(U kin tray fɔ avɔyd kip kɔmpin we d mek u mɛmba wetin dɔn pas?Ɛgzampul,

if u yɛri ɔda ppl d tɔk bɔt wetin dɔn apin u kin lɛf d ples ɔ chenj d tɔpik)

22. Do you try to avoid things or places that remind   0   1   2   3   4

you of the trauma(s)?

(U kin tray fɔavɔyd d ples dɛm ɔtin dɛm we d mek u mɛmba wetin dɔn pas?)

23. Do you have difficulty remembering the whole incidence?   0   1   2   3   4

(U kin gɛt trɔbul fɔ mɛmba aw d wan ol tin bi?)

24. Do you have exaggerated negative beliefs about yourself, others,   0   1   2   3   4

or the world?

(U kin gɛt pasmak bad tinkin bɔt usɛf, ɔda ppl dɛm ɔ d wɔl?)

25. Do you have distorted thoughts about the cause or   0   1   2   3   4

consequences of the traumatic event(s)?

(U kin kɔnfuz pan u tinkin bɔt wetin bin apin ɔwetin kin bi bikɔz ɔf dat?)

26. Have you lost interest in doing things that you used   0   1   2   3   4

to like to do since the trauma(s)?

  (U nɔd gladi fɔdo d tin dɛm we u lɛk frɔm we dis wahala ya bi?)

27. Since the trauma(s) have you become more distant   0   1   2   3   4

and detached family members, relatives, or friends?

(Frɔm we dis wahala ya bi u fenɔt se u nɔd ebul nia u fambul dɛm ɔpadi dɛm?)

28. Since the trauma(s), do you show a restricted range of   0   1   2   3   4

positive emotions on your face compared to before?

(Frɔm we dis wahala ya bi u fɛnɔt se u gud tinkin nɔdi bi lɛk bifo?)

29. Have you become more irritable, or had outbursts of anger since   0   1   2   3   4

the trauma(s)?

(U dɔn fɛnɔt se u d vɛx quik quik wan naw frɔm we dis wahala ya bi?)

30. Have you engaged in reckless and self-destructive behaviour since   0   1   2   3   4

the trauma(s)

(U dɔn jɔyn pan ɛni rɛklɛs bznɛs ɛn ɛnitin we kin briŋ u dɔŋ frɔm

we dis wahala ya bi?)

31. Have you been more 'on the alert' for bad things to happen?   0   1   2   3   4

For example, do you look around for danger?

(U fɛnɔt se u antina dɔn de ɔp for bad tin dɛm? Fɔɛgzampul, naw u

dɔn kɔnshɔs bɔt bad tin?)

32. Do you startle more easily than before the trauma(s)?   0   1   2   3   4

For example, If there's a loud noise or someone sneaks up behind you,

do you jumpor seem startled?

(U kin skayd naw pas fɔs tɛm frɔm we dis wahala ya bi? Fɔɛgzampul

if u yɛri lawd nɔyz ɔpɔsin kam saful saful wan bihɛn u, u kin skayd?)

33. Have you had more trouble concentrating since the trauma(s)?   0   1   2   3   4

(U fɛnɔt se u nɔd ebul pe atɛnshɔn gud wan frɔm we dis wahala ya bi?)

34. Have you had a hard time falling asleep or staying asleep   0   1   2   3   4

since the trauma(s)

(U fɛnɔt se u nɔ d ebul fɔ slip quik ɔu d te pan slip frɔm we dis wahala ya bi?)

FUNCTIONAL IMPAIRMENT

TIN WE D AMBOG U NƆMAL FƆNKSHƆN

Do the symptoms that you endorsed above get in the way of your ability to function in the following areas?

D tin dɛm we u tɔk bɔt ɔp dis pej kin ambog d we we u kin bihev pan dɛn say ya?

0	1	2	3
Hardly ever/ None	Some of the time	About half the days	More than half the days
I kin adli bi/ I nɔ wan de bi	I kin apin sɔm tɛm de	I kin apin afɔf d tɛm	I kin apin mos tɛm

    4

Everyday

I kin apin ɛvride

35. Do (symptoms) substantially 'get in the way' of how   0   1   2   3   4

you get along with your parents, interfere in your relationship,

or make them feel upset or annoyed?

(D we we u kin fil kin ambɔg d we we u d rilet wit u ppl dɛm ɔu

rileshɔnship ɔ mek u d vɛx?)

36. Do these (symptoms) 'get in the way' of how you get   0   1   2   3   4

along with your brothers or sisters, and make them feel upset or annoyed?

(D we we u d fil kin ambɔg d we we u d kɛri ɔn wit u brɔda ɔ sista dɛm ɔmek u d vɛx?)

37. Do these (symptoms) 'get in the way' with the teacher or your   0   1   2   3   4

classroom behaviour more than average?

   (D we we u d fil d ambɔg d we we u d kɛri ɔn wit u ticha ɔ aw

u d kɛri ɔn na klas?)

38. Do (symptoms) 'get in the way' of how you get along   0   1   2   3   4

with friendsat school, or in your neighbourhood?

   (D we we u d fil kin ambɔg d we we u d kɛri ɔn wit u padi dɛm

na skul ɔdi kɔmuniti?)

39. Do (symptoms) make it harder for you to go out in   0   1   2   3   4

public than it would be for an 'average child'?

  (D we we u d fil kin mek am tranga fɔ u fɔ go na pɔblik ples dɛm?)

40. Do you think that these behaviours cause you to feel upset?   0   1   2   3   4

(U fil se d we we u d bihev kin mek u d fil bad?)

APPENDIX IV

Serial Number: __ __ __ __   Today's Date: __ __/__ __/__ __

ADAPTED BECK'S DEPRESSION INVENTORY (ENGLISH & KRIO)

1.

0	1	2	3

I do not feel sad   I feel sad   I am sad all the time and   I am so sad and unhappy that I

I can't snap out of it   can't stand it

A nɔ d fil sɔri   A d fil sɔri   A d fil sɔri ɔltɛm ɛn   A d fil sɔri te a nɔ ebul bia

nɔ d ebul fil gud   am egen

2.

0	1	2	3

I am not particularly   I feel discouraged   I feel I have   I feel the future is hopeless

discouraged about the   about the future   nothing to look   and that things cannot

future forward to   improve

A nɔ d fil bad   A d fil bad   A d fil se   A d fil se bɛtɛ nɔ de fɔ

bɔt tumara   bɔt tumara   a nɔgɛt abop   tumara ɛn tin nɔ gɛt fɔ bɛtɛ

3.

0	1	2	3

I do not feel like a   I feel I have failed   As I look back on my   I feel as I am a

failuremore than the   life, all I can see is a   complete failure

average person   lot of failures   as a person

A nɔ d fil lɛk   A fil lɛk se a dɔn fel pas   We a luk bak ɔl a   A d fil lɛk se a dɔn

a dɔn fel   aw d nɔmal pɔsin bi   d si na felyɔ   fel kpata kpata

4.

0	1	2	3

I get as much   I don't enjoy things   I don't get real   I am dissatisfied or

Satisfaction out of   the way I used to   satisfaction out of   bored with everything

Things as I used to   anything anymore

A d fil satisfay wit	A nɔd enjoy tin	A nɔd satisfay wit	A nɔ satisfay at ɔl
d tin dɛm we a d du	dɛm lɛk bifo	ɛnitin egen	ɛn ɔltin dɔn gens mi

5.

0	1	2	3
I don't feel	I feel guilty a good part	I feel quite guilty	I feel guilty all of
Particularly guilty	of the time	most of the time	the time
A nɔ d fil gilt	A d fil gilt bɔku tɛm	A d fil gilt mos tɛm	A d fil gilt ɔl d tɛm

6.

0	1	2	3
I don't feel I am	I feel I may be	I expect to be	I feel I am being punished
being punished	punished	punished	
A nɔ d fil lɛk dɛn	A fil lɛk dɛn go	A d xpɛkt dɛm fɔ	A fil lɛk se dɛn d pɔnish mi
d pɔnish mi	pɔnish mi	pɔnish mi	

7.

0	1	2	3
I don't feel	I am disappointed	I am disgusted	I hate myself
disappointed in	in myself	with myself	
myself			
A nɔd fil lɛk a	A d fil lɛk a dɔn	A gens wit misɛf	A dɔn et misɛf
dɔn lɛt misɛf dɔŋ	lɛt misɛf dɔŋ		

8.

0	1	2	3
I don't feel I am	I am critical of	I blame myself all	I blame myself for
any worse than	myself for my	the time for my	for everything bad

anybody else	weakness or mistakes	faults	that happens
A nɔ d fil lɛk se	A d kɔndɛm misɛf	A d blem misɛf ɔltɛm	A d blem misɛf fɔ
a bad pas ɛni	fɔmi mistek dɛm	fɔ mi mistek dɛm	ɔl d bad tin we d apin
ɔda pɔsin			

9.

0	1	2	3
I don't have any thoughts of killing myself	I have thoughts of killing myself, but I would not carry them out	I would like to kill myself	I would kill myself if I had the chance
A nɔwan de tink fɔ kil misɛf	A kin tink fɔ kil misɛf bɔt nɔ go du am	A bin fɔ lɛk fɔkil misɛf	A bin fɔ kil misɛf if a gɛt d chans

10.

0	1	2	3
I don't cry any more than usual though I want to	I cry more now than I used to	I cry all the time now	I used to be able to cry, but now I can't cry even
A nɔd kray pas fɔs tɛm	A d kray pas fɔs tɛm	A d kray ɔl d tɛm	A bin d kray fɔstɛm bɔt naw wata nɔd kɔmɔt ivin we a wan kray

11.

0	1	2	3
I am no more irritated by things than I ever was	I am slightly more irritated now than usual	I am quite annoyed or irritated a good deal of the time	I feel irritated all the time
A nɔd vɛx bɔt tins pas fɔs tɛm	A d vɛx quik pas fɔs tɛm	A d vɛx mos of d tɛm	A d vɛx ɔl d tɛm

12.

0	1	2	3
I have not lost Interest in other People	I am less interested in other people than I used to be	I have lost most of my interest in other people	I have lost all of my interest in other people
A nɔ lɔs intrɛs pan ɔda ppl	A d lɔs intrɛs pan ɔda ppl pas fɔs tɛm	A dɔn lɔs mos ɔf mi intrɛs pan	A dɔn lɔs ɔl intrɛs pan ɔda ppl ɔda ppl

13.

0	1	2	3
I make decisions about As well as I ever could I used to	I put off making decisions more than more than I used to	I have greater difficulty in making decisions anymore	I can't make decisions at all
A d mek disishɔn lɛk fɔs tɛm	A d balans fɔ mek disishɔn pas fɔs tɛm	A d gɛt trɔbul fɔ mek disishɔn pas fɔs tɛm	A nɔ d ebul fɔ mek disishɔn egen

14.

0	1	2	3
I don't feel that I look any worse than I used tounattractive	I am worried that I am looking old or that make me look unattractive	I feel there are permanent changes in my appearance	I believe that I look ugly
A nɔ fil se a d luk bad pas fɔs tɛm	A d wɔri se a d luk ol ɔnɔd luk fayn	A d fil se a dɔn cheŋ fɔ gud ɛn nɔ d luk fayn	A no se a nɔ d luk fayn

15.

0	1	2	3
I can work about as Well as before	It takes an extra effort to get started at doing something	I have to push myself very hard to do anything	I can't do any work at all

A d du mi wok   I d tek mɔ wok fɔ lɛ a   A gɛt fɔ tawa fɔ do   A nɔ ebul du

dɛm lɛk fɔs tɛm   a bigin du sɔmtin   ɛni wok   ɛni wok egen

16.

0	1	2	3

I can sleep as   I don't sleep as well   I wake up 1-2 hours earlier than   I wake up several

well as usual   as I used to   usual and find it hard to get back   hours earlier than

to sleep   I used to and cannot

get back to sleep

A d slip wɛl wɛl   A nɔ d slip   A d wek lɛk 1-2 awa bifo tɛm   A d wek lɔŋ bifo tem

lɛk fɔs tɛm   ɛn i kin at fɔ lɛ a slip bak   ɛn nɔ d ebul slip bak

17.

0	1	2	3

I don't get more   I get tired more easily   I get tired from doing   I am too tired to do

Tired than usual   than I used to   almost anything   anything

A nɔ d taya pas   A d taya quik pas   A d taya frɔm ɛni   A d taya tu mɔs

fɔs tɛm   fɔs tɛm   tin a do   fɔ du ɛni tin

18.

0	1	2	3

My appetite is no   My appetite is not as   My appetite is much   I have no appetite at

Worse than usual   good as it used to be   worse now   all anymore

Mi apitayt na d sem   Mi apitayt dɔn go smɔl   Mi apitayt dɔn go bad   A nɔ gɛt apitayt egen

19.

0	1	2	3

I haven't lost much   I have lost more than   I have lost more than   I have lost more than

Weight, if any, lately   five kilos   ten kilos   fifteen kilos

A nɔ lɔs wet   A dɔn lɔs pas fayv kilo   A dɔn lɔs pas tɛn kilo A dɔn lɔs pas fiftin kilo

20.

0	1	2
I am no more worried about my health than usual	I am worried about physical problems like aches, pains, upset stomach, or constipation	I am very worried about physical problems and it's hard to think of much else
A nɔd wɔri bɔt mi wɛl bɔdi wan pas fɔs tɛmɛn	A d wɔri bɔt mi wɛl bɔdi wan i d at fɔ mek a mɛmba ɔda tin	A d wɔri bɔt mi wɛl bɔdi wan

3

I am so worried about my physical problems that I cannot think of anything else

A d wɔri bɔt mi wɛl bɔdi wan nɔ d tink bɔt ɛni ɔda tin

21.

0	1	2
I have not noticed any recent change in my interest in the opposite sex	I am less interested in the opposite sex than I used to be	I have almost no interest in the opposite sex
Mi intrɛs pan patna bznɛs na d sem	A dɔn lɔs intrɛs pan patna bznɛs	A dɔn lɔs lɛk ɔl mi intrɛs pan patna bznɛs

3

I have lost interest in the opposite sex completely

A nɔ want patna bznɛs at ɔl

Serial Number: __ __ __ __   Today's Date: __

ADAPTED BECK'S ANXIETY INVENTORY (ENGLISH & KRIO)

	Not AT ALL At ɔl	Mildly but it didn't bother me much I nɔ mɔna mi bɛtɛ	Moderately- it wasn't pleasant at time I mɔna mi smɔl	Severely- it bothered me a lot I mɔna mi bad
1.Numbness or tingling A d fil lɛk mi bɔdi dɔm ɔ d shek shek	0	1	2	3
2.Feeling hot A d fil ɔt	0	1	2	3
3.Weakness in legs Mi fut dɛm wik ɔnda mi	0	1	2	3
4.Unable to relax A nɔ ebul tek am isi	0	1	2	3
5.Fear of worst happening A d fred se nambara d kam fɔdɔm	0	1	2	3
6.Dizzy or lightheaded D fil mi ed layt	0	1	2	3
7.Heart beating fast Mi at d kɔt	0	1	2	3
8.Unsteady Mi bɔdi nɔ stɛdi	0	1	2	3
9.Terrified or afraid D fred bad	0	1	2	3
10.Worried or tense A d tɛnshɔn	0	1	2	3
11.Feeling of choking A d fil lɛk a d chok	0	1	2	3
12.Hands trembling Mi an d shek	0	1	2	3
13.Shaky/unsteady Mi bɔdi d shek	0	1	2	3
14.Fear of losing control D fred se a d lɔs am	0	1	2	3
15.Difficulty in breathing Mi layf d kɔt pan mi	0	1	2	3
16.Fear of dying A d fred se a d day	0	1	2	3
17. Fearful or Frightened A d fred fred	0	1	2	3
18. Discomfort in the stomach /Indigestion Mi bɛlɛ nɔ di mek fayn	0	1	2	3
19.Faint/lightheaded A d fil fent	0	1	2	3
20.Feeling hot in the face Mi fes d wam pan mi	0	1	2	3
21. Sweats not due to heat D swɛt we ples nɔ wam	0	1	2	3
Column Sum				