PREVALENCE AND CORRELATES OF POST-TRAUMATIC STRESS SYMPTOMS AMONG SECONDARY SCHOOL STUDENTS IN ZARIA, NORTHWEST NIGERIA

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Abbreviations/ Glossary/Definitions

Definitions

- **ABUTH** Ahmadu Bello University Teaching Hospital
- **CI** Confidence Interval
- **DSM-I** Diagnostic and Statistical Manual of Mental Disorders, First Edition
- **DSM-II** Diagnostic and Statistical Manual of Mental Disorders, Second Edition
- **DSM-III** Diagnostic and Statistical Manual of Mental Disorders, Third Edition
- **DSM-IV** Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
- **DSM-V** Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
- **ICD-10** Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems
- **IQ** Intelligence Quotient
- **JSS** Junior Secondary School
- **K-SADS-PL** Kiddie Schedule for Affective Disorders and Schizophrenia for school-age -Present and Lifetime
- **PTSD** Post-Traumatic Stress Disorder
- **PTSS** Post-Traumatic Stress Symptoms
- **SPSS-21** Statistical Package for the Social Sciences version 21
- **SSS** Senior Secondary school

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EXECUTIVE SUMMARY

Adolescents exposed to traumatic events are at risk of mental health problems such as Posttraumatic Stress Disorder (PTSD), Posttraumatic Stress Symptoms (PTSS), Major Depression and Anxiety disorders which tend to have marked consequences on their emotional, behavioural and social development.

Posttraumatic stress symptoms (PTSS), are usually as disabling as having full PTSD and may run a chronic course into adulthood. The prevalence of exposure to traumatic events in Southwest, Nigeria was shown to be between 34 and 40%. No data existed on the prevalence of PTSS or PTSD among adolescents in the Northern parts of the country. Obtaining information on traumatic exposure and their consequences is particularly important in view of the current terrorist activities predominantly occurring in the Northern parts of Nigeria.

This study determined the prevalence of exposure to traumatic events and established the prevalence, pattern and correlates of PTSS and depression among secondary school students in Zaria, Northwest Nigeria.

This was a descriptive cross-sectional study using a convenient sample of 6 secondary schools. The random sampling technique was carried out to select 536 participants from 4 public and 2 private schools located in Sabon Gari local government area (LGA) in Zaria. Several sections of -the Kiddie Schedule for Affective Disorders and Schizophrenia for school-age children-Present and lifetime (KSADS-PL) were used for assessment in this study. The Trauma Checklist was used to determine those that had been exposed to a traumatic event while the PTSD screen was

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used to assess students who had been exposed to a traumatic event. All students were assessed with the Depression Module. Five hundred and thirty-six (536) students with an age range of 10-29 years and a mean age of 15.8 (SD: ±3.0) years were studied. There were slightly more males (51.9%) than females (48.8%). Almost half (47.9%) reported being exposed to a traumatic event, with, the most frequent event being 'confronted with a traumatic news' (18.5%). Traumatic events were commoner in females (60.1%) than males (36.7%). A prevalence of 12.7% was found for PTSS while, 2.0% met the diagnosis of PTSD. More females (17.4%) than males (8.8%) had PTSS symptoms. A prevalence of 5.8% was reported for depression among the students with females (6.6%) having a higher prevalence rate than males (4.0%). A higher proportion of students who had PTSS, also had depression (32.1%) compared to those that did not have PTSS (5.3%), ($p<0.001$).

In view of the on-going civil unrest in Northern Nigeria adolescents and young people are at a higher risk of traumatic exposure. Policymakers need to be aware of the effects of traumatic exposure on the mental health of adolescents and young people. Instituting school mental health services are a cost-effective way to aid in early diagnosis and treatment of affected youths.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

Adolescents are an important part of society who account for about 20% of the world's population (United Nations population Fund [UNFPA], 2013). Eighty-five percent of adolescents live in developing countries (UNFPA, 2013) where it is projected that this population will increase by about 600% by the year 2025 (United Nations [UN], 2008). In developing countries such as Nigeria over 50% of its population are below the age of 20 years (United Nation Children's Emergency Fund [UNICEF], 2012). In Nigeria a large number of children and adolescents live under extremely difficult circumstances (Omigbodun *et al.*, 2008). As a result of the social change. Poverty, violence and chaos have affected the quality of life of majority of Nigerians, ranking it amongst the lowest in the world (Omigbodun *et al.*, 2008).

Worldwide a lot of children and adolescents are exposed to or directly involved in violence (Holford, 1993) and as a result, child related social indicators are on the decline (UNICEF, 2012). Studies have repeatedly shown that adverse social circumstances and traumatic events like violence, loss of loved ones, accidents or man-made disasters during childhood are associated with mental health problems later in life (Atilola *et al.*, 2013, Steiner *et al.*, 1997). These disorders include posttraumatic stress disorder (PTSD), depressive and anxiety disorders, problems of low self-esteem, self-destructive behaviour and aggression (Seedat *et al*., 2004). Research has also shown that emotional and behavioural problems affecting people below the age of 18 years such as PTSD are as high as one in every five people, and majority those affected are unable to access treatment (Baosher and Cederblad, 2000, Giel *et al.*, 1981, Costello, 1989,

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Costello *et al.*, 1988). Biologists have discovered neurodevelopmental changes occurring in the brain as a response to traumatic events resulting in maladaptive responses to the stress (Fergusson *et al.*, 1998).

Posttraumatic stress disorder (PTSD) occurs when a set of typical symptoms develop following an individual witnessing, being involved in or hearing about an extreme traumatic event (American Psychiatric Association [APA], 2000). PTSD has been found to be one of the commonest maladaptive responses that occur as a reaction to traumatic exposure (Cafifo and Belaise, 2003). Projections show that by the year 2020, PTSD will be of major public health importance and a leading cause of disease burden worldwide (Murray and Lopez, 1997).

Despite reports about natural and manmade disasters such as floods, fire outbreaks and acts of terrorism, there are few reports on the mental health implications of these traumatic events as well as rates or types of exposure among Nigerian adolescents (Omigbodun *et al*., 2008).

Traumatic events are situations involving life endangerment, serious injury or threats accompanied by feelings of intense fear, horror or hopelessness (APA, 2000). Studies on the mental health effects of trauma are few in developing countries compared to several studies in developed countries that have examined the prevalence of traumatic experiences and posttraumatic stress reactions in adolescents and young adults (Copeland *et al.*, 2008). The few studies on exposure to traumatic events in Nigeria reveal a prevalence of between 34% (Omigbodun *et al.*, 2008) and 40% (Oladeji *et al.*, 2011). Both of these studies were carried out among adolescents in Ibadan, South-west Nigeria. In other countries where community violence and crime are also highly prevalent, for example, South Africa, studies show a prevalence of between 67-86% for exposure to traumatic events in children (Peltzer, 1999, Suliman *et al.*, 2005). In Israel a prevalence of 32.2% was found in a study done among children (Silva *et al.*,

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2000).

Although individual responses to traumatic events vary, traumatic experiences in childhood and adolescence tend to have serious consequences, as children exposed to trauma have almost double the rates of psychiatric disorders as those not exposed (Copeland *et al.*, 2007). Higher rates of mood and anxiety symptoms have been reported among those exposed to traumatic events (Seedat *et al.*, 2004, Pynoos *et al.*, 1993) as well as a strong graded relationship between the number of family vulnerability factors and risk of exposure to childhood trauma (Costello *et al.*, 2002).

Despite these findings there is still a low level of awareness and limited data available on the impact of traumatic events on adolescents in developing regions of the world (Suliman et al., 2005, Holford, 1993).

1.2 JUSTIFICATION FOR THE STUDY

Exposure to traumatic events can have serious adverse consequences on the physical and mental health of young people including the development of posttraumatic stress symptoms (PTSS) and PTSD. The presence of PTSS can also be associated with other mental health difficulties such as depression and anxiety (Seedat *et al,.* 2004, Pynoos *et al.*, 1993).

Reports on the prevalence of PTSS and PTSD have only been documented on adolescents in South west Nigeria. Information about exposure to traumatic events and the prevalence and correlates of PTSS and PTSD are yet to be documented in the Northern parts of Nigeria.

Therefore, this study aims to assess the prevalence and correlates of posttraumatic stress symptoms (PTSS) among secondary school students in Zaria, North west Nigeria.

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The findings can help develop a frame work for policies aimed at reducing harmful exposure of adolescents to traumatic events as well as identifying those who if exposed are more likely to develop PTSS. This will serve as a guide for child and adolescent mental health professionals, and contribute to the planning and organization of trauma-related mental health services. Affected children and adolescents would then be able to assess these services for screening and treatment of PTSS and other sequlae such as depression.

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CHAPTER TWO

2.1 LITERATURE REVIEW

2.2 ADOLESCENCE

2.2.1 CONCEPT OF ADOLESCENCE

Adolescence is believed to be a critical period associated with a lot of risks which can affect normal development (Suliman *et al.*, 2005, Takanishi, 1993). It is defined as the period from ages 10 to 19 years (WHO, 2013) and seen as a time of transition from childhood to adulthood comprising biological, psychological and social change (WHO, 2013). During adolescence, physical and sexual maturation takes place and the ability to think abstractly is developed. Individual identities, social and economic independence, as well as movement into adult roles and relationships are also developed. Inspite of these attainments, adolescents still differ from adults in their inability to understand complex issues (Ellis *et al.*, 2008). Adolescence is also a period of increased risk because issues of social contexts such as peer pressure exert powerful influences on the individual (WHO, 2013). Major events occurring during this period may alter the balance between risk and protective factors thereby dramatically altering the individual's course of development (Ellis *et al.*, 2008). Studies have shown that between 15 and 20% of adolescents suffer from mental disorders such as depression and anxiety (Audu, 2013, Abiodun, 1993, Gureje *et al.*, 1994).

Due to improvements in healthcare and life expectancy especially in developing countries there has been a marked increase in the child and adolescent population worldwide (Audu, 2013, Carl 2004). This has resulted in half of the world's population of about 6.3 billion being below the age of 25 years and adolescents accounting for roughly 20% of this (UNICEF, 2005) population.

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Nigeria's population comprises mostly of children and adolescents as a third of its population falls between the ages of 10 and 25 years (UNFPA, 2010) and about half of this population are below the age of 18 years (WHO, 2005).

2.2.2 THEORIES OF ADOLESCENCE

Over the years, the period of adolescence has aroused a lot of interest and this has resulted in the postulation of a number of theories. Psychologists such as G. Stanley Hall proposed the 'storm and stress' theory of adolescence (Gross, 2001). In this theory, adolescence was viewed as a time of 'storm and stress' and described as a time of contradictions as well as variations of mood and emotions. Other proponents of this theory such as Stone and Church (1989), agreed that although adolescence can be a period of rebelliousness and intense idealism, at this time the adolescent develops a sense of security that allows them negotiate successfully multiple milestones in relation to their developmental stage (Stone and church, 1989). This gives rise to a "cohesive (intact) sense of self-identity", at the end of this period (Masten and Coatsworth, 2000, Ellis, MacDonald *et al.*, 2008).

Mwale (2010) reviewed several theories on the period of adolescence and found that a consistent view was that of several changes occurring at the same time. Psychoanalysists such as Anna Freud, described adolescence as a period of turbulence due to sexual conflicts that arise during this period. Other schools of thought, such as Bandura believed however, that since society saw adolescence as a period of tension, it repeatedly reinforced this through cultural expectations and the media, and as such maintained certain role behaviours, thereby creating a 'self-fulfilling prophecy'. Other theorists such as Benedict (Mwale (2010), felt that it was the learning of a different set of behaviours, roles and attitudes that made the transition period from childhood to adulthood stressful. Carl Jung from the analytic view point described adolescence as a period of

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maturation resulting in 'finding of one's self' through life experiences, or as a period of 'growing into adulthood and a time referred to as 'individuation' (Lee, 2012 and Lawson, 2008).

2.3 DEFINITION OF POSTTRAUMATIC STRESS DISORDER (PTSD)

2.3.1 Tenth Revision of the International Statistical Classification of diseases and Related Health Problems (ICD-10)

According to the *Tenth Revision of the International Statistical Classification of diseases and Related Health Problems* [ICD-10] (World Health Organisation [WHO], 1993), PTSD is a delayed or protracted reaction usually occurring within six months from the time of exposure to a stressful event of an extremely catastrophic nature which is likely to cause pervasive distress in almost anyone. Examples include natural or man-made disasters, combat, serious accidents, witnessing the violent death of others, or being the victim of torture, terrorism, rape or other crime.

Symptoms include episodes of repeated reliving of the trauma in intrusive memories by way of flashbacks or nightmares, a sense of 'numbness' and emotional blunting, withdrawal, unresponsiveness, anhedonia, and avoidance of activities and situations that remind one of the traumatic event(s). There is usually associated autonomic hyperarousal, hypervigilance, enhanced startle reaction and insomnia.

2.3.2 Diagnostic And Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)

The earlier edition *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (APA, 1994, Semple and Smyth, 2013) defined PTSD as a disorder in which a person had been exposed to a traumatic event which involved actual or threatened death or serious injury to the

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physical integrity of self or others. The traumatic event was persistently re-experienced in 1 (or more) of the following ways:

- Recurrent and intrusive distressing recollection of the event, including images, thoughts, or perceptions (or repetitive play in which themes or aspects of the trauma are expressed in children).
- Recurrent distressing dreams of the event (or frightening dreams without recognizable content in children).
- Acting or feeling as if the traumatic event were recurring (or trauma-specific re-enactment in children).
- Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.

Additional criteria included persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three or more of the following:

- Effort to avoid thoughts, feelings, or conversations associated with the trauma.
- Efforts to avoid activities, places, or people that arouse recollections of the trauma.
- Inability to recall an important aspect of the trauma.
- Markedly diminished interest or participation in significant activities.
- Feelings of detachment or estrangement from others.
- Restricted range of affect.
- Sense of fore shortened future.

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Symptoms of PTSD should last at least 1 month, and it is necessary that the disturbances cause clinically significant distress or impairment in social, occupational, or other areas of functioning.

PTSD is considered to be "acute" if the duration of symptoms is between 1 and 3 months or "chronic" if it is 3 months or greater. If symptoms do not occur until at least 6 months have passed since the stressor, the delayed-onset subtype is given (DSM-IV, 1994, Kay and Tasman, 2006).

2.3.3 Diagnostic And Statistical Manual of Mental Disorders, Fifth Edition [DSM-V] (PTSD)

The *Diagnostic and statistical Manual of Mental Disorders, Fifth Edition* [DSM-] (APA, 2013) defines PTSD as a condition resulting from exposure to actual or threatened death, serious injury or sexual violation. A situation is described, in which the individual directly experiences the traumatic event, witnesses the traumatic event or learns the traumatic event occurred to a close member of the family or close friend of which the actual or threatened death was violent. The individual with PTSD is repeatedly exposed first-hand to aversive details of the traumatic event, of which the trauma causes significant interference with the individual's daily living activities.

2.4 HISTORY OF POSTTRAUMATIC STRESS DISORDER

Clinical syndromes resembling PTSD had been described as early as in the mid-19th century (Kinzie and Goetz, 1996). The 'Seduction Theory', Freud's original model of neurosis, was a post-traumatic concept dealing with the integration of 'external stressor events' or events outside the individual's control (Wilson, 1994) with emotional and environmental dimensions (Schestatsky *et al.*, 2003). Freud's work influenced the DSM-I and II classification regarding stress response syndromes (Wilson 1994). It is however believed that French scholars Charcot

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and Janet, were the first to connect traumatic events and symptoms of hysteria prior to the writings of Freud (Schestatsky *et al.*, 2003).

Following the experiences of victims of the holocaust in concentration camps and during World War II, the role of severe trauma in PTSD was recognized (Kinzie and Goetz, 1996). Its description had however been complicated by issues of nomenclature leading to its placement as a syndrome under a variety of psychiatric diagnoses such as, traumatic hysteria, traumatic neurasthenia and traumatic neurosis (Kinzie and Goetz, 1996).

Posttraumatic Stress Disorder was added to DSM-III in 1980 (APA, 1980), and has since played an important part in psychiatric theory and practice (Friedman, 2013). In PTSD, the aetiological event is placed outside the individual and thus removes the emphasis on inherent individual weaknesses (Friedman, 2013), thereby placing the focus on the 'concept of trauma' (Friedman, 2013).

2.5 THEORIES OF POSTTRAUMATIC STRESS DISORDER

Posttraumatic stress disorder is believed to be a common reaction to traumatic events from which many people recover after a few months, but in a subgroup of people the symptoms persist and often for years (Ehlers and Clark, 2000).

Different theories, such as the *dual representation, emotional processing and cognitive model of PTSD* have all been put forward to explain the development and maintenance of PTSD (Bisson, 2009). The more current theories use stimulus and response elements in combination to explain meaning, interpretation and appraisal with the belief that in as much as social factors play a significant role in the development and maintenance of PTSD, processing makes use of the ability to access and assimilate new information within pre-existing schemas (Bisson, 2009).

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2.5.1 The dual representation model

The dual representation model proposes that memory is key in the phenomenology of PTSD (Brewin and Holmes, 2003). It assumes that trauma experienced after childhood results in the formation of verbal and automatically accessible memory types through the use of appropriate situational cues (Brewin, *et al.*, 1996). It postulates that features and details of the traumatic event are retained in the 'situationally accessible (episodic) memory'. The 'situationally accessible' memory represents the sensory information and spatial images, but because this information is not integrated or understood, the temporal sequence is not adequately represented (Brewin and Holmes, 2003). The verbally accessible (semantic) memory takes over when a conscious effort is made to understand, reflect upon and integrate the details of the event (Brewin *et al.*, 1996, Brewin and Holmes, 2003).

These routes play an important role in reliving the traumatic event and emotionally processing the trauma, thus resulting in successful completion, chronic processing or premature inhibition of processing (Brewin *et al.*, 1996).The dual representation theory suggests that features and details of the traumatic event result in individuals' attempting to distance themselves from the event. In order to achieve this they attempt to distract themselves from memories of this event. This helps preclude negative mood states (Brewin *et al.*, 1996). As a consequence of this details of the event become retained in the 'situationally accessible' rather than the 'verbally accessible' memory (Brewin and Holmes, 2003). Cues or stimuli in the environment associated with the traumatic event tend to activate or prime the contents of this memory system. As a result individuals begin to experience the intrusive images and flashbacks which are the hallmarks of PTSD. Most times dissociation immediately after some traumatic event may predict subsequent PTSD (Brewin and Holmes, 2003).

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2.5.2 The emotional processing theory

The emotional processing theory proposes that the severe anxiety PTSD includes excessive stimuli and response elements as well as elements within the situation that take on a morbid meaning as a result of the excessive anxiety aroused (Rauch and Foa, 2006) by way of anxiety provoking cues. Activation of the fear response occurs through various ways such as information about the feared stimulus, the meaning of the feared stimulus to the individual in terms of escape or avoidance responses to the feared stimulus. The theory claims that trauma survivors that develop PTSD have faulty cognitions, that is, they have rigid 'pre-trauma views' (Brewin and Holmes, 2003) that underlie the development and maintenance of PTSD. In summary the theory suggests that because of chronic avoidance, maladaptive schemas are left in place as people do not remain in a situation long enough for new learning to take place. For example, the driver of a car may relate driving fast with danger as well as blue cars with danger since the car that hit him was blue. A rape survivor might believe that all parks are dangerous since she was raped in a park and avoid parks all together (Rauch and Foa, 2006). As a result of the negative emotion on their rigidly held positive views about themselves being extremely competent and the world being extremely safe (Brewin and Holmes, 2003), they take on contrasting views thereby believing that the world is extremely dangerous and that they themselves are completely incompetent (Rauch and Foa, 2006). This leads to the negative representation that is the basis of PTSD (Brewin and Holmes, 2003).

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2.5.3 The cognitive model

The cognitive model proposes that the persistence of PTSD is as a result of the way the individual processes trauma thereby leading to a sense of serious and imminent threat to self (Ehlers and Clark, 2000). This perception of the situation arises in two ways. The first way is through excessively negative appraisals of traumatic events and their consequences, while the second is by distortion of autobiographical memory through poor analysis of the situation, strong associative memory and strong perceptual priming. This leads to inflexibility in the appraisal of the memory about the event (Ehlers and Clark, 2000).

2.6 STRESSORS AND POSTTRAUMATIC STRESS SYMPTOMS

Traumatic events involve both acts of commission and omission that affect the child's normal development and ability to survive (Cloitre *et al.*, 2009). A lot of adolescents are often vulnerable to exposure to traumatic events in their day to day lives and this may cause them to lag behind in their behavioural and emotional growth when compared to their unexposed peers (Suliman *et al*, 2005, Schurink *et al.*, 1992). This would result in the development of various psychopathologies ranging from anxiety to PTSD (Brown et al, 2000, Omigbodun *et al.*, 2008), which in turn may affect their school performance and long term output in adulthood (Omigbodun *et al.*, 2008, Gwadza *et al.*, 2007).

Traumatic events (Cloitre *et al.*, 2009) occurring in childhood may lead to associated symptoms of disturbances, in emotional and inter-personal self-regulatory abilities like, symptoms associated with dissociation, avoidant behaviours as well as problems with anger management (Cloitre *et al.*, 2009). PTSD has been associated with alterations in the central and autonomic nervous systems leading to psychophysiological changes such as hyperarousal of the sympathetic

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nervous system, increased sensitivity and augmentation of the acoustic-startle eye blink reflex, and sleep abnormalities (Friedman, 2013).

Some studies have shown that exposure to multiple, varied types of traumatic events such as domestic violence, childhood abuse and other acts of violence (Cloitre *et al.*, 2009, Kessler, 2000), does not always affect the way PTSD will present (Silva *et al*., 2000). In terms of resilience a higher Intelligence quotient (IQ) as well as good family functioning improves a child's likelihood of being able to cope when exposed to a traumatic event. On the other hand, maternal psychopathology is known to adversely affect this ability (Silva et al., 2000). However the rate of conversion to full PTSD once symptoms of PTSS develops remains constant (Silva *et al.*, 2000, Fitzpatrick and Boldizar, 1992).

2.7 EPIDEMIOLOGY OF POSTTRAUMATIC STRESS DISORDER (PTSD) AND POSTTRAUMATIC STRESS SYMPTOMS (PTSS)

PTSD has been listed among the top 20 most "burdensome" diseases by the World Health Organization (WHO) when characterizing disease in the general population (Freed *et al.*, 2010). Studies in Africa rank: PTSD, depression, anxiety and somatization disorder as the commonest mental health disorders (Njenga *et al.*, 2006). Epidemiologic surveys data show that PTSD usually co-exists with one or more other psychiatric disorders in the vast majority of individuals. The most consistent comorbidity was found to be depression (Brady *et al.*, 2000). In terms of burden of disease, the WHO Global Burden of Disease study rated PTSD almost as high as a major depressive disorder (Freed *et al.*, 2010).Though some African countries have recorded prevalence rates as high as between 69 and 91% (Seedat *et al.*, 2004, Suliman *et al.*, 2005), prevalence rates vary from region to region (Njenga et al., 2006). In Rwanda following the 1994 genocide, prevalence rates of PTSD from 54 to 62% were obtained among adolescents

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(Neugebauer *et al.*, 2009). Studies in Uganda gave a prevalence of 31.6 to 80.2% in similar populations and studies from the South-western region of Nigeria have recorded rates of between 34 and 40% (Oladeji *et al.*, 2011, Omigbodun *et al.*, 2008), which are however similar to rates of between 20% and 40% obtained from developed countries such as the United States.

2.8 SOCIODEMOGRAPHIC CORRELATES OF PTSS

2.8.1 Exposure-response relationship

Studies show that young people exposed to disasters and war show a relationship between stressor and emergence of posttraumatic stress disorder (Gupta *et al.*, 1996, Rutter *et al.*, 2008). A study in Rwanda documented a strong relationship between the number of traumatic events children were exposed to during the genocide and eventual emergence of PTSS; similar results were found in studies of Bosnian children in the aftermath of the war (Smith *et al.*, 2002, Rutter *et al.*, 2008). Vulnerability to PTSD effects of trauma exposure is believed to be influenced directly by childhood depressive behavioural problems and exposure to assaultive violence especially if it is repeated (Storr *et al*., 2007, Dong *et al.*, 2004, Coid *et al.* 2001, Childhelp, 2005, Finkelhor and Dziuba-Leatherman 1994). This has been supported by the fact that experiencing a traumatic event has been found to be associated with depressive symptoms (28% to 44.2%), especially if the event invvolved bodily harm (Omigbodun *et al.*, 2008). Clinical experience with PTSD diagnosis shows, that there are individual differences regarding the capacity to cope with catastrophic stress, while most people exposed to traumatic events do not develop PTSD, others may go on to develop the full-blown syndrome (Friedman, 2013). Cloitre *et al*., hypothesised childhood and adulthood trauma could play a role in the development of PTSS. Though studies done on adult populations in different parts of the world have shown that certain types of traumatic events are associated with higher PTSD rates, not enough studies done

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on children support this (Rutter *et al.*, 2008). According to the developmental theory (Pynoos, Steinberg, &Wraith,1995), childhood trauma can be more strongly linked to symptoms of PTSS than adulthood trauma (Cloitre, Stolbach *et al.*, 2009). Several studies worldwide have documented that the number of trauma and associated symptoms experienced simultaneously have been increasing proportionately over time (van der Kolk, *et al.*, 2005, Cloitre, Stolbach *et al.*, 2009, Briere, Kaltman, and Green, 2008).

2.8.2 Familial risk factors

Certain aspects of the child's family enviroment have been associated with the development of PTSS symptoms. These include factors such as maternal PTSS especially in cases where the mother has been exposed to the same traumatic experience (Smith *et al*., 2001), maternal depression (Smith *et al.*, 2002) and a strenous emotional enviroment (Rutter *et al*., 2008). The mechanism behind familial association though unclear suggests an interaction between parents and children when they are locked into cycles of not talking about the traumatic event for fear of upsetting the other, thus perpetuating the event by way of negative re-enforcement through avoidance of processing the traumatic memories (Rutter *et al.*, 2008). This also supports the view that parental PTSD is a risk factor for PTSD in children (Atilola *et al.*, 2013, Yehuda *et al.*, 2001, Schwarz *et al.*, 1993).

2.8.3 Genetic risk factors

Family and twin studies give evidence for a role in genetic influences in the development of PTSD (Atilola *et al.*,2013). Studies on Vietnames veteran twins show a vunerability of between 13 and 34% for various PTSD symptom clusters (Atilola *et al.*, 2013, Koenen *et al.*, 2002). Thus supporting the view that there is a heritable tendency towards dysregulation of neurochemical

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responses to stressful events as well as a heritable pre-stress hyperactivity of the catecholamine systems that comes into play in PTSD (Atilola *et al.*, 2013, Perry 1991, Segman *et al.*, 2001).

2.8.4 Personal psychosocial risk factors

Being female has been associated with a higher risk of PTSD followig exposure to a traumatic event (Atilola *et al.*, 2013, Giacona *et al.*, 1995, Breslau and Anthony, 2007). The higher prevalence in females has been attributed to a higher tendency for females to internalize symptoms as evidenced by a higher prevalence in depression and anxiety disorders in response to traumatic events (Atilola *et al.*, 2013). While Boys are more likely to exihibit externalising behaviour (Atilola *et al.*, 2013, Hill *et al.*, 2006).

2.8.5 Age

The age at exposure also plays an important part in the development of PTSS, studies show that adolescents tended to manifest symptoms more than younger children when exposed to similar traumatic experiences (Atilola *et al.*, 2013, Maercker *et al*., 2004). This has been attributed to memory modulation and more matured coping mechanisms that come into play in adolescence (Maercker *et al.*, 2004).

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2.9 DEPRESSION: A COMMON COMORBIDITY WITH POSTTRAUMATIC STRESS DISORDER

There are several definitions of depression which have virtually all symptoms in common.

2.9.1 Tenth Revision of the International Statistical Classification of diseases and Related Health Problems (ICD-10)

According to the *Tenth Edition, International Classification of Disease-10 (ICD-10)* WHO, (1990) depression is defined as the presence of low mood, low energy, and loss of interest in pleasurable activities occurring for most of the day every day for two weeks. Other additional symptoms are reduced concentration and attention, reduced self-esteem and self-confidence, ideas of guilt and unworthiness, bleak and pessimistic views of the future, ideas or acts of self harm or suicide, disturbed sleep, diminished appetite. It can be classified into Mild, Moderate and Severe depression with or without psychotic features.

2.9.2 Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)

The *Diagnostic and Statistical Manual of Mental Disorders-Text Revision [DSM-IV-TR]* (APA, 2000) defines a Major Depressive Episode as five or more of the following symptoms being present during the same two week period and representing a change from previous functioning; at least one of the symptoms is either a depressed mood most of the day nearly every day, loss of interest or pleasure, being a marked reduction in interest or pleasure in all, or almost all activities most of the day, nearly every day.

Additional symptoms may include the following:

- A change in body weight of >5% per month.

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- Insomnia or hypersomnia.
- Psychomotor retardation or agitation nearly every day.
- Feelings of worthlessness or excessive or inappropriate guilt.
- Diminished ability to think or concentrate.
- Recurrent thoughts of death.

In both the ICD-10 and DSM-IV-TR a general medical condition or psychoactive substance use must be excluded.

2.10 THE BURDEN OF DEPRESSION

About 350 million people worldwide suffer from depression (WHO, 2012). Its global prevalence is estimated to be about 4.7% (Ferrari et al., 2012). Depression was identified in the WHO report as the leading global cause of years of health lost to disease in both men and women.Worldwide projections by the World Health Organization for the year 2030 show that unipolar major depression will become the leading cause of disease burden (Lépine and Briley, 2011). It is has a higher burden for females (50%) than males, and is the leading cause of disease burden for females in low and middle income countries [LMIC] (WHO, 2008) as well as a primary cause of loss of health for both sexes in high income countries [HIC] (WHO, 2012). A survey of 17 countries revealed that 1 in 20 people would have had a depressive episode in the year prior to the study (Marcus *et al.*, 2012).

Depression is more disabling than a lot of chronic medical conditions, as most people with depression never get treatment. Whereas for those that do it is inadequate or inappropriate (Rich, 2009, WHO, 2012). But despite the known effectiveness of treatment, fewer than 50% of people globally and less than 10% of people in some countries receive treatment for depression (Marcus

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et al., 2012). Depression increases the risk of workplace productivity and absenteeism resulting in lowered income or unemployment in many countries across the world (Lépine and Briley, 2011). Studies on general populations, such as Japan and the US, reported a varying range from 3% to over 9% respectively, with a life time 12- month prevalence rate of between 10% and 15% for both (Lépine and Briley 2011). In South Africa studies have reported a prevalence for current depressive symptoms as 20.5% in women and 13.5% in men (Ndunaa *et al.*, 2013). They also reported for both sexes a prevalence rate of 9.7% for lifetime depression and 4.9% for depression in the 12 months prior to the interview (Tomlinson *et al.*, 2009). In other less developed countries such as Uganda a prevalence of 21 was reported for the general population in the general population (Bolton *et al.*, 2004).

Studies on depression in Nigeria reveal that it is as common as in developed countries (Uwakwe, 2000).), with its core symptoms of low energy, low mood and loss of interest in pleasurable activities being similar to symptoms described in other parts of the world (Otote and Ohaeri, 2000). In Nigeria the lifetime prevalence for a current major depressive episode in the general population has been reported to be between 3.1% and 5.2%, with a 12-month prevalence rate of 1.1% with in the same population (Gureje *et al.*, 2010, Amoran *et al.*, 2007). In other studies in South-west Nigeria prevalence rates for depression among adolescents and young people have been found to range from 2.7% to 9.6% (Adewuya *et al.*, 2007). Depression has also been found to be commoner among the female gender (Ihezue *et al.*, 1986 Gureje *et al.*, 2010).

2.11 RELEVANCE OF THE STUDY

Assessment of the effects of multiple and varied types of traumatic events is necessary for insight into the experience of most trauma survivors (Kessler, 2000), as multiple and repeated trauma in childhood determines presentation in childhood and as such, will have a direct

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influence on evaluation and treatment (Cloitre, Stolbach *et al.*, 2009). It has been found that traumatic experiences threaten the integrity of the family structure by acting on other factors between the child and family, which may result in the development of PTSD (Silva *et al.*, 2000). Left untreated, the psychological and social impact of traumatic events and PTSD do not just fade-out over time (Scheeringa *et al.,* 2005, Atilola *et al.,* 2013). It maybe associated with functional impairments leading to the development of other psychiatric disorders, as (Scheeringa *et al.,* 2005, Atilola *et al.,* 2013) well as physical health problems (Cohen *et al.,* 2000, von Kanel *et al.,* 2006, Kubzansky *et al.,* 2007). This may then lead to impaired functioning in important adult roles (Acierno *et al,* 2007, Koenen *et al.,* 2008), which may, eventually result in suicide (Scheeringa *et al,* 2005, Atilola *et al.,* 2013).When left untreated PTSD may become chronic (Burger and Lang, 1998) and this has huge implications in terms of personal and societal costs (Kessler, 2000). Vunerable children exposed to domestic violence are most predisposed to symptoms of PTSD, early identification of these children can aid in successful preventive intervention (Silva *et al.*, 2000) hence this study.

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CHAPTER THREE

AIM AND OBJECTIVES

3.1 AIM:

To assess exposure to traumatic events and explore associated posttraumatic stress symptoms (PTSS) among secondary school students in Zaria North-west Nigeria.

3.2 OBJECTIVES:

The following will be carried out among secondary school students in Northwest Nigeria:

1. To determine the pattern and prevalence of exposure to traumatic events among secondary school students.
2. To determine the prevalence of PTSS among secondary school students.
3. To determine the correlates of PTSS.
4. To determine the prevalence of depression.
5. To determine the association between PTSS and major depressive disorder.

3.3 HYPOTHESIS

1. There is no relationship between traumatic exposure and PTSS among secondary school students in Zaria, North-west Nigeria.
2. PTSS is not associated with sociodemographic characteristics of this group of students.

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CHAPTER FOUR

METHODOLOGY

3.1 STUDY LOCATION

This study was carried out in Zaria, a town located in Kaduna, one of the North western states in Nigeria. Within Zaria is located 'Zaria city', a part of the town that was once capital of the entire Northern part of Nigeria. Zaria town comprises of four LGAs namely:

- Zaria city,
- Giwa,
- Sabon Gari, and
- Soba.

The predominantly spoken local language is Hausa and the inhabitants comprise of both Christians and Muslims (National Population Commission [NPC], 2012).

According to the 2005 census Zaria had a population of about 847, 000. It is mainly an agricultural town dealing in cotton and millet, but also hosts a lot of educational establishments such as the Ahmadu Bello University, the School of Aviation Technology, the Federal College of Education as well as numerous primary and secondary schools (National Population Commission [NPC], 2012).

The initial sampling for this study was done by multistage random sampling. At the first stage, local government areas (LGA) were divided into clusters of which one local government was picked at random from among the four LGAs. Sabon Gari was picked, and it was the largest and

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had about 60 schools of which six were picked. The first school was picked by random sampling after which every tenth school was picked there after till six schools were selected.

Unfortunately all the schools selected by this process refused to cooperate, therefore a convenience sample was selected with only the six schools that agreed to participate in the study. These were four public schools located within Chindit Barracks, in the Nigeria Army Depot, and two private secondary schools located within the metropolitan part of the town. All the six schools were located within the Sabon Gari LGA of Zaria, North-west Nigeria. The public schools comprised of two junior secondary schools, one for boys and the other for girls as well as two senior secondary schools of similar distribution. Each school was headed by a principal and vice principal respectively and had about a thousand students enrolled. The private schools were co-educational and each comprised of a senior and junior secondary school combined as a single school. Each school was also headed by both a principal and vice principal respectively. The names of the public schools were Government Boys Junior Secondary School (GJSSB), Government Junior Secondary School (GJSSG) Girls, Government Boys Senior Secondary School (GSSSB), and Government Senior Secondary School (GSSSG) Girls. The names of the private secondary schools were Dagama Legacy School, and Creative Brains School. The period of data collection lasted for one week in the month of February 2014.

4.2 STUDY DESIGN

The study was a cross-sectional descriptive study on the prevalence and correlates of posttraumatic stress symptoms (PTSS) among secondary school students in, North-west Nigeria.

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4.3 SAMPLE SIZE

The sample size estimation was done using a prevalence of 40% for exposure to traumatic events among adolescents in the South-western part of the country (Oladeji *et al.*, 2011). A confidence interval of 95% was used and precision was set at 0.05.

Formula for calculation of single proportion (Kirkwood and Sterne, 2010) was be used;

$$\mathbf{n = \frac{Z^2P(1-P)}{d^2}}$$

n= sample size

Z= level of confidence interval in this case 95% (1.96).

P= expected prevalence, in proportion of one, thus 40 was 0.4.

Prevalence (P) = 40% for lifetime exposure to traumatic events among adolescents in the South-west (Oladeji *et al.*, 2011).

d = Degree of precision was set at 0.05.

If $n = \frac{1.96^2 x 0.4(1-0.4)}{0.05^2}$

Then n = 369

To cover for attrition (Araoye, 2003) the following formulae was used

$$n_s = \frac{n}{ar}$$

Where n= calculated sample size

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And ar = anticipated response rate set at 70%

n_s= compensated sample size.

Thus $n_s = \frac{369}{0.7} = 527$

This was rounded up to 600 in order to improve the precision of the study.

4.4 STUDY POPULATION

The participants were all secondary school students in classes' junior secondary school (JSS) one through senior secondary school (SSS) three that consented to participate in the study.

4.4.1 Inclusion criteria

Students in the selected schools that were picked and gave consent to participate in the study.

4.4.2 Exclusion criteria

Students with any disability that affected their ability to read, hear a conversation, or write without assistance.

Students who did not meet the inclusion criteria along with those that did not give consent.

4.5 SAMPLING TECHNIQUE

A total of six mixed gender schools were initially selected from a list of 60 schools in Zaria obtained from the Zonal Education Office, Ministry of Education, Kaduna State, which consisted of 40 public and 20 private schools.

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Due to difficulties encountered in terms of cooperation by the initial schools approached for permission to conduct the study, schools had to be picked based on those that were likely to cooperate. Four public and two private schools were selected and the multistage random sampling technique (Kirkwood and Sterne, 2010) was used to select 600 students who were then interviewed in two stages.

A hundred students per school were selected. The numbers were obtained by selecting 30 students in each of the JSS 1 arms; 35 from each of the JSS 2 and 35 from each of the JSS 3 arms of the public schools. The same method was used to select students from the two public senior secondary schools from SSS 1 through SSS 3. For each of the two private secondary schools 10 students were selected from JSS 1, twenty from JSS 2, twenty from JSS 3, twenty from SSS 1, twenty from SSS 2 and 10 from SSS 3. The form register containing the names of all the students belonging to each arm was used as a sampling frame. Students were randomly selected by the Table of Random Numbers from the school registers till the numbers required in each form were met. Figure1 shows the sampling process while figure 2, 3,4 shows the student selection.

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FIGURE 1: SAMPLING PROCESS OF THE STUDY

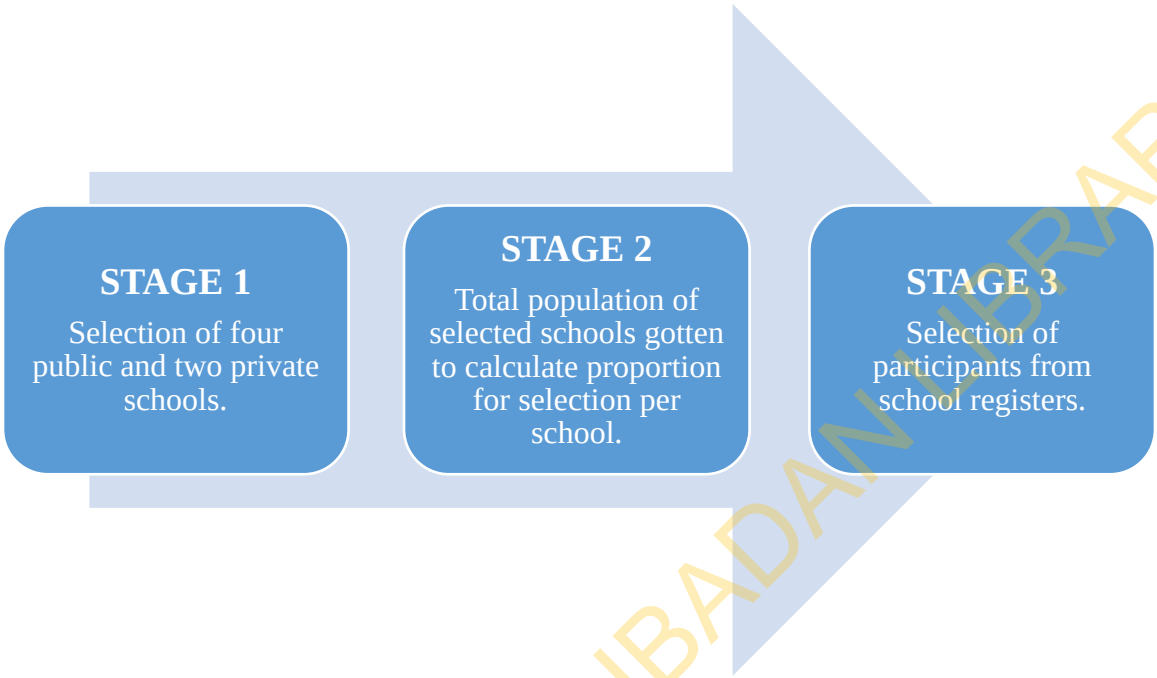

FIGURE 2: STUDENT SELECTION PER SCHOOL

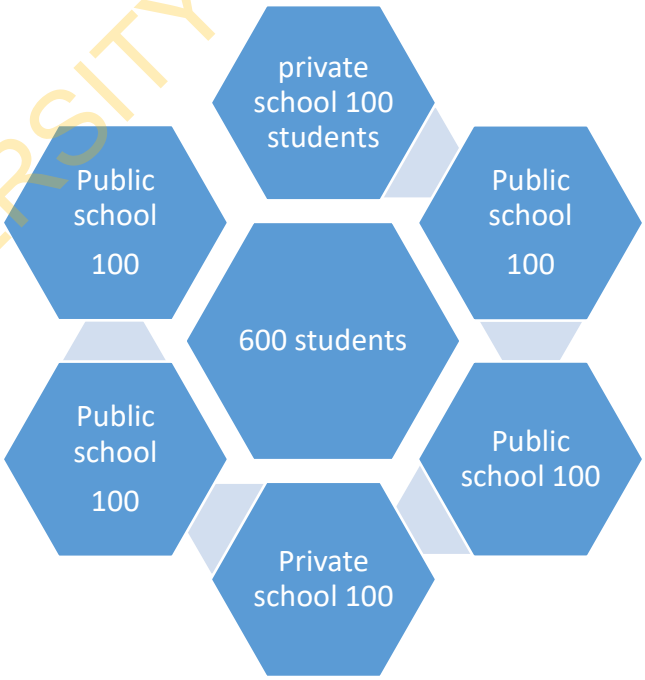

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FIGURE 3: DISTRIBUTION OF THE STUDENT SELECTION FOR THE PUBLIC SCHOOLS

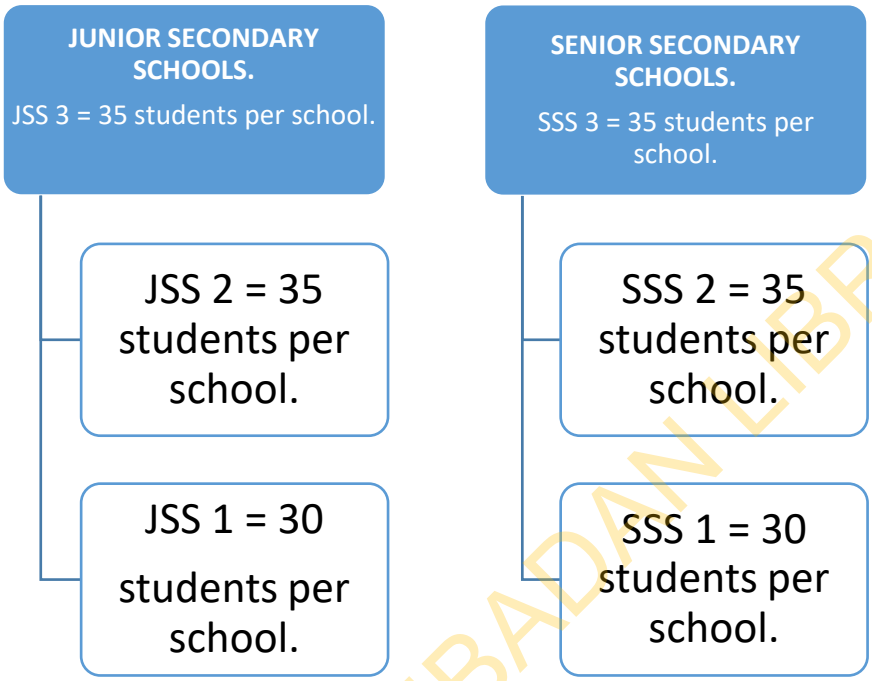
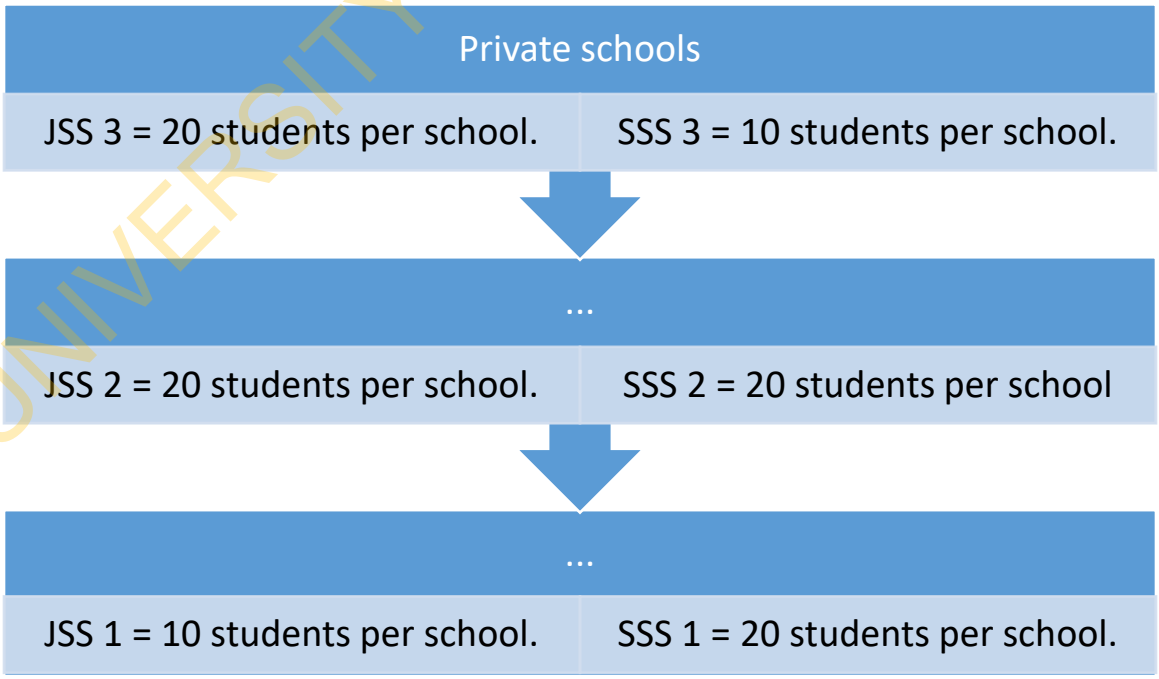


FIGURE 4: THE DISTRIBUTION OF THE STUDENT SELECTION FOR THE PRIVATE SCHOOLS



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4.6 STUDY INSTRUMENTS

4.6.1 Instruments

- The Sociodemographic questionnaire was designed to capture data on age, gender, religion, ethnicity, family structure, parental occupation and level of education.
- The Trauma Checklist was used as a screening instrument to determine exposure to traumatic events.
- The Kiddie Schedule for Affective Disorders and Schizophrenia for school-age children--Present and Lifetime (K-SADS-PL) was used to diagnose PTSS and PTSD, as well as major depressive disorder (MDD).

4.6.2 Sociodemographic questionnaire (see Appendix 2)

This was a 30- item questionnaire adapted from the one used in a study on exposure to traumatic events in inmates in the Abeokuta Borstal Home (Atilola *et al.*, 2013). It was used to obtain information on the sociodemographic profile, family setting and school history of the respondents. It was semi-structured and administered by the investigator in face-to-face interviews for good understanding of the questions asked.

4.6.3 Kiddie Schedule for Affective Disorders and Schizophrenia for school-age children--Present and Lifetime (K-SADS-PL). (see Appendix 3, 4, 5)

The K-SADS-PL is a semi-structured diagnostic interview that aims to assess current and past episodes of psychopathology in children and adolescents within the age ranges of 6 to18 years according to DSM-III-R and DSM-IV criteria (Kaufman *et al.*, 1997). It was modified from the adult's version of the Schedule for Affective Disorders and Schizophrenia [SADS] (Kaufman, *et al.*, 1997). Probes and objective criteria rate individual symptoms. The primary diagnoses assessed with the K-SADS-PL include: Major Depression, Dysthymia, Mania, Hypomania,

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Cyclothymia, Bipolar Disorders, Schizo-affective Disorders, Schizophrenia, Schizophreniform Disorder, Brief Reactive Psychosis, Panic Disorder, Agoraphobia, Separation Anxiety Disorder, Avoidant Disorder of Childhood and Adolescence, Simple Phobia, Social Phobia, Over-anxious Disorder, Generalized Anxiety, Obsessive Compulsive Disorder, Attention Deficit Hyperactivity Disorder, Conduct Disorder, Oppositional Defiant Disorder, Enuresis, Encopresis, Anorexia Nervosa, Bulimia, Transient Tic Disorder, Tourette's Disorder, Chronic Motor or Vocal Tic Disorder, Alcohol Abuse, Substance Abuse, Post-Traumatic Stress Disorder, and Adjustment Disorders. These are then grouped into five diagnostic supplements comprising of 82-items, namely:

- Supplement I: Affective Disorders
- Supplement II: Psychotic Disorders
- Supplement III: Anxiety Disorders
- Supplement IV: Behavioural Disorders
- Supplement V: Substance Abuse and Other Disorders

It is further divided into two parts, the Screen Interview and the Diagnostic Supplements. The screen interview asks about primary symptoms of the main disorder being assessed for. The symptoms in the screen interview assess for current and most severe past episodes simultaneously. If at least one symptom has been experienced during the screening process at present or in the past, it is rated as positive under current or past episodes and the interviewer goes on to administer the diagnostic supplement. The diagnostic supplement consists of a list of symptoms and probes to assess current or most severe past episodes of the psychiatric disorder. Each diagnosis is made based on DSM-III or DSM-IV criteria.

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The KSADS interview takes about 45-75 minutes to administer (National Technical Training Commission [NTTC], 2013) and has demonstrated good reliability and validity (Suliman *et al.*, 2005, Perrin *et al*., 2000). The PTSD and MDD module of the K-SADS was used in this study as it had been used in Nigeria before and demonstrated adequate validity and reliability (Gureje *et al.*, 1994, Omigbodun *et al.*, 1996, Oladeji *et al*., 2011).

The KSADS-PL is meant to be administered to both the child and the parent, however for the purpose of this study, it was administered only to the students due to the difficulty involved in bringing in the parents. Being a semi-structured interview the probes do not have to be recited verbatim but are asked in ways that will illicit the information necessary for the scoring of each item.

4.6.3.1 Trauma checklist (see Appendix 3)

The Trauma Checklist is found in a section of the KSADS, containing a list of DSM–IV qualifying traumas such as being robbed or mugged, being physically hurt or attacked, and being raped (Seedat *et al.*, 2004, APA, 1994). It focuses on likely traumatic events a child or adolescent is likely to have been exposed to such as being exposed to a violent crime either as a witness or victim, being exposed to traumatic news or terrorism related trauma, witnessing a natural disaster, domestic violence, physical or sexual abuse and 'other events' which includes possible events not mentioned (Seedat *et al.*, 2004, Oladeji *et al.*, 2011, Kaufman *et al.*, 1997). Respondents were also required to indicate the most frightening or upsetting event that had ever happened to them (Seedat *et al.*, 2004)

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4.6.3.2 Posttraumatic stress disorder module of the Kiddie Schedule for Affective Disorders and Schizophrenia for school-age children--Present and Lifetime (see Appendix 4)

The PTSD module comprises the Screen items which are made up of a list of five items ranging from 'experiencing recurrent thoughts' of the traumatic event, attempts to stop thinking about the traumatic event, nightmares, insomnia and irritability. These were rated as yes or no responses. The PTSD supplement was made up of questions that asked about repetitive play centred around the traumatic experience, dissociative experiences, illusions, hallucinations, hyperarousal symptoms, avoidant behaviours, disruption of family, social or (and) school functioning.

A diagnosis of PTSD was made using the DSM-IV diagnostic criteria (APA, 1994). A diagnosis of PTSD required that a participant have a minimum of one re-experiencing symptom, three avoidance/ numbing symptoms and two hyperarousal symptoms coexisting for at least one month and associated with significant distress or functional impairment (Oladeji *et al.*, 2011). Partial or sub-threshold PTSD was defined as having at least one symptom from each of the three symptom clusters for a duration of at least one month (Oladeji *et al.*, 2011, Seedat *et al.*, 2004, Breslau *et al.*, 2004). Individual's with more than one item on the trauma checklist had PTSD symptoms assessed based on the event the respondent found most distressing (Oladeji *et al.*, 2011, Seedat *et al.*, 2004, Breslau *et al.*, 2004)

4.6.3.3 Depression module of the Kiddie Schedule for Affective Disorders and Schizophrenia for school-age children--Present and Lifetime (see Appendix 5)

The Depression Screen Module of the KSADS-PL has a list of five symptoms which had probes covering questions about low mood, duration of low mood, motivation, boredom as well as

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questions covering the suicide spectrum such as recurrent thoughts about death, suicidal ideation, plan and attempt. The scores ranged as follows:

- 0 = 'No information',
- 1 = 'Not at all or less than once a week',
- 2 = 'Sub threshold',
- 3 = 'Threshold'.

The Depression supplement covers questions on the quality of low mood being different from grief, concentration, appetite, quality of sleep, sleep patterns, fatigue, self-esteem and rejection sensitivity. The diagnostic criteria based on DSM-IV required that the experience of low mood be at least for 3 weeks, the quality be different from that experienced following the loss of a loved one, the symptoms not be as a result of pharmacological agents and that a diagnosis of Schizophreniform disorder or Schizophrenia not be met.

4.7 TRANSLATION OF THE INSTRUMENTS

All the instruments used in this study were administered in English as the respondents were secondary school students and taught in English.

4.8 ETHICAL CONSIDERATION.

Ethical approval was obtained from the Kaduna State Ministry of Health, Ethical Review Board (Appendix 6). Approval to conduct the research was obtained from the Kaduna State Ministry of Education (Appendix 7). While permission to access the schools was obtained from the Zonal Education Office, Zaria Zone (Appendix 8) as well as from the appropriate authorities in each of the selected schools. A few days before the administration of the instruments, the selected schools were visited and the students were chosen from each class by random sampling.

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A consent form (Appendix 1) explaining the purpose of the study and procedure in English were given to both the parent/guardian and the student to sign (or thumbprint) should they agree to participate. The participants were ensured adequate privacy to aid in information divulging. All the selected students and their parents agreed to participate in the study at the first stage and second stages of the study.

4.9 STUDY PROCEDURE

4.9.1 Pilot study

A pilot study was conducted on 36 students selected at random from the sample frame of schools within the study location, excluding the selected schools for the main study. This was to assess the ease of administration of the instruments and identify any likely issues that needed to be addressed before the main study was done. In the course of the pilot study, some problems were encountered. It was discovered that students were reluctant to divulge information on whether they had experienced sexual abuse and also about their parents' alcohol intake status for fear of repercussions from others students finding out. Further assurance was given to the students that the information was strictly confidential and was only meant for research purposes.

4.9.2 Actual study

The researcher received training in the use of the research instruments. The study was carried out in two stages. Stage one involved the administration of the Sociodemographic questionnaire and the trauma checklist to all respondents. The Trauma Checklist was used to assess for history of exposure to a traumatic event and was assessed through face-to-face interviews. Those that reported having had exposure to a traumatic event went on and were administered the Screen section of the PTSD module, and having a history of experiencing at least one of the PTSD

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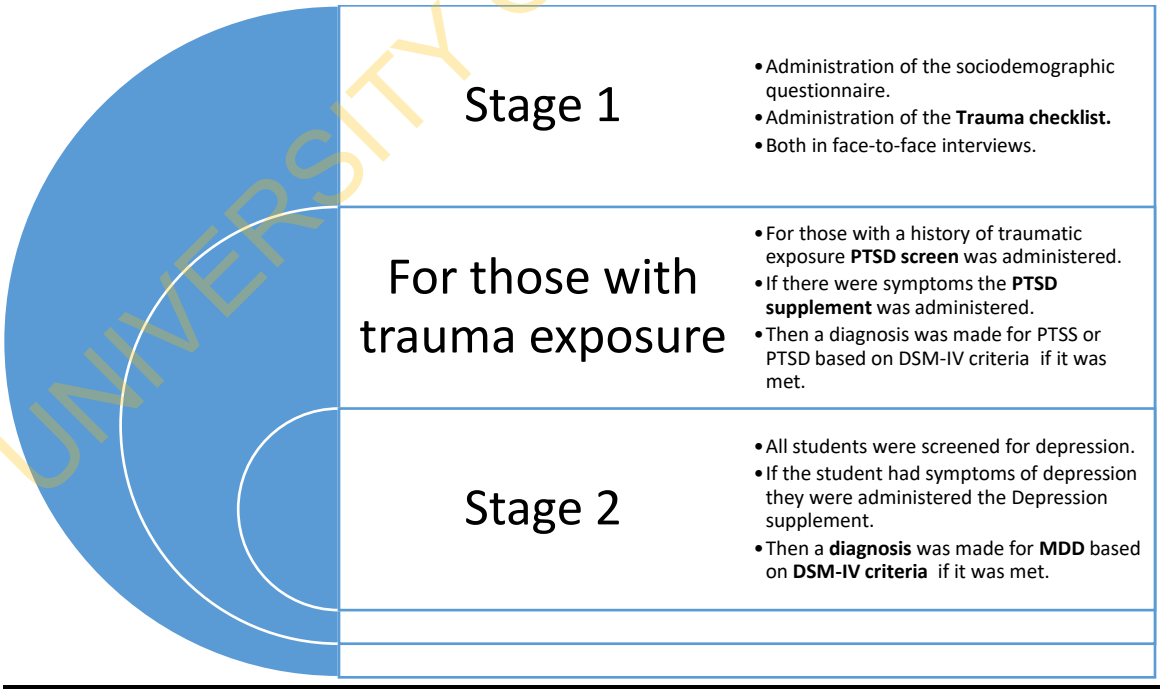
screen items within the last six months qualified the respondent to be asked the Supplement questions in the PTSD module. After this a diagnosis of 'No PTSD', 'Sub threshold PTSD (PTSS)' or 'PTSD' based on the DSM-IV criteria was given.

In the second stage all students were screened for Depression. Those that had at least one symptom on the depression screen were administered the supplement module of the KSADS-PL. The data was collected using face to face interviews done in English during school hours fixed by the principals. Both stages of the interview were conducted on the same day. Most students in the SSS3 arms of all the schools were writing their mock examinations, thus only few of the SSS 3 students selected could be interviewed. Due to limited time given for contact with the students overall, only 536 of the proposed 600 selected students were interviewed by the investigator. A total of 64 respondents could not be interviewed as the time allowed for contact with the respondents had elapsed. The process of data collection is illustrated in figure 5.

FIGURE 5: THE PROCESS OF THE DATA COLLECTION



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4.10 DATA MANAGEMENT

The data obtained from the field were cleaned and coded. This was entered into the Statistical Package for Social Sciences, version 21 (SPSS-21) for windows for analysis. Descriptive statistics were calculated for all continuous variables. These included the mean, standard deviation and percentages. Frequency distribution tables and cross tabulations were generated for the appropriate variables. Multiple logistic regression analysis of the sociodemographic variables found to be significant on Chi-square analysis was done for posttraumatic stress symptoms as well as for depression. This was to identify independent predicting variables with their calculated odds ratios, at 95.0 % confidence interval (CI). All statistically significance tests were carried out at 5% level of probability ($p < 0.05$).

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CHAPTER FIVE

RESULTS

5.1 SOCIODEMOGRAPHIC CHARACTERISTICS OF THE STUDY SAMPLE

A total of 536 students were involved in the study comprising 277 (51.9%) boys and 259 (48.1%) girls from four public and two private schools. Three hundred and thirty-five (335) students were from public schools, while 201 were from private schools. All the schools were located within Sabon gari LGA of Zaria in North-west Nigeria. See table 1.

5.1.1 Class distribution of the students

About a quarter of the students were in senior secondary 2 (24.6%) while the others were spread across all the classes. The ages of the students ranged from 10 to 29 years for both sexes with a mean age of 15.8 (SD= ± 3.0) years. More than half of the students (58.2%) were aged between 15 to 19 years and approximately 10% were 20 years and above. The number of males was slightly higher (51.9%) than that of females. The predominant religion practiced was Islam (70.1%) and largest ethnic group were the Hausa-Fulani (57.1%). Majority of the students (84 %) currently lived with both parents and had never (68.5%) lived with anyone else. See table 1.

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TABLE 1: SOCIODEMOGRAPHIC CHARACTERISTICS OF THE STUDENTS

N= 536

Variable	Frequency	Percentage (%)
Class		
JSS 1	58	10.8
JSS 2	81	15.1
JSS 3	98	18.3
SSS 1	97	18.1
SSS 2	132	24.6
SSS 3	70	13.1
Gender		
Male	278	50.1
Female	258	48.1
Age of students (years)		
10-14	174	32.5
15-19	312	58.2
20+	50	9.3
Religion		
Christianity	160	29.9
Islam	376	70.1
Ethnicity		
Hausa/ Fulani	306	57.1
Igbo	34	6.3
Yoruba	81	15.1
Others	115	21.5
Current living status		
Both parents	450	84.0
Single parent	34	6.3
Others	52	9.7

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5.1.2 Sociodemographic characteristics of the student's parents.

About 89.7% of the student's parents were married. Majority of the students' fathers were literate (90.7%) and employed (90.5%). The level of education among the respondent's fathers varied with almost half having tertiary education (45.4%). Majority of fathers were either professionals such as doctors, engineers and businessmen or traders. Thirty-two (6.0%) of the fathers were dead, leaving a total of 504.

About 84% of the mothers were literate of which about half (47.9%) had secondary school education. Over half (63.9%) were employed. About 10 (1.9%) of the mothers were dead, this was taken into consideration during the computation of employment status and occupation. See table 2.

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TABLE 2: SOCIODEMOGRAPHIC CHARACTERISTICS OF THE STUDENT'S PARENTS

N=536

Variable	Frequency	Percentage (%)
Parents marital status		
Married	481	89.7
Separated/Divorced	16	3.0
Widowed	39	7.3
Literacy status of father		
Literate	486	90.7
Not literate	49	9.3
Educational level of father		
Uneducated		
Primary	31	6.2
Secondary	197	39.1
Tertiary	229	45.4
Employment status of father		
Employed	485	90.5
Unemployed	19	3.5
Deceased	32	6.0
Occupation of father		
Professionals	181	33.8
Traders	162	30.2
Craft related	65	12.1
Others	128	23.9
Literacy status of mother		
Literate	450	84.0
Not literate	86	16.0
Educational level of mother		
Uneducated	86	16.0
Primary	52	9.7
Secondary	256	47.8
Tertiary	142	26.5
Employment status of mother		
Employed	336	62.7
Unemployed	190	35.4
Deceased	10	1.9
Occupation of mother		
Professionals	102	19.0
Traders	173	32.3
Housewives	194	36.2
Others	67	12.5

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5.1.3 Pattern of psychoactive substance use among the student's parents.

Sixteen (3.0%) of the respondents parents took alcohol, of which 3 (18.8%) heavy drinkers. Eight of the students' parents (1.5%) smoked cigarettes. None of the students' parents used illicit substances. See table 3.

TABLE 3: PATTERN OF PSYCHOACTIVE SUBSTANCE USE AMONG THE PARENTS

N=536

Variable	Frequency	Percentage (%)
Alcohol		
Yes	16	3.0
Heavy drinking (n=16)		
Yes	3	18.8
Smoking		
Yes	8	1.5

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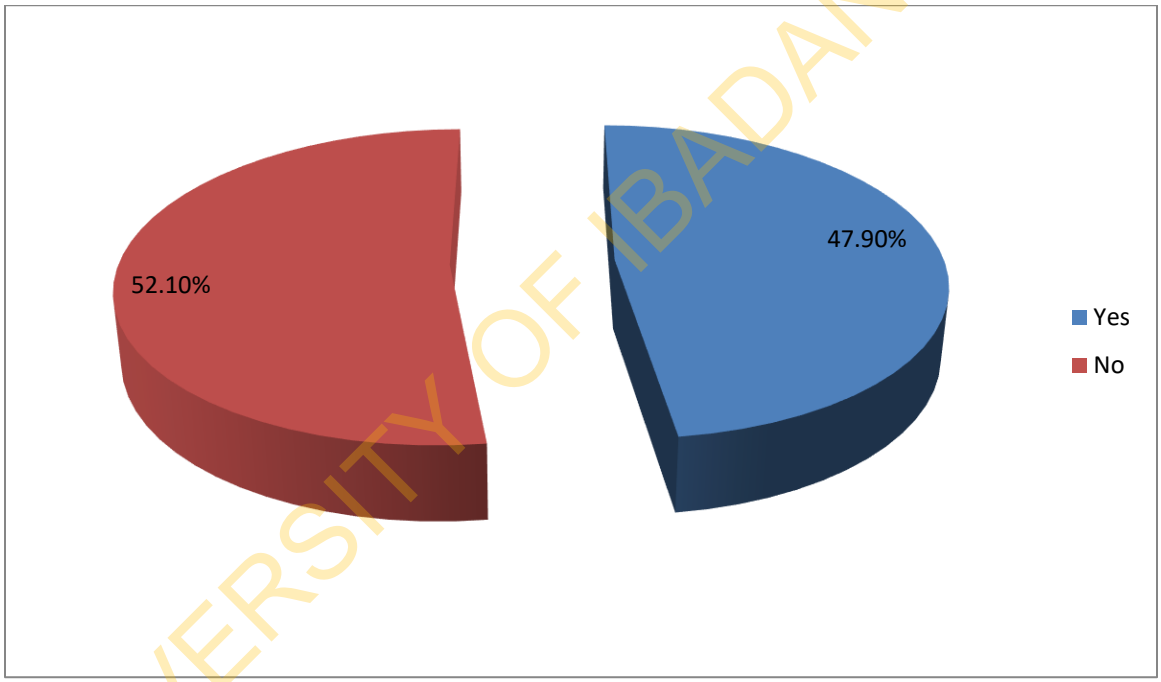
5.2 PREVALENCE AND PATTERN OF EXPOSURE TO TRAUMATIC EVENTS

5.2.1 Exposure to traumatic events.

Figure 1 below reveals that, almost half (47.9%) of all the respondents had experienced a traumatic event. The proportion was similar for both public (47.2%) and private schools (49.3%).

FIGURE 6: GENERAL DISTRIBUTION OF STUDENTS BY EXPOSURE TO TRAUMATIC EVENT(S).

N=536



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5.2.2 Types of traumatic events students were exposed to.

Of those who reported that they had experienced a traumatic event the most frequent event specified was receiving traumatic news (18.5%), of which the commonest was about the death of a close relative. This was followed by being physically abused by their parents/guardians (13.6%), and involvement in or witnessing a fire outbreak (11.9%). Some students experienced more than one traumatic event. See table 4 below. About 2.8% of the students had witnessed mob assaults during the post-election crisis of 2011, and 1.1% had been direct victims of the Zaria bomb blast of 2012.

TABLE 4: TYPES OF TRAUMATIC EVENTS EXPERIENCED BY STUDENTS (N=536)

Traumatic event	Frequency	Percentage (%)
Car accident	25	4.7
Other forms of accidents	53	9.9
Fire	64	11.9
Witnessed a natural disaster (flood)	8	1.5
Victim of a violent crime	15	2.8
Confronted with traumatic news	99	18.5
Witnessed domestic news	31	5.8
Suffered physical abuse	73	13.6
Suffered sexual abuse	12	2.2
Witnessed other forms of traumatic events	6	1.1

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5.2.3 Presence of symptoms following exposure to traumatic event(s).

About 7.8% of the students that had a history of exposure to traumatic event(s) developed symptoms lasting for more than a month. Another 40.1% had a history of exposure to a traumatic event, but did not develop PTSS and over half (52.1%) 2.1% had no history of exposure to traumatic event(s). See figures 7 and 8.

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FIGURE 7: PRESENCE OF SYMPTOMS FOLLOWING EXPOSURE TO TRAUMATIC EVENT(S) [n=257]

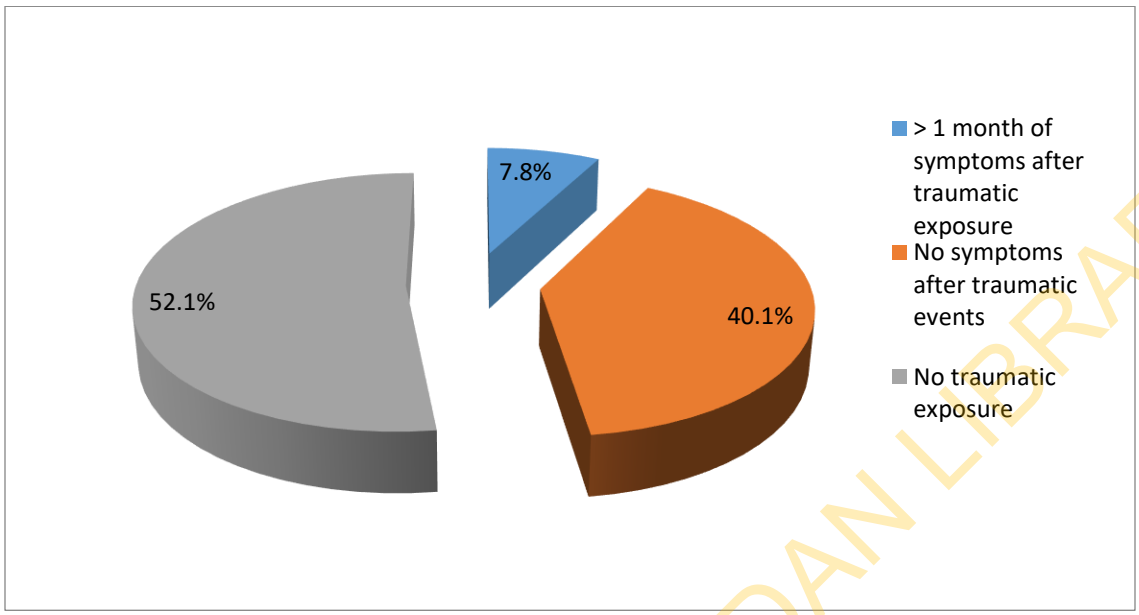
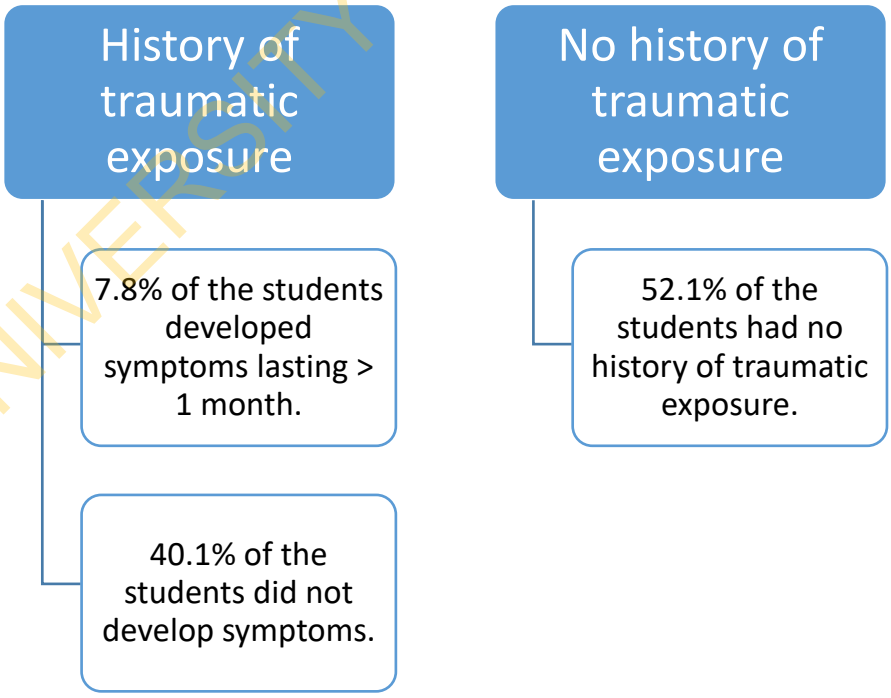


FIGURE 8: PRESENCE OF SYMPTOMS FOLLOWING EXPOSURE TO TRAUMATIC EVENT(S) [n=257]



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5.2.4 Types of posttraumatic stress symptoms elicited in the students

Table 5 shows the different types of posttraumatic stress symptoms. Majority of the students experienced distress elicited by reminders of the traumatic event (15.6%), experienced physiologic reactivity (14.8%) as a result of the traumatic event and avoided reminders and situations associated with the traumatic event (14.4%). Forty-two (16.3%) had the symptoms for over a month. A larger number of females compared to males developed symptoms of PTSS. For example 19.9% of females compared to 8.9% of males experienced symptoms of distress on exposure to similar stimuli as the traumatic event, 17.9% of females compared to 9.9% of males admitted to physiologic reactivity that were as a result of exposure to the traumatic event, also 17.9% of the females compared to males experienced the need to avoid reminders or situations associated with the traumatic event. See table 5.

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TABLE 5: TYPES OF POSTTRAUMATIC STRESS SYMPTOMS ELICITED IN THE STUDENTS (n=257)

Variable	Frequency n (%)		Frequency Females n (%)		Frequency Males n (%)	
Dissociative episodes	24	(9.3%)	17	(10.9%)	7	(6.9%)
illusions	11	(4.3%)	8	(5.1%)	3	(3.0%)
Hallucinations	7	(2.7%)	5	(3.2%)	2	(2.0%)
Distress elicited by exposure to similar stimuli	40	(15.6%)	31	(19.9%)	9	(8.9%)
Avoidance of reminders or situations	37	(14.4%)	28	(17.9%)	9	(8.9%)
Inability to recall important aspects	6	(2.3%)	4	(2.6%)	2	(2.0%)
Diminished interest in pleasurable activities	4	(1.6%)	2	(1.3%)	2	(2.0%)
Feelings of detachment or estrangement	9	(3.5%)	8	(5.1%)	1	(1.0%)
Restricted affect	2	(0.8%)	1	(0.6%)	1	(1.0%)
Sense of foreshortened future	12	(4.7%)	10	(6.4%)	2	(2.0%)
Difficulty concentrating	3	(1.2%)	2	(1.3%)	1	(1.0%)
Hypervigilance	11	(4.3%)	9	(5.8%)	2	(2.0%)
Exaggerated startle response	12	(4.7%)	9	(5.8%)	3	(3.0%)
Physiologic reactivity	38	(14.8%)	28	(17.9%)	10	(9.9%)
Impaired social Interaction	2	(0.8%)	1	(0.6%)	1	(1.0%)
Impaired family interaction	1	(0.4%)	-	-	1	(1.0%)
Impaired school activities	6	(2.3%)	4	(2.6%)	2	(2.0%)
Symptom >1 month	42	(16.3%)	33	(21.2%)	9	(8.9%)
No symptoms identified	215	(83.7%)	123	(78.8%)	92	(91.1%)

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5.2.5 Association between exposure to traumatic event and sociodemographic characteristics of the students.

More females reported having experienced traumatic exposure (60.1%) when compared to males (36.7%), ($p<0.01$). Students from 'other ethnic' groups (56.1%) who were minority tribes within Kaduna state had a slightly higher proportion reporting traumatic exposure when compared to the other ethnic groups, the least being the Hausas (41.1%), ($p= 0.004$. More of the Christian students (57.5%) had been exposed to traumatic events than their Muslim (43.9%) counterparts, ($p=0.004$). See table 6.

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TABLE 6: ASSOCIATION BETWEEN EXPOSURE TO A TRAUMATIC EVENT AND SOCIODEMOGRAPHIC CHARACTERISTICS OF STUDENTS

N=536

Variable	Traumatic exposure		Total	X^2	p value
	Yes (%)	No (%)			
Class					
JSS	117 (49.4)	120 (50.6)	237 (100)	0.343	0.558
SSS	140 (46.8)	159 (53.2)	299 (100)		
Age (years)					
<15	90 (51.7)	84 (48.3)	174 (100)	1.473	0.479
15-19	144 (46.2)	168 (53.8)	312 (100)		
20+	23 (46.0)	27 (54.0)	50 (100)		
Sex					
Male	102 (36.7)	176 (63.3)	278 (100)	29.325	**<0.001***
Females	155 (60.1)	103 (39.9)	258 (100)		
Ethnicity					
Hausa	118 (41.1)	169 (58.9)		11.673	**0.009***
Igbo	19 (55.9)	34 (100)			
Yoruba	44 (54.3)	81 (100)			
Others	76 (56.7)	134 (100)			
Religion					
Christian	92 (57.5)	68 (42.5)	160 (100)	8.339	**0.004***
Islam	165(43.9)	211 (56.1)	376 (100)		

***significant**

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5.2.6 ASSOCIATION BETWEEN EXPOSURE TO A TRAUMATIC EVENT AND SOCIODEMOGRAPHIC CHARACTERISTICS OF THE PARENTS

Table 6 below shows the association between exposure to a traumatic event and sociodemographic characteristics of the parents. A higher proportion of students whose mothers were literate reported traumatic exposure (50. 7%), compared to those whose mothers were not literate (33.7%), (p=0.004). A higher proportion of respondents (42.0%), (p=0.033) whose mothers were employed reported experiencing a traumatic event. A significantly higher proportion of students whose parents were not married (72.7%) reported traumatic exposure compared to those whose parents were married (45.1%), (p<0.001). See table 7.

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TABLE 7: ASSOCIATION BETWEEN EXPOSURE TO A TRAUMATIC EVENT AND SOCIODEMOGRAPHIC CHARACTERISTICS OF PARENTS

N= 536

Variable	Traumatic exposure		Total (%)	X^2	p value
	yes	No			
Literacy status of father					
Literate	239 (49.2)	247 (50.8)	487 (100)	2.761	0.097
Not literate	18 (36.7)	31 (63.3)	49 (100)		
Educational status					
Primary	19 (55.9)	15 (44.1)	34 (100)		0.322
Secondary	95 (45.5)	114 (54.5)	209 (100)		
Tertiary	125 (51.4)	118 (48.6)	243 (100)		
Employment status of father					
Employed	226 (46.6)	259 (53.5)	485 (100)	3.721	0.054
Unemployed	31 (60.8)	20 (39.2)	51 (100)		
Literacy					
Literate	228 (50.7)	222 (49.3)	450 (100)	8.307	**0.004***
Not literate	29 (33.7)	57 (66.3)	86 (100)		
Educational level of mother					
Primary	30 (57.7)	22 (42.3)	52 (100)	4.433	0.109
Secondary	136 (53.1)	120 (46.9)	256 (100)		
Tertiary	62 (43.7)	80 (56.3)	142 (100)		
Employment status of mother					
Employed	173 (51.5)	163 (48.5)	336 (100)	4.522	**0.033***
Unemployed	84 (42.0)	116 (58.0)	200 (100)		
Parents marital status					
Married	217 (45.1)	264 (54.9)	481 (100)	15.079	**<0.001***
Others	40 (72.7)	15 (27.3)	55 (100)		

***significant**

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5.2.7 Association between exposure to a traumatic event, family profile and living conditions of students.

Association between exposure to traumatic events, family and living conditions of respondents is presented in table 7 below. A higher proportion of students who were not presently living with their parents reported traumatic exposure (70.9%) compared to those who presently lived with their parents (43.6%), ($p<0.001$). Also, respondents who were not raised by their parents had a significantly higher proportion reporting traumatic exposure (70.9%) compared to those who were raised by their parents (43.6%). The results also showed that the percentage of students traumatised increased as the 'number of other people lived with increased', that is from 39.8 to 70.6%, ($p<0.001$). See table 7 below.

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TABLE 8 a: ASSOCIATION BETWEEN TRAUMATIC EXPOSURE, FAMILY PROFILE AND LIVING CONDITIONS OF STUDENTS

N=536

Variable	Traumatic exposure		Total (%)	X^2	p value
	Yes (%)	No (%)			
Number of siblings					
<5	93 (52.8)	83 (47.2)	176 (100)	2.658	0.265
5-9	116 (46.2)	135 (53.8)	251 (100)		
10+	48 (44.0)	61 (56.0)	109 (100)		
Number of mother's children					
<5	65 (52.0)	60 (48.0)	125 (100)	2.029	0.363
5-9	171 (47.6)	188 (52.4)	359 (100)		
10+	21 (40.4)	31 (59.6)	52 (100)		
Number of father's children					
<5	49 (52.1)	45 (47.9)	94 (100)	1.641	0.801
5-9	143 (48.3)	153 (51.7)	296 (100)		
10+	65(44.5)	81 (55.5)	146 (100)		
Birth order					
First child	51 (45.9)	60 (54.1)	111 (100)	1.641	0.801
Second child	47 (50.5)	46 (49.5)	93 (100)		
Third child	34 (48.6)	36 (51.4)	70 (100)		
Fourth child	24 (41.4)	34 (58.6)	58 (100)		
Fifth child and above	101 (49.5)	103 (50.5)	204 (100)		
Birth order (mothers children)					
First child	54 (45.8)	64 (54.2)	118 (100)	2.159	0.707
Second child	53 (48.2)	57 (51.8)	110 (100)		
Third child	40 (48.8)	42 (51.2)	82 (100)		
Fourth child	27 (41.5)	38 (58.5)	65 (100)		
Fifth child and above	50 (45.5)	78 948.4)	161 (100)		

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TABLE 8 b: ASSOCIATION BETWEEN TRAUMATIC EXPOSURE, FAMILY PROFILE AND LIVING CONDITIONS OF STUDENTS (CONTINUED)

N=536

Variable	Traumatic exposure		Total (%)	x^2	p value
	Yes	No			
Birth order (fathers children)					
First child	50 (45.5)	60 (54.5)	110 (100)	2.203	0.698
Second child	47 (50.5)	46 (49.5)	93 (100)		
Third child	34 (47.9)	37 (52.1)	71 (100)		
Fourth child	24 (40.7)	35 (59.3)	59 (100)		
Fifth child and above	102 (50.2)	101 (49.8)	203 (100)		
Present living status					
Parents	196 (43.6)	254 (56.4)	450 (100)	21.679	<0.001*
Others	61 (70.9)	25 (29.1)	86 (100)		
Raised by					
Parents	233 (46.5)	268 (53.5)		6.381	0.012*
Others	24 (68.6)	11 (31.4)			
Other persons lived with					
None	146 (39.8)	221 (60.2)	367 (100)	31.280	<0.001*
One other person	99 (65.1)	53 (34.9)	152 (100)		
Two or more people	12 (70.6)	5 (29.4)	17 (100)		

***significant**

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5.2.8 Predictors of traumatic exposure.

After adjusting for other variables, all the sociodemographic variables associated with traumatic exposure were entered into a logistic regression analysis. Sex of respondent (p=<0.001), current guardian (p=0.018), and 'number of other persons' the respondents had ever lived with (p=0.021) were found to be strongly and independently significant in predicting traumatic exposure. See table 8.

TABLE 9: PREDICTORS OF TRAUMATIC EXPOSURE

N=536

Variable	Odds ratio	β	p value	Confidence Interval
Sex of respondent	1.949	0.668	**0.001***	1.308-2.905
Current guardian	0.280	0.380	**0.024***	1.038-1.686
Parents marital status	1.433	0.360	0.112	0.920-2.233
Number of other people lived with	1.650	0.501	**0.012***	1.116-2.440
Ethnicity	0.677	-0.047	0.677	0.521-1.745
Religion	1.455	0.375	0.135	0.890-2.378

***significant**

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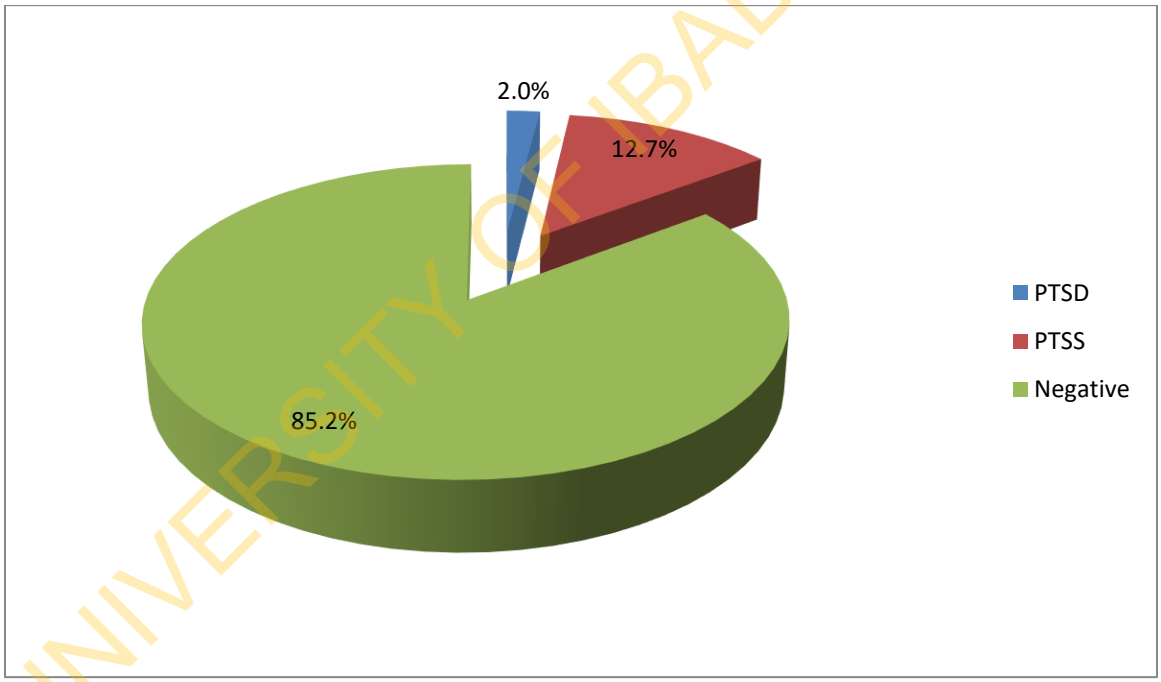
5.3 PREVALENCE OF POSTTRAUMATIC STRESS SYMPTOMS AMONG STUDENTS

5.3.1 Prevalence of posttraumatic stress symptoms among respondents

The prevalence of PTSS and PTSD among students who had experienced a traumatic event(s) is shown in the figure below. Majority of the students did not have symptoms of PTSS nor PTSD (85.2%) while 12.7% and 2.0% had symptoms of PTSS and PTSD respectively. See figure 9.

FIGURE 9: PREVALENCE OF POSTTRAUMATIC STRESS SYMPTOMS AND POSTTRAUMATIC STRESS DISORDER AMONG THOSE THAT HAD EXPERIENCED A TRAUMATIC EVENT

(N=257)



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5.3.2 Association between posttraumatic stress symptoms and sociodemographic characteristics of students.

Table 10 shows that a higher proportion of females had symptoms of PTSS (17.4%) compared to males (8.8%), (p=0.052).

TABLE 10: ASSOCIATION BETWEEN POSTTRAUMATIC STRESS SYMPTOMS AND SOCIODEMOGRAPHIC CHARACTERISTICS OF STUDENTS

n= 257

Variable	PTSS		Total	X^2	p value
	Yes (%)	No (%)			
Class					
Junior secondary	15 (12.8)	102 (87.2)	117(100)	0.251	0.616
Senior secondary	21 (15.0)	119 (85.0)	140 (100)		
Age					
< 15	12 (13.3)	78 (86.7)	90 (100)	0.254	0.881
15-19	20 (13.9)	124 (86.1)	144 (100)		
20+	4 (17.4)	19 (82.6)	23 (100)		
Sex					
Male	9 (8.8)	93 (91.2)	102 (100)	3.74	0.052
Female	27 (17.4)	128 (82.6)	155 (100)		
Ethnicity					
Hausa	11 (9.3)	107 (90.7)	118 (100)	5.278	0.153
Igbo	5 (26.3)	14 (73.7)	19 (100)		
Yoruba	7 (15.9)	37 (84.1)	44 (100)		
Others	13 (17.1)	63 (82.9)	76 (100)		
Religion					
Christianity	15 (16.3)	77 (83.7)	92(100)	0.195	0.907
Islam	21 (12.7)	144 (87.3)	165 (100)		

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5.3.3 Association between posttraumatic stress symptoms and the sociodemographic characteristics of the student's parents

Table 11 shows the association between posttraumatic stress symptoms and the sociodemographic characteristics of the students' parents.

TABLE 11: ASSOCIATION BETWEEN POSTTRAUMATIC STRESS SYMPTOMS AND THE SOCIODEMOGRAPHIC CHARACTERISTICS OF THE STUDENT'S PARENTS

n=257

Variable	PTSS		Total	X^2	p value
	Positive	Negative			
Literacy status of father	34 (14.2)	205 (85.8)	239 (100)	0.135	0.713
Literate	2 (11.1)	16 (88.9)	18 (100)		
Not literate					
Educational level of father					
Secondary and less	17 (14.2)	97 (85.1)	114 (100)	0.084	0.772
Tertiary	17 (13.6)	108 (86.4)	125 (100)		
Employment status of father					
Employed	33 (14.6)	193 (85.4)	226 (100)	0.549	0.459
Unemployed	3 (9.7)	28 (90.3)	31 (100)		
Literacy status of mother					
Literate	32 (14.0)	196 (86.0)	228 (100)	0.001	0.972
Non literate	4 (13.4)	55 (88.7)	166 (100)		
Educational level of mother					
Secondary or less	25 (15.1)	141 (84.9)	166 (100)	0.532	0.466
Tertiary	7 (11.3)	55 (88.7)	62 (100)		
Employment status of mother					
Employed	26 (15.0)	147 (85.0)	173 (100)	0.458	0.498
Unemployed	10 (11.9)	74 (88.1)	84 (100)		
Parents marital status					
Married	32 (14.7)	185 (85.3)	217 (100)	0.632	0.427
Other	4 (10.0)	36 (90.0)	40 (100)		

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5.3.4 Association between posttraumatic stress symptoms, family profile and living conditions of the students.

A higher proportion of students who lived with other people had symptoms of PTSS (20.7%) compared to those who had not lived with other people (8.9%), (p=0.007). See table 12.

TABLE 12: ASSOCIATION BETWEEN POSTTRAUMATICSTRESS SYMPTOMS, FAMILY PROFILE AND LIVING CONDITIONS OF THE STUDENTS

n=257

Variable	PTSS		Total (%)	X^2	p value
	Positive (%)	Negative (%)			
Number of siblings					
<5	13 (14.0)	80 (86.0)	93 (100)	2.612	0.271
5-9	13 (11.20	103 (88.8)	116 (100)		
10+	10 (20.8)	38 (79.2)	48 (100)		
Number of mother's children					
<5	8 (12.3)	57 (87.7)	65 (100)	0.209	0.648
5+	28 (14.6)	164 (85.4)	192 (100)		
Number of fathers children					
<5	5 (10.2)	44 (89.9)	49 (100)	2.766	0.251
5-9	18 (12.6)	125 (87.4)	143 (100)		
10+	13 (20.0)	52 (80.0)	65 (100)		
Birth order					
First-third child	18 (13.6)	114 (86.4)	132 (100)	0.031	0.860
Fourth and above	18 (14.4)	107 (85.6)	125 (100)		
Birth order of father's children					
First-third child	21 (14.3)	126 (85.7)	147(100)	0.022	0.882
Fourth and above	15 (13.6)	95 (86.4)	110 (100)		
Present living status					
Parents	18 (13.7)	113 (86.3)	131 (100)	0.016	0.900
Others	18 (14.3)	108 (100)	126 (100)		
Raised by					
Parents	34 (14.6)	199 (85.4)	233 (100)	0.708	0.400
Others	2 (8.3)	22 (91.7)	24 (100)		
Lived with other people					
Yes	23 (20.7)	88 (79.3)	111 (100)	7.310	**0.007***
No	13 (8.9)	133 (91.1)	146 (100)		

***significant**

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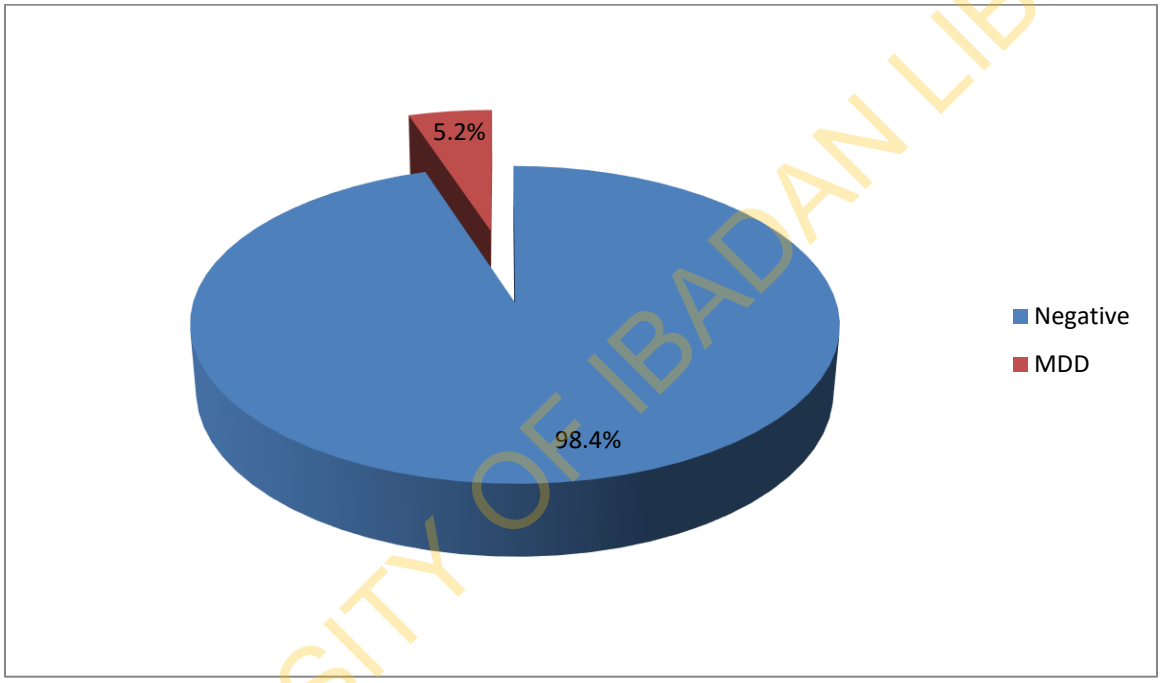
5.4 PREVALENCE AND PATTERN OF DEPRESSION``````````````````

5.4.1 Prevalence of depression.

All respondents were assessed for depression, only 5.2% met the diagnostic criteria for a Major Depressive disorder, the rest (94.8%) did not the disorder. See figure 4 below.

FIGURE 10: PREVALENCE OF DEPRESSION AMONGST STUDENTS.

N=536



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5.4.2 Association between depression and sociodemographic characteristics of students

Table 13 shows the association between depression and sociodemographic characteristics of students.

TABLE 13: ASSOCIATION BETWEEN DEPRESSION AND SOCIODEMOGRAPHIC CHARACTERISTICS OF STUDENTS

N=536

Variable	Depression		Total (%)	X^2	*p* value
	Positive (%)	Negative (%)			
Class					
Junior secondary	12 (5.1)	225 (94.9)	237 (100)	0.025	0.875
Senior secondary	16 (5.4)	282 (94.6)	298 (100)		
Age					
<15	9 (5.2)	165 (94.8)	174 (100)	2.793	0.248
15-19	14 (4.5)	298 (95.5)	312 (100)		
20+	5 (10.2)	44 (100)	49 (100)		
Sex					
Male	11 (4.0)	266 (96.0)	277 (100)	1.846	0.174
Female	17 (6.6)	241 (93.4)	258 (100)		
Ethnicity					
Hausa	14 (4.9)	272 (100)	286 (100)	0.142	0.706
Others	14 (5.6)	235 (94.4)	249 (100)		
Religion					
Christianity	10 (6.3)	150 (93.8)	160 (100)	0.475	0.491
Islam	18 (4.8)	357 (95.2)	375 (100)		

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5.4.3 Association between depression and sociodemographic characteristics of parents.

A significantly higher proportion of respondents whose parents were not married had depression (12.7%) compared to those parents were married (4.4%), (p=0.008). See table 14.

TABLE 14: ASSOCIATION BETWEEN DEPRESSION AND SOCIODEMOGRAPHIC CHARACTERISTICS OF PARENTS

Variable	Depression		Total (%)	X^2	*p* value
	Positive (%)	Negative (%)			
Literacy status of father					
Literate	26 (5.3)	460 (94.7)	486 (100)	0.123	0.726
Not literate	2 (4.2)	46 (95.8)	48 (100)		
Educational Level of father					
Secondary and less	14 (5.8)	229 (94.2)	243 (100)	0.163	0.687
Tertiary	12 (4.9)	231 (95.1)			
Employment status of father					
Employed	23 (4.8)	461 (95.2)	484 (100)	2.347	0.123
Unemployed	5 (9.8)	46 (90.2)	51 (100)		
Literacy status of mother					
Literate	23 (4.8)	427 (94.9)	450 (100)	0.086	0.770
Not literate	5 (5.9)				
Educational level of mother					
Secondary and less	19 (5.7)	317 (94.3)	336 (100)	0.323	0.570
Tertiary	9 (4.5)	190 (95.5)	199 (100)		
Parent's marital status					
Married	21(4.4)	459 (95.6)	480 (100)	6941	**0.008***
Others	7 (12.7)	48 (87.3)	55 (100)		

***significant**

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5.4.4 Association between depression, family profile and living conditions of students.

Students whose fathers had 10 children or more (9.0%) had a higher proportion with depression compared with those with less than 10 children (3.8%), (p=0.018). A higher proportion of students who had lived with other people had a major depressive disorder (10.5%) compared to those who had not lived with other people (4.2%), (p=0.017). See table 15.

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TABLE 15: ASSOCIATION BETWEEN DEPRESSION, FAMILY PROFILE AND LIVING CONDITIONS OF STUDENTS

Variable	Depression		Total (%)	X^2	P value
	Positive (%)	Negative (%)			
Number of siblings					
<5	5 (2.8)	171 (97.2)	176 (100)	5.445	0.066
5-9	13 (5.2)	237 (94.8)	250 (100)		
10+	10 (9.2)	99 (90.8)	109 (100)		
Number of mother's children					
<5	23 (4.8)	460 (95.2)	483 (100)	2.230	0.135
5+	5 (9.6)	47 (90.4)	52 (100)		
Number of father's children					
<10	15 (3.8)	375 (96.2)	390 (100)	5.585	**0.018***
10+	13 (9.0)	132 (91.0)	145 (100)		
Birth order					
First –Third child	14 (5.1)	260 (94.9)	274 (100)	0.017	0.895
Fourth child and above	14 (5.4)	247 (94.6)	261 (100)		
Birth order for mother's children					
First –Third child	15 (4.8)	295 (95.2)	310 (100)	0.232	0.630
Fourth child and above	13 (5.8)	212 (94.2)	225(100)		
Birth order for father's children					
First –Third child	14 (5.1)	260 (94.9)	274 (100)	0.017	0.895
Fourth child and above	14 (5.4)	247 (94.6)	261 (100)		
Present living status					
Parents	19 (4.2)	430 (95.8)	449 (100)	5.655	**0.017***
Others	9 (10.5)	77 (89.5)	86 (100)		
Raised by					
Parents	25 (5.0)	475 (95.0)	500 (100)	0.841	0.359
Others	3 (8.6)	32 (91.4)	35 (100)		
Lived with other people					
Yes	13 (7.7)	156 (92.3)	169 (100)	3.011	0.083
No	15 (4.1)	351 (95.9)	366 (100)		

***significant**

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5.4.5 Predictors of a major depressive disorder

Significant predictors of a major depressive disorder on logistic regression included number of father's children, and present living status of the respondents. Students whose fathers had less than 10 children were about twice less likely to have depression compared to those who were not presently living with their parents (OR=0.354, 95% CI= 0.153-0.819). See table 16.

TABLE 16: PREDICTORS FOR DEPRESSION

Variable	Odds ratio	P value	95% CI
Number of fathers children			
<10	0.384	0.016	0.177-0.836
10+	1		
Present living status			
Parents	0.354	0.015	0.153-0.819
Others	1		

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5.5 ASSOCIATION BETWEEN DEPRESSION AND POSTTRAUMATIC STRESS SYMPTOMS.

A higher proportion of students who had posttraumatic stress symptoms, had depression (32.1%) compared to those who did not have depression (5.3%), (p< 0.001).See table 17.

TABLE 17: ASSOCIATION BETWEEN MAJOR DEPRESSIVE DISORDER AND POSTTRAUMATIC STRESS SMPTOMS

Variable	PTSS		Total (%)	X^2	P value
	Positive (%)	Negative (%)			
Depression positive	9 (32.1)	19 (67.9)	28 (100)	30.405	**<0.001***
Negative	27 (5.3)	480 (94.7)	507 (100)		

***significant**

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CHAPTER SIX

DISCUSSION

6.1 SOCIODEMOGRAPHIC CHARACTERISTICS

This study explored the prevalence and correlates of posttraumatic stress symptoms (PTSS) among 536 secondary school students in Zaria. The students were found to be aged between 10 and 29 years of age in classes JSS 1-SSS 3. The age range obtained was similar to findings from similar studies in other parts of the country (Oyerinde *et al.*, 2013) where students are found beyond the age of adolescence. In Northeast, Nigeria, Abdulmalik (2009) obtained an age range of 13 to 22 years in a study on depression in in-school adolescents and in schools in the South – west Omigbodun *et al.*, (2008) reported an age range of 10 to 25 years in a study on traumatic events and depressive symptoms in in-school adolescents. The mean age obtained in this study was 15.8 (SD= ± 2.7) years, this is also similar to the mean ages of between 15.3 years and 16.9 years reported in other studies on secondary school students other parts of Nigeria (Omigbodun *et al.*, 2008, Abdulmalik, 2009 Oshodi *et al.*, 2010, Audu, 2013). About 10% of the students were above 20 years of age in their final class similar to reports from the South-west where 19. 4% were aged between 18 and 25 years of age. An age of over 20 years of age in the final classes in the Northern Nigeria is not unusual, as children tend to be enrolled into school at a much older age when compared to the South. According to the National Bureau of Statistics (2010), children tend to be enrolled in school 3 to 4 years earlier in the South-west compared to the Northern part of the country. Thus the age characteristic of the sample drawn for the study appears to be representative of the secondary school population within Zaria and other Northern parts of Nigeria.

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There were 278 (51.9%) males, and 250 (48.1%) females. The selection of students reflects the gender ratio of the class registers. This indicates that slightly more males than females enrol in secondary schools in the study location. The preponderance of males is in keeping with studies done in South-West Nigeria (Audu, 2013, Abiodun, 1993, Gureje, et al., 1994). This could be due to the fact that in Nigeria, school enrolment for girls is lower (30%) than for boys and the dropout rate for girls higher [5.6%] (Nmadu et al. 2010, Education 2010, Audu, 2013). The reasons put forward for this were that parents preferred sending boys to school, because, culturally it is believed that they will maintain the family name and remain within the family. About three quarters (70.1%) of the students were Muslims, reflecting the strong Islamic composition of the Northern parts of Nigeria in sharp contrast to studies carried out in South-west Nigeria where Omigbodun *et al.,* (2008) reported two thirds (67.6%) of the adolescent population as Christians.

The parental literacy levels were higher for both males (90.7%) and females (84%) in this study compared to 87.7% reported in South-west Nigeria in studies carried out on adolescents (Statistics, 2010, Adewuya and Famuyiwa, 2007, Omigbodun *et al.,* 2008). This finding is also not in keeping with reports from surveys done in the Northern parts of the country that reported lower literacy rates of between 63.8 to 79.3% for its adult population. This could be due to the fact convenient sample of schools were selected and these are situated in the mostly metropolitan parts of Zaria, where there is a concentration of higher institutions such as the Ahmadu Bello University, the School of Aviation and numerous tertiary schools. Similarly the level of education among the respondent's parents varied with about half of the fathers having a tertiary education (45.4%) and a similar proportion of the mothers (47.9%) having secondary education. This again is in contrast to what was found by Audu (2013) in a study among adolescents in in

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the same region where it was reported that 32% of the fathers had a tertiary education and 17.5% of the mothers had a secondary school education. The findings in this study could again be explained by the convenient sample selection and the fact that Zaria the location of this study is home to a large number of educational institutions. The opportunity for formal education will be higher among its population. In addition half of the sample of students in this study was recruited from private fee-paying schools, which are afforded by educated and economically privileged parents. This would readily explain the large portion of highly educated parents in this study.

Majority of the respondents' parents were employed. The fathers were more likely to be either in the professional category of jobs, such as doctors or engineers (34.3%) or traders (30.6%), while the mothers were mostly housewives (36.1%) or traders (32.7%). This is similar to the pattern and prevalence of occupations of parents given by Audu (2013) in his study among adolescents in the same region in which the fathers were mostly either civil servants (35%) or traders (35%), while the mothers were predominantly traders.

6.2 PREVALENCE AND PATTERN OF EXPOSURE TO TRAUMATIC EVENTS

Global estimates for exposure to traumatic events among adolescents tend to vary widely. This may be due to the wide variation in the global distribution of situations which may increase the risk of exposure to traumatic events (Atilola, 2013). Events such as the recent Boko Haram bombings in Abuja on the 1st of May 2014, along with the kidnapping of 234 adolescent girls from a school in Chibouk, Borno state by a terrorist group in early April, 2014 are significant traumatic occurrences. These events are significant as it has been reported that rape, being tortured or being a victim of terrorism, and molestation are associated with highest probability of a life time PTSD diagnosis (Salazar et al., 2013).

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In this study half (49.7%) of the students reported having experienced a traumatic event. This was higher than what was reported in the Southern parts of Nigeria where prevalence rates of between 34 and 43.6 % was reported for exposure to traumatic events (Oladeji *et al.*, 2011, Omigbodun *et al.*, 2008). The rates are much lower compared to other countries such as South Africa (67-97%) and Kenya [85%] (Ensink *et al.*, 1997, Peltzer 1999, Seedat *et al.*, 2004, Oladeji *et al.*, 2011). This may indicate that individual or community violence is higher in those communities than they are in Zaria.

In some developed countries such as the United States, a prevalence of 60% has been reported for exposure to traumatic events in its adolescent population (McLaughlin et al., 2013). The higher rates reported in this study support global reports that show prevalence rates for exposure to traumatic events have increased over time (Mills *et al.*, 2011). The proportion of respondents exposed were almost the same for both public (47.2%) and private (49.3%) schools which is in keeping with reports from the Southern parts of Nigeria showing no difference in traumatic event exposure among public and private school students (Omigbodun *et al.*, 2008). About 49.4% of students that had experienced a traumatic event were in the junior secondary classes, while the remaining 46.8% were in the senior secondary classes. This is in contrast to reports from the South-western parts of the Nigeria in which higher rates were reported in older adolescents (63.5%) compared to the younger adolescents [36.5%] (Oladeji *et al.*, 2011). The reason suggested was a longer exposure risk associated with increasing age (Oladeji *et al.*, 2011). The commonest traumatic events reported were 'being confronted with traumatic news' (18.5%) about the death of a close relative (5.4%), and being physically abused by parents or guardians. This prevalence for these traumatic events were much lower than that reported by Omigbodun *et*

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al., (2008) and Oladeji *et al*., (2011) from studies on adolescents studies in the Southwest, where they found prevalence rates of 1.8-2.6% for traumatic news, and 1.5-2.5% for physical abuse.

It was however in contrast to reports from studies on adolescent populations done in South Africa and Kenya where the commonest forms of traumatic events among secondary school students were witnessing communal violence (63%) and being robbed (35%). This can be explained by the higher rates of community violence in these countries compared to Nigeria (Peltzer, 1999, Suliman et al., 2005).

In this study six, variables were identified as having an association with traumatic exposure, they were sex, religion, ethnicity, gender, current caregiver and number of other people lived with. However only three of the six associated factors were identified as strongly and independently predictors of PTSS. These were gender, current care giver, and the number of other persons the adolescent had ever lived with.

Gender was found to be a significant ($p<0.001$) predictor of exposure to traumatic events. Females were 1.9 times more likely than males to be exposed to a traumatic event in contrast to literature from South-west Nigeria, and other parts of the world where reports show little or no differences in trauma exposure between males and females (Omigbodun *et al.,* 2008, Gwadza *et al.,* 2007, Traut *et al.,* 2002, Giacona *et al.,* 1995, Oladeji *et al.,* 2011). A study on adolescents in the United States got similar results of females (7.3%) having higher rates of exposure compared to males (2.2%). Similar to findings in other parts of the country, females reported higher rates of sexual abuse. In this study all the reports of sexual abuse (2.2%) were by females, similar to other studies from the Northern as well as the South-west parts of the country that reported higher cases of sexual abuse (0.06-1.9%) amongst females (Bugaje et al., 2000, Gwadza *et al.,*

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2007, Omigbodun *et al.,* 2008 and Oladeji *et al.,* 2011). In other African countries such as South Africa and Kenya males were more likely to become victims of sexual abuse than females (Seedat et al., 2004). Sexual abuse has repeatedly been shown to be linked with the development of PTSD (Seedat et al., 2004).

A higher proportion of females (5.4%) reported being involved in car accidents compared to males. Females (18.1%) were also more likely to have been exposed to fire outbreaks compared to males. Though the values were much higher than the prevalence of between 1.7 and 5.8%were reported in the Southwest it also shoed these values were higher than the rates reported for males (Oladeji *et al*, Omigbodun *et al.*, 2008) on exposure to fire outbreaks.

With regards to marital status of the respondents parents it was found that significantly higher proportion of students whose parents were not were not married (72.7%) reported traumatic exposure compared to those whose parents were married (45.1%), ($p< 0.001$). This was similar to reports from studies on adolescents in Southwest Nigeria (Atilola *et al.,* 2013) and other parts of the world. Reports show that adolescents whose parents were divorced or separated were three times more likely to be exposed to traumatic events compared to adolescents from stable homes. This has been observed in various studies to be one of the most consistent correlates of traumatic exposure. A possible reason is that parental separation and divorce may be preceded by years of turmoil within the home resulting in alterations in family relationship leading to negative effects on the psychological wellbeing of the parents, this may increase the risk of exposure to inter-parental conflict (Amato and Booth, 1996, Rogers and Pryor, 1998; Demo and Cox, 2000, Atilola *et al.,* 2013 and Ford, 2013). Parental discord may also be associated with poor parental supervision exposing the child to other forms traumatic events such as sexual abuse, violent crimes and vehicular accidents (Atilola *et al.,* 2013). Inter-parental violence has been associated

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with the development of PTSD (Ford, 2013) as well as childhood behavioural problems (Marshal and Watt, 1999).

In this study who were not living with their parents (70.9%) had a higher prevalence of exposure to traumatic events compared to students that lived with both parents (43.4%). The study also showed that the higher the number of other persons the studentshad lived, the higher the chances for abuse (39.8-70.6%). This was found to be statistically significant (p=0.12). Similar results were obtained in adolescent populations in the US. Where it was observed that interpersonal violence was highest among adolescents not living with their biological parents (McLaughlin *et al.*, 2013). The higher prevalence reported by the minority groups (56.1%) mostly from ethnic groups in Kaduna state can be explained in terms of the on-going communal crisis in the Northern parts of the country. The prevalence of PTSS and PTSD were found to be 12.7% and 2% respectively. The prevalence for PTSS obtained in this study was higher than the rate of 2.7% reported by Oladeji *et al.*, (2011). However the prevalence rate of 2.4% for PTSD is similar to that reported by Oladeji *et al.*, 2011.

In this study adolescents who were not living with their parents (70.9%) had a higher prevalence of exposure to traumatic events compared to adolescents that lived with both parents (43.4%). The study also showed that the higher the number of other persons the adolescent had lived with the higher the chances for abuse (39.8-70.6%). This was found to be statistically significant (p=0.012). Similar results were obtained in adolescent populations in the US where it was observed that interpersonal violence was highest among adolescents not living with their biological parents (McLaughlin *et al.*, 2013).

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As regards ethnicity higher reports of traumatic exposure came from the minority groups (56.1%) which were mostly from Kaduna state. This can be explained in terms of the on-going communal crises in the Northern parts of the country.

6.3 PREVALENCE AND PATTERN OF POSTTRAUMATIC STRESS SYMPTOMS

The prevalence of PTSS and PTSD were found to be 12.7% and 2.0% respectively. The prevalence rate for PTSS obtained in this study was higher than the rate of 2.7% reported by Oladeji et al., (2011). However a prevalence rate of 2.4% was reported in by Oladeji et al., 2011 in her adolescent study which was similar with the rate of 2.0% reported in this study. Factors that were found to be predictors of PTSS and PTSD were living with people other than the adolescent's parents. The study showed that about 20.7% of the students that lived with people other than their parents had PTSS which was statistically significant. This figure although lower is in keeping with literature from developed countries such as the US that reported a prevalence rate of about 30% among older adolescents in foster care (Salazar *et al.*, 2013).

With regard to gender 17.4% of the females had PTSS compared to 8.8% of the males, though the values for the females appeared higher it was not significant (p=0.427). Studies from South western parts of the country and other African countries such as South Africa have also reported higher prevalence rates of PTSS and PTSD in their female adolescents compared to male adolescents these findings however were statistically significant (p=0.005).

Majority of the students experienced distress elicited by reminders of the traumatic event (15.6%), experienced physiologic reactivity (14.8%) as a result of the traumatic event and avoided reminders and situations associated with the traumatic event (14.4%). Forty-two (16.3%) had the symptoms for over a month. A larger number of females compared to males developed

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symptoms of PTSS. For example 19.9% of females compared to 8.9% of males experienced symptoms of distress on exposure to similar stimuli as the traumatic event, 17.9% of females compared to 9.9% of males admitted to physiologic reactivity that were as a result of exposure to the traumatic event, also 17.9% of the females compared to males experienced the need to avoid reminders or situations associated with the traumatic event. This supports the fact that female gender maybe the strongest predictor of trauma symptoms such as anxiety dissociation and depression. Reports from Oladeji et al., (2011) and other studies (Giaconia, 1995, Cuffe, 1998) on adolescents have also reported more PTSS symptomatology among the females than their male counterparts.

6.4 PREVALENCE OF MAJOR DEPRESSIVE DISORDER

For Major depressive disorder this study reported a prevalence rate of 5.2%. Though the value was lower than the values of 12.9% obtained by Abdulmalik, (2009) in his study using adolescents in the North –east and 28.1% reported by Omigbodun et al., (2008) from her study on adolescents in part of the South-west. It is similar to other reports from the South-western parts of the country that reported rates of between 2.9 to 9.6% among studies on adolescent populations. in the developed world countries such as the united states have reported prevalence rates among their adolescent population as high as between 29.8-38.2% (Abdumalik, 2009, Modabber-Nia *et al.,* 2007, AL-Gelban, 2007).

the factors associated with development of depression were parents marital status, an adolescent having more than 10 siblings, as well as the adolescents current living status. However on logistic regression only having more than 10 siblings and current living status remained significant as predictors for a major depressive disorder. Other African studies on adolescent

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populations reported higher prevalence of depression among adolescents from large families and also adolescents from polygamous homes (Mitchell and Abbott, 1987, Adewuya and Ologun, 2006, Afifi, 2006, Abdumalik, 2009). However factors such as gender and age were also statistically significant. Studies among Jewish adolescent populations have also reported an absence of significant difference between the gender (Wang et al., 2007, Abdumalik, 2009). In this study a higher prevalence of depression (32.1%) was reported among adolescents with posttraumatic stress symptoms compared with those who had only depression (5.3%). This finding was similar to reports of a prevalence of 28.1% for comorbid PTSS and depression in adolescents in South-west Nigeria by Omigbodun *et al.,* 2008. Similar results have been obtained in South Africa and Kenya from studies done on adolescent populations.

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CHAPTER SEVEN

CONCLUSIONS

This study shows that the prevalence rates for posttraumatic stress symptoms, posttraumatic stress disorder and major depressive disorder are similar to rates reported worldwide. It also shows that posttraumatic stress disorder and depression are highly comorbid. The types and pattern of exposure are similar to that found in other parts of the country and the world as a whole. Traumatic exposure, PTSS and depression have been shown to associated with gender, ethnicity, religion, literacy status of caregiver, parents marital status and large family size.

The exposure pattern of secondary school students in Zaria to traumatic events appears to be similar to that found in other parts of the world although the prevalence values for traumatic exposure reported were higher than that reported in the Southern parts of country. This could be could be linked to the on-going civil strife in the Northern part of the country.

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CHAPTER EIGHT

LIMITATIONS

This was a cross-sectional study in which PTSS were examined retrospectively thus increasing the likelihood of recall bias even though this may be reduced due to the age group of respondents (10-29 years). Also no causal links can be established.

There was no information on the number of exposures to the same trauma in the same individual and the duration, the duration of exposure and the severity of the event.

The study was done during the period of West African Examinations (WAEC) thus on some days during the study some of the respondents in SSS3 were not available to be interviewed despite being selected.

The schools were chosen based on convenience sampling due to the difficulties encountered by way of poor cooperation from the principals of the initially selected schools thus the findings may not be representative of the Northern part of the country.

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CHAPTER NINE

RECOMMENDATIONS

1. The need for early detection and treatment of posttraumatic stress symptoms posttraumatic stress disorder and major depressive disorder should be explored by the Ministry of Health and the Ministry of education to help identify adolescents at risk.

2. Further community based studies need to be carried out in order to replicate the findings of this study.

3. Further studies should try to explore the prevalence of other comorbidities of posttraumatic stress symptoms and posttraumatic stress disorder, such as suicidal behaviour.

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CHAPTER TEN

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APPENDIX 1

INFORMED CONSENT

My name is……. I am a Masters student with the Centre for Child and Adolescent Mental Health (CCAMH), University of Ibadan. You're being invited to participate in a study to assess **'Prevalence and correlates posttraumatic stress symptoms among secondary school students in Zaria, North-west Nigeria'**. The purpose of the study is to find out about the experience of certain traumatic events and their psychological outcomes, and the extent to which secondary students in Zaria are exposed to these events and what they are causing emotionally.

You will be asked a set of questions about yourself, your family and your emotional health. All information will be treated with strict confidentiality. Your name will not be used in any report that may come out of this study; however, any data obtained may be shared with other researchers only for the purpose of promoting medical knowledge.

Your participation in this study is voluntary and you may withdraw at any time.

Thank you for your time.

Name of Subject **Signature or Thumbprint of Subject& Date**

Name of Witness **Signature or thumbprint of With and Date**

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APPENDIX 2

PREVALENCE AND CORRELATES OF POSTTRAUMATIC STRESS SYMPTOMS AMONG SECONDARY SCHOOL STUDENTS IN ZARIA, NORTH-WEST NIGERIA.

Sociodemographic Questionnaire.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERITICS OF RESPONDENTS

Trauma Checklist Score:_____ K-SADS Score PTSS_____

K-SADS Score_____Depression_____

Date of interview:_____

Serial Number:_____ School:_____ Location:_____

Class:

- 1. JSS 1
- 2. JSS 2
- 3. JSS 3
- 4. SSS 1
- 5. SSS 2
- 6. SSS 3

Weight:_____ Height:_____ BMI:_____

Age as of last birthday:_____ Date of Birth:_____

Sex:

- 1. Male
- 2. Female

Ethnicity:

- 1. Hausa
- 2. Igbo

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- 3. Yoruba
- 4. Others

Religion:

- 1. Christianity
- 2. Islam
- 3. Others

SECTION B: SOCIODEMOGRAPHIC CHARACTERISTIC OF THEIR PARENTS

Parents level of education:

1. **Father:**
    - 1. Literate ( )
    - 2. Not Literate ( )
2. **If literate; level of education:**
    - 1. Primary:___
    - 2. Secondary:___
    - 3. Tertiary:_____
3. **Mother:**
    - 1. Literate ( )
    - 2. Not Literate ( )
4. **If literate; level of education:**
    - 1. Primary:____
    - 2. Secondary:____
    - 3. Tertiary:_____

Occupational status of parents:

Father:

- 1. Employed ( )
- 2. Unemployed ( )
- 3. I don't know ( )

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5. **Occupation of father: _____ (please state exact occupation)**
    - **Occupational code ( )**
6. **Mother:**
    - 1. Employed ( )
    - 2. Unemployed ( )
    - 3. I don't know ( )
7. **Occupation of mother: _____ (please state exact occupation)**
    - **Occupational code ( )**

Occupational status according to the international standard of classification of occupation (ISCO-88)

Group

1. ***Legislator, Senior official manager***
2. ***Professional***
3. ***Technician***
4. ***Clerks***
5. ***Service workers / shop attendants / market workers***
6. ***Skilled agricultural / fishing workers***
7. ***Craft and related trade workers***
8. ***Plant / machinery operators / assemblers***
9. ***Elementary occupations***
10. ***Armed forces***

X. Workers not classified by occupation (specify)_____

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SECTION C: FAMILY PROFILE

8. **Marital status of parents:**
    - **1**. Cohabiting:
    - 2. Married:
    - 3. Separated:
    - 4. Divorced:
    - 5. Widowed:

9. **Number of siblings:**
10. **Number of mother's children:**
11. **Number of father's Children:**
12. **Your position among your siblings:**
    - First ( )
    - Last ( )
    - If others please specify ( )
13. **Your position among your mother's children:**
14. **Your position among your father's children;**
15. **Who do you live with at present?**
16. **Who brought you up from childhood?**
    - 1. Parents ( )
    - 2. Mother alone ( )
    - 3. Mother with Stepfather ( )
    - 4. Father alone ( )
    - 5. Father with Stepmother ( )
    - 6. Grandparents ( )
    - 7. Grandmother alone ( )
    - 8. Grandfather alone ( )
    - 9. Aunt ( )
    - 10.Uncle ( )

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17. How many different people have you lived with?_____

18. Have you witnessed physical fights between your parents in the last 1 year?

- 1. Yes ( )
- 2. No ( )

19. Have you been punished by your parent/ guardian to the point of physical injury in the past 1 year?

- 1. Yes
- 2. No

20. Have you developed an emotional/ behavioural or mental problem that required treatment in the last 1 year?

- 1. Yes
- 2. No

21. If yes by whom?

- 1. Father
- 2. Mother
- 3. Both
- 4. Guardian

SECTION D: PATTERN OF PSYCHOACTIVE SUBSTANCE USE

22. Do any of your parents drink alcohol?

- 1. Yes
- 2. No

23. Have you ever seen them drink heavily?

- 1. Yes
- 2. No

24. Do any of your parents use tobacco/ cigarettes?

- 1. Yes
- 2. No

25. If yes who?

- 1. Father
- 2. Mother

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- 3. Both

26. Do any of your parents use any hard drugs e.g cannabis, heroine, inhalants etc.?

- 1. Yes
- 2. No
- 3. I don't know

27. If yes who?

- 1. Father
- 2. Mother
- 3. Both

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APPENDIX 3

TRAUMA CHECKLIST (KSAD-PL)

POST-TRAUMATIC STRESS DISORDER **(0 = No Information; 1 = No; 2 = Yes)**

1. Traumatic Events

Probe: *I am going to ask you about a number of bad things that often happen to children your age, and I want you to tell me if any of these things have ever happened to you. Be sure to tell me if any of these things have ever happened, even if they only happened one time.*

	Criteria	Parent Ever	Child Ever	Summary Ever
a. Car Accident				
Have you ever been in a bad car accident? What happened? Were you hurt? Was anyone else in the car hurt?	Significant car accident in which child or other individual in car was injured and required medical intervention.	0 1 2	0 1 2	0 1 2
b. Other Accident				
Have you ever been in any other type of bad accidents? What about a biking accident? Other accidents? What happened? Were you hurt?	Significant accident in which child was injured and required medical intervention.	0 1 2	0 1 2	0 1 2
c. Fire				
Were you ever in a serious fire? Did your house or school ever catch on fire? Did you ever start a fire that got out of control? What happened? Did anyone get hurt? Was there a lot of damage?	Child close witness to fire that caused significant property damage or moderate to severe physical injuries.	0 1 2	0 1 2	0 1 2
d. Witness of a Disaster				
Have you ever been in a really bad storm, like a tornado or a hurricane? Have you ever been caught in floods with waters that were deep enough to swim in?	Child witness to natural disaster that caused significant devastation.	0 1 2	0 1 2	0 1 2
e. Witness of a Violent Crime				
Did you ever see someone rob someone or shoot them? Steal from a store or jump someone? Take someone hostage? What happened? Where were you when this happened? Was anyone hurt?	Child close witness to threatening or violent crime.	0 1 2	0 1 2	0 1 2
f. Victim of Violent Crime				
Did anyone ever mug you or attack you in some other way? What happened? Were you hurt?	Child victim of seriously threatening or violent crime.	0 1 2	0 1 2	0 1 2

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	Criteria	Parent Ever	Child Ever	Summary Ever
g. Confronted with Traumatic News				
Have you ever gotten some really bad news unexpectedly? Like found out someone you loved just died or was sick and would never get better?	Learned about sudden, unexpected death of a loved one, or that loved one has life-threatening disease.	0 1 2	0 1 2	0 1 2
h. Witness to Domestic Violence				
Some kids' parents have a lot of nasty fights. They call each other bad names, throw things, threaten to do bad things to each other, or sometimes really hurt each other. Did your parents (or does your mother and her boyfriend) ever get in really bad fights? Tell me about the worst fight you remember your parents having. What happened?	Child witness to explosive arguments involving threatened or actual harm to parent.	0 1 2	0 1 2	0 1 2
i. Physical Abuse				
When your parents got mad at you, did they hit you? Have you ever been hit so that you had bruises or marks on your body, or were hurt in some way? What happened?	Bruises sustained on more than one occasion, or more serious injury sustained.	0 1 2	0 1 2	0 1 2
j. Sexual Abuse				
Did anyone ever touch you in your private parts when they shouldn't have? What happened? Has someone ever touched you in a way that made you feel bad? Has anyone who shouldn't have ever made you undress, touch you between the legs, make you get in bed with him/her, or make you play with his privates?	Isolated or repeated incidents of genital fondling, oral sex, or vaginal or anal intercourse.	0 1 2	0 1 2	0 1 2
k. Other				
Is there anything else that happened to you that was really bad, or something else you saw that was really scary, that you want to tell me about?	Record incident below.	0 1 2	0 1 2	0 1 2

__ IF EVIDENCE OF PAST TRAUMA, COMPLETE THE POST-TRAUMATIC STRESS DISORDER QUESTIONS ON THE FOLLOWING PAGE.

__ IF NO EVIDENCE OF PAST TRAUMA, END THE SCREENING INTERVIEW. COMPLETE PRELIMINARY LIFETIME DIAGNOSES WORKSHEET AND APPROPRIATE SUPPLEMENTS.

NOTES: **(Record dates of past traumatic events).**

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APPENDIX 4

POSTTTRAUMATIC STRESS DISORDER MODULE OF KSADS-PL

POST-TRAUMATIC STRESS DISORDER

Screen Items

Note: In discussing traumatic events with children, it is important to use their language in your dialogue. (e.g. *Do you think about when he stuck his pee-pee up your bum often?*)

	Parent CE	Parent MSP	Child CE	Child MSP	Summary CE	Summary MSP
1. Recurrent Thoughts or Images of Event *Has there ever been a time when you kept seeing _____ again and again? How often did this happen? Did what happen keep coming into your mind? Did you think about it a lot?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
2. Efforts to Avoid Thoughts or Feelings Associated with the Trauma *What kind of things do you do or have you done to keep from thinking about ____? To get rid of bad thoughts, some kids, read, do things to keep busy, or go to sleep. Did you ever do any of these things or other things to get rid of those bad thoughts and/or feelings?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
3. Nightmares *Has there ever been a time when you had a lot of nightmares? Did you ever dream about ____ ? How often? How did you feel when you woke up from one of your nightmares?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
4. Insomnia *After ___ happened, did you have trouble falling or staying asleep? How long did it take you to fall asleep? Did you wake up in the middle of the night?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
5. Irritability or Outbursts of Anger *After _____ happened, did you feel cranky or grouchy a lot? Were you having a lot of temper tantrums?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2

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__ IF RECEIVED A SCORE OF 2 ON CURRENT RATINGS OF ANY OF THE PRECEDING ITEMS, COMPLETE THE REMAINDER OF THE CURRENT AND PAST POST-TRAUMATIC STRESS DISORDER ITEMS ON THE FOLLOWING PAGE.

__ IF RECEIVED A SCORE OF 2 ON PAST RATINGS OF ANY OF THE PRECEDING ITEMS, COMPLETE THE REMAINDER OF THE CURRENT AND PAST POST-TRAUMATIC STRESS DISORDER ITEMS ON THE FOLLOWING PAGE.

NOTES: (Record dates of possible current and past Post-Traumatic Stress Disorder).

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POST-TRAUMATIC STRESS DISORDER: SUPPLEMENTAL QUESTIONS

	Parent CE	Parent MSP	Child CE	Child MSP	Summary CE	Summary MSP
1. Repetitive Play Related to Event/ Re-Enactment						
When you played, did you sometimes pretend that _____? When you played with your dolls did you sometimes _____? How often did you have your dolls _____? **In response to sexual abuse** markedly seductive behavior, sexual play with dolls or peers, or increased masturbation may be observed. **In response to physical abuse or witnessing domestic violence,** markedly aggressive play may be observed.	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
2. Dissociative Episodes, Illusions, or Hallucinations						
a. Dissociative Episodes						
Do people say that you daydream a lot? Look spaced-out? Do you lose track of time a lot? Have hours gone by and you've felt unsure of what you did during that time?	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
b. Illusions						
Has there ever been a time when you felt like ___ was happening again? Where were you when this happened to you? Was the feeling so strong that it was hard to tell whether or not it was happening again? Have you ever seen or heard things that you knew weren't really there that reminded you of what happened? What did you see?	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
c. Hallucinations						
Since ____ happened, have you had any experiences in which you saw things that other people couldn't see, or heard things that other people couldn't hear? What did you see/hear? Have you seen any ghosts? Heard (perpetrator) talk to you? Felt (perpetrator) touch you?	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2

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	Parent CE	Parent MSP	Child CE	Parent MSP	Summary CE	Summary MSP
3. Distress Elicited by Exposure to Stimuli that Resemble or Symbolize Event *Has there ever been a time when you felt bad when you were somewhere that reminded you of what happened? Did you sometimes see people on the street that reminded you of ___? When you saw someone that reminded you of ___, did it make you feel like it was happening again? Were there other things that made you feel like it was happening again? Special dates or times of the day that reminded you of ____, and made you feel like it was happening again?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
4. Efforts to Avoid Activities or Situations that Arose Recollections of the Trauma *You said before that _____ sometimes reminds you of what happened. Did you try to avoid _____?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
5. Inability to Recall an Important Aspect of the Trauma *Do you remember everything that happened to you, or does it seem like parts of it are gone from your mind? Are there parts or details you just can't remember?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
6. Diminished Interest in Activities *Since _____ happened, have you been feeling bored a lot? Are things not as much fun as before?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
7. Feelings of Detachment or Estrangement *Is it hard for you to trust other people? Do you feel like being alone more often than before? Like you just don't feel like being around people now that you used to like being around before? Do you feel alone even when you are with other people?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
8. Restricted Affect *Do you sometimes feel like a robot? Is it hard for you to tell how you feel? When something sad happens, do you feel sad? When something good happens, do you feel happy? As happy as before or less so?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2

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	Parent CE	Parent MSP	Child CE	Child MSP	Summary CE	Summary MSP
9. Sense of Foreshortened Future *What do you think things will be like for you when you grow up? Do you think you will grow up? Is it hard for you to imagine getting older?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
10. Difficulty Concentrating *Do you have trouble keeping your mind on what you are doing? Is it harder for you to do your homework or read since _____ happened?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
11. Hypervigilance *Since _____ happened, are you more careful? Do you feel like you always have to watch what's going on around you? Do you double check the doors or windows to make sure they are locked?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
12. Exaggerated Startle Response *Since _____ happened, are you more jumpy? Do little noises really scare you?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
13. Physiologic Reactivity Upon Exposure to Events that Symbolize Traumatic Event When you are in a place that reminds you of _____, how do you feel? Does your heart start beating extra hard, or your stomach start to feel like you might throw up?	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
14. Impairment						
a. Socially (with peers): _____	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
b. With Family: _____	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
c. In School: _____	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2

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	Parent CE	Parent MSP	Child CE	Child MSP	Summary CE	Summary MSP
15. Duration (in weeks)	__ __	__ __	__ __	__ __	__ __	__ __
16. Evidence of Post-Traumatic Stress Disorder	**Summary CE**	**Summary MSP**				
a. DSM-III-R Criteria						
1. At least one Re-Experiencing items (1. Recurrent Thoughts or Images of Event, 2. Nightmares, 3. Repetitive Play, 4. Dissociative Episode, Illusions, or Hallucinations, or 5. Distress with Exposure);	0 1 2	0 1 2				
2. At least three of the Persistent Avoidance items (1. Avoid Thoughts or Feelings Associated with Trauma, 2. Avoid Activities, 3. Inability to Recall, 4. Diminished Interest, 5. Feelings of Detachment, Restricted Affect, or 6. Foreshortened Future);						
3. At least two of the Increased Arousal items (1. Insomnia, 2. Irritability, 3. Difficulty Concentrating, 4. Hypervigilance, 5. Exaggerated Startle Response or 6. Physiologic Reactivity); and						
4. Duration at least one month.						
b. DSM-IV Criteria						
1. At least one of the following Re-Experience items (1. Recurrent Thoughts or Images of Event, 2. Repetitive Play, 3. Nightmares, 4. Dissociative Episodes, Illusions, or Hallucinations, 5. Distress Elicited to Exposure to Stimuli, or 6. Physiologic Reactivity);	0 1 2	0 1 2				
2. At least three of the Persistent Avoidance items (1. Avoid Thoughts or Feelings, 2. Avoid Activities, 3. Inability to Recall, 4. Diminished Interest, 5. Feelings of Detachment, Restricted Affect or, 6. Foreshortened Future);						
3. At least two of the Increased Arousal items (1. Insomnia, 2. Irritability, 3. Difficulty Concentrating, 4. Hypervigilance, or 5. Exaggerated Startle Response);						
4. Duration at least one month; and						
5. Evidence of functional impairment.						

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APPENDIX 5

DEPRESSION MODULE OF THE KSADS-PL

DEPRESSIVE DISORDERS

Depressed Mood

Refers to subjective feelings of depression based on verbal complaints or feeling depressed, sad, blue, gloomy, very unhappy, down, empty, bad feelings, feels like crying. Do not include ideational items (like discouragement, pessimism, worthlessness), suicide attempts or depressed appearance. Some children will deny feeling "sad" and report feeling only "bad" so it is important to inquire specifically about each dysphoric affect. Do not count feelings of anxiety or tension. **Irritability without any other persistent dysphoric affect should not be rated here**. In the interview with parent, mother's "gut feeling" (empathic sensing) that child frequently feels depressed can be taken as positive evidence of child's depressive mood **if parent is not concurrently depressed.**

Have you ever felt sad, blue, down, or empty?
Did you feel like crying? When was that?
Do you feel __ now?
Was there ever another time you felt __?
Did you have any other bad feelings?
Did you have a bad feeling all the time that you couldn't get rid of?
Did you cry or were you tearful? Did you feel (_____)
all the time, some of the time? (Percent of awake time: summation of % of all labels if they do not occur simultaneously. **(Assessment of diurnal variation can secondarily clarify daily duration of depressive mood).**
Did it come and go?
How often? Every day?
How long did it last?
What do you think brought it on?
(Assess relationship between depressed mood and separation from caregiver.) *Did you feel sad when your mother was away? If separation from mother is given as a cause: Did you feel (_____) when mother was with you? Did you feel a little better or was the feeling totally gone?*
Could other people tell when you were sad?
How could they tell? Did you look different?

P C S

0 0 0 No information.

1 1 1 Not at all or less than once a week.

2 2 2 Subthreshold: Often experiences dysphoric mood at least 3 times a week for more than 3 hours each time.

3 3 3 Threshold: Feels "depressed" most of the day more days than not.

PAST: __ __ __
P C S

Duration of Depressed Mood

_____

NOTE: Sometimes the child will initially give a negative answer at the start of the interview but will become obviously sad as the interview goes on. Then these questions should be repeated eliciting the present mood and using it as an example to determine its frequency. Similarly, if the mother's report is that the child is sad most of the time and the child denies it, the child should be confronted with the mother's opinion and then asked why he thinks his mother believes he feels sad so often.

NOTE: When a child or parent reports frequent short periods of sadness throughout the day, it is likely that this child is always sad and only reports the exacerbations, in which case the rating of depressive mood will be 3. Thus, it is always essential to ask about the rest of the time: *"Besides these times when you felt (_____), during the rest of the time, did you feel happy or were you more sad than your friends?"*

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Irritability and Anger

Subjective feeling of irritability, anger, crankiness, bad temper, short tempered, resentment or annoyance, whether expressed overtly or not. Rate the **intensity and duration** of such feelings.

Was there ever a time when you got annoyed, irritated, or cranky at little things?
Did you ever have a time when you lost your temper a lot? When was that? Are you like that now? Was there ever another time you felt __?
What kinds of things made you __?
Were you feeling mad or angry also (even if you didn't show it)?
How angry?
More than before?
What kinds of things made you feel angry?
Did you sometimes feel angry and/or irritable and/or cranky and didn't know why?
Did this happen often?
Did you lose your temper?
With your family?
Your friends?
Who else?
At school?
What did you do?
Did anybody say anything about it?
How much of the time did you feel angry, irritable, and/or cranky?
All of the time?
Lots of the time?
Just now and then?
None of the time?

When you got mad, what did you think about?
Did you think about killing others or hurting yourself? Or about hurting them or torturing them? Whom? Did you have a plan? How?

If irritability occurs in discrete episodes within a depressive state, especially if unprovoked, rater should keep this in mind when asking about mania/hypomania.

P C S

0 0 0 No information

1 1 1 Not at all or less than once a week.

2 2 2 Subthreshold: Feels definitely more angry or irritable than called for by the situation, at least 3 times a week for more than 3 hours each time. Or often argumentative, quick to express annoyance.

3 3 3 Threshold: Feels irritable/angry daily, or almost daily, at least 50% of awake time. Or often shouts, loses temper.

PAST: __ __ __
P C S

Duration of Irritable Mood

_____

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Anhedonia, Lack of interest, Apathy, Low Motivation, or Boredom

Boredom is a term all children understand and which frequently refers to loss of ability to enjoy (anhedonia) or to loss of interest or both. Loss of pleasure and loss of interest are not mutually exclusive and may coexist.

What are the things you do for fun? Enjoy?
(Get examples: nintendo, sports, friends, favorite games, school subjects, outings, family activities, favorite TV programs, computer or video games, music, dancing, playing alone, reading, going out, etc.).

Has there ever been a time you felt bored a lot of the time? When? Do you feel bored a lot now? Was there another time you felt bored a lot?
Did you feel bored when you thought about doing the things you usually like to do for fun? (Give examples mentioned above). Did this stop you from doing those things? Did you (also) feel bored while you were doing things you used to enjoy?

Anhedonia refers to partial or complete (pervasive) loss of ability to get pleasure, enjoy, have fun during participation in activities which have been attractive to the child like the ones listed above. It also refers to basic pleasures like those resulting from eating favorite foods and, in adolescents, sexual activities.

Did you look forward to doing the things you used to enjoy? (Give examples)
Did you try to get into them?
Did you have to push yourself to do your favorite activities?
Did they interest you?
Did you get excited or enthusiastic about doing them? Why not?
Did you have as much fun doing them as you used to before you began feeling (sad, etc.)?
If less fun, did you enjoy them a little less? Much less? Not at all?
Did you have as much fun as your friends?
How many things are less fun now than they used to be (use concrete examples provided earlier by child)?
How many were as much fun? More fun?
Did you do _____ less than you used to? How much less?

In adolescents: *(if sexually active) Do you enjoy sex as much as you used to? Are you less sexually active than you used to be?*

This item does not refer to inability to engage in activities *(loss of ability to concentrate on reading, games, TV, or school subjects)*

Two comparisons should be made in each assessment: *Enjoyment as compared to that of peers and/or enjoyment as compared to that of child when not depressed. The second is not possible in episodes of long duration because normally children's preferences change with age. Severity is determined by the number of activities which are less enjoyable to the child, and by the degree of loss of ability to enjoy.*

Do not confuse with lack of opportunity to do things which may be due to excessive parental restrictions.

P C S

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Several activities definitely less pleasurable or interesting. Or bored or apathetic at least 3 times a week during activities.

3 3 3 Threshold: Most activities much less pleasurable or interesting. Or bored or apathetic daily, or almost daily, at least 50% of the time during activities.

PAST: ___ ___ ___
P C S

Duration of Anhedonia

_____

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a. Recurrent Thoughts of Death

Sometimes children who get upset or feel bad, wish they were dead or feel they'd be better off dead. Have you ever had these type of thoughts? When? Do you feel that way now? Was there ever another time you felt that way?

P C S

0 0 0 No information.

1 1 1 Not present.

2 2 2 Threshold: Transient thoughts of death

3 3 3 Threshold: Recurrent thoughts of death, "I would be better off dead" or "I wish I were dead".

PAST: $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

b. Suicidal Ideation

This includes preoccupation with thoughts of death or suicide and auditory command hallucinations where the child hears a voice telling him to kill himself or even suggesting the method. **Do not include mere fears of dying.**

Sometimes children who get upset or feel bad think about dying or even killing themselves.
Have you ever had such thoughts?
How would you do it?
Did you have a plan?

0 0 0 No information.

1 1 1 Not at all.

2 2 2 Subthreshold: Occasional thoughts of suicide but has not thought of a specific method.

3 3 3 Threshold: Often thinks of suicide and has thought of a specific method.

PAST: $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

c. Suicidal Acts - Seriousness

Judge the seriousness of suicidal intent as expressed in his suicidal act like: Likelihood of being rescued; precautions against discovery; actions to gain help during or after attempt; degree of planning; apparent purpose of the attempt (manipulative or truly suicidal intent).

Have you actually tried to kill yourself?
When?
What did you do?
Any other things?
Did you really want to die?
How close did you come to doing it?
Was anybody in the room?
In the apartment?
Did you tell them in advance?
How were you found?
Did you really want to die?
Did you ask for any help after you did it?

0 0 0 No information.

1 1 1 No attempt or gesture with no intent to die (eg., held pills in hand).

2 2 2 Subthreshold: Present, but very ambivalent.

3 3 3 Threshold: Definite suicidal intent.

PAST: $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

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d. Suicidal Acts - Medical Lethality

Actual medical threat to life or physical condition following the most serious suicidal act. Take into account the method, impaired consciousness at time of being rescued. seriousness of physical injury, toxicity of ingested material, reversibility, amount of time needed for complete recovery and how much medical treatment needed.

How close were you to dying after your (most serious suicidal act)?
What did you do when you tried to kill yourself?
What happened to you after you tried to kill yourself?

P C S	
0 0 0	No information.
1 1 1	No attempt or gesture with no intent to die (e.g., held pills in hand).
2 2 2	Subthreshold: e.g., took 10 aspirins, mild gastritis.
3 3 3	Threshold: e.g., took 10 seconal, had brief unconsciousness.

PAST: **P** **C** **S**

e. Non-Suicidal Physical Self-Damaging Acts

Refers to self-mutilation, or other acts done **without intent** of killing himself.

Did you ever try to hurt yourself?
Have you ever burned yourself with matches/candles?
Or scratched yourself with needles/ a knife? Your nails?
Or put hot pennies on your skin?
Anything else?
Why did you do it?
How often?
Do you have many accidents?
What kind?
How often?

Some kids do these types of things because they want to kill themselves, and other kids do them because it makes them feel a little better afterwards? Why do you do these things?

0 0 0	No information.
1 1 1	Not present.
2 2 2	Subthreshold: Infrequent (1-3 times a year). Has never caused serious injury to self.
3 3 3	Threshold: Frequent (4 or more times a year) or has caused serious injury to self (e.g. burn with scarring; broken bone).

PAST: **P** **C** **S**

__ IF RECEIVED A SCORE OF 3 ON CURRENT RATING OF ANY OF THE PREVIOUS ITEMS, COMPLETE THE DEPRESSIVE DISORDERS (CURRENT) SECTION OF SUPPLEMENT #1, AFFECTIVE DISORDERS, AFTER FINISHING THE SCREEN INTERVIEW.

__ IF RECEIVED A SCORE OF 3 ON PAST RATING OF ANY OF THE PREVIOUS ITEMS, COMPLETE THE DEPRESSIVE DISORDERS (PAST) SECTION OF SUPPLEMENT #1, AFFECTIVE DISORDERS, AFT ER FINISHING THE SCREEN INTERVIEW.

__ NO EVIDENCE OF DEPRESSIVE DISORDER.

NOTES: (Record dates of possible current and past Depressive Disorders).

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DEPRESSION SUPPLEMENT

1. Lack of Reactivity of Depressed or Irritable Mood to Positive Stimuli

Extent to which temporary improvement in mood is associated with positive environmental events. For patients with separation anxiety disorder, differentiate between improvements in anxiety and depressive symptoms (especially in inpatients during visiting). Only the latter is to be recorded. The ratings take into account both extent and duration of mood improvement.

If someone tried to cheer you up, could they?
Has anything good happened to you since you started feeling (___)?
If yes, what was it?
If no, are you sure?
Anything a little bit good?
Did this good thing make you feel any better?
If yes, how good did you feel?
Did you feel happy?
Did you laugh at anything?
When you were at your worst, did this feeling ever go away?
When you got your mind on other things or when something good happened, did the feeling ever go away?
Did all of it go away?
What made it go away? (e.g., like when you were playing with other children?)
How long did the good feeling last?
Minutes? Hours? All day?
Did you feel bad no matter what was happening?

P C S

0 0 0 No information.

1 1 1 Not Present: Very responsive to environmental events, in both extent and duration of improvement.

2 2 2 Subthreshold: Somewhat responsive but still feels depressed. Mood improves partially and stays like that for more than a few minutes.

3 3 3 Threshold: "Brief peaks." Mood clears up for no longer than a few minutes in response to positive stimuli then goes back down again.

PAST: ___ ___ ___
P C S

2. Quality of Dysphoric Mood Different Than Grief

Extent to which the subjective feelings of depression are felt by the child to be qualitatively different from the kind of feeling s/he would have or has had following the death of a loved one, pet, or from loneliness or from feelings of missing someone during separation experience (more common in child's life). If possible, get baseline for comparison of missing, grief, or loneliness feelings during a period when child was not depressed. NOTE: Parent can only report this item if the child has actually stated this spontaneously before.

Is this feeling different than the one you get when a friend moved away, or your parent went out of town for awhile? Is this like a "missing someone" or a "lonely" feeling? How is it different? Has anyone close to you died? A pet? Is this feeling you are having now of being (down/sad) different from the feeling you had after ___ died?

0 0 0 No information or unable to understand question.

1 1 1 Not present: No difference or just more severe.

2 2 2 Subthreshold: Questionable or minimal difference.

3 3 3 Threshold: Definitely different.

PAST: ___ ___ ___
P C S

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3. Diurnal Mood Variation

Extent to which, for at least one week there is a persistent fluctuation of mood (depressed or irritable) with the first or second half of the day. Rate regardless of regular environmental changes. **Do not rate positive if it gets worse only at bedtime, schooltime or other separation times.** The worst period should last at least 2 hours. **Ask about weekends. Make sure the worsening refers to dysphoric mood and not to anxiety or environmental effects.**

Do you feel more (_____) in the morning when you wake up, or in the afternoon, or in the evening? A lot worse or a little worse?
How long does it last?
Does this happen even after you get home from school, after dinner?
When do you start feeling better?

How much worse?
When you feel worse, is it a different feeling or just more of the same?

(Use regular events as time milestones: lunch, second AM class, TV program, after dinner, etc.).

P C S

Worse in Morning

0 0 0 No information.

1 1 1 Not Present: Not worse in the morning or variable or no depressed mood.

2 2 2 Subthreshold: Minimally or questionably worse or for less than 2 hours.

3 3 3 Threshold: Notably worse for at least 2 hours.

PAST: ___ ___ ___
P C S

Worse in Afternoon and/or Evening

0 0 0 No information.

1 1 1 Not Present: Not worse in the evening or variable or no depressed mood.

2 2 2 Subthreshold: Minimally or questionably worse or for less than 2 hours.

3 3 3 Threshold: Notably worse for at least 2 hours.

PAST: ___ ___ ___
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4. Sleep Disturbances

Sleep disorder, including initial, middle and terminal difficulty in getting to sleep or staying asleep. **Do not rate if he feels no need for sleep.** Take into account the estimated number of hours slept and the subjective sense of lost sleep. Normally a 6 - 8 year old child should sleep about 10 hours ± one hour. 9 - 12 years - 9 hours ± 1 hour. 12 - 16 years - 8 ± one hour.

a. Initial Insomnia

Do you have trouble sleeping? How long does it take you to fall asleep?

P C S

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Less than 2 hours most nights.

3 3 3 Threshold: Two hours or more - most nights.

PAST: ___ ___ ___
P C S

b. Middle Insomnia

Do you wake up in the middle of the night? How many times? How long does it take you to fall back asleep?

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Less than 30 minutes - most nights.

3 3 3 Threshold: More than 30 minutes - most nights.

PAST: ___ ___ ___
P C S

c. Terminal Insomnia

When you are feeling down, what time do you wake up in the mornings? Are you waking up earlier than you had to?

P C S

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Less than 30 minutes - most nights.

3 3 3 Threshold: More than 30 minutes - most nights.

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d. Circadian Reversal

When you are feeling down, do you sleep at different times than usual? Like do you sometimes stay up real late, 'till 4:00 in the morning, and then sleep the next day 'till sometime after noon?

P C S	
0 0 0	No information.
1 1 1	Not present.
2 2 2	Subthreshold: Less than 1 day per week.
3 3 3	Threshold: More than 1 day per week.

PAST: ___ ___ ___
P C S

e. Non-restorative Sleep

Do you feel rested upon awakening?

0 0 0	No information.
1 1 1	Not present.
2 2 2	Subthreshold: Subjective feeling of sleepiness and difficulty getting out of bed reported. Little to no effect on functioning once out of bed.
3 3 3	Threshold: Subjective feeling of sleepiness reported together with difficulty getting out of bed and ongoing feeling of fogginess which persists for only part of the day.

PAST: ___ ___ ___
P C S

f. Hypersomnia

Do not rate positive if daytime sleep time plus nighttime true sleep equals normal sleep time (compensatory naps).

Increased need to sleep, sleeping more than usual. Inquire about hypersomnia even if insomnia was rated 3 - 6. Sleeping more than norms in 24 hour period.

Are you sleeping longer than usual?
Do you go back to sleep after you wake up in the morning?
When did you start sleeping longer than usual?
Did you used to take naps before?
When did you start to take naps?
How many hours did you use to sleep before you started to feel so (sad)?

Parents may say that if child was not awakened he/she would regularly sleep >11 - 12 hours and he/she actually does so, every time he is left on his own. This should be rated 3.

P C S	
0 0 0	No information.
1 1 1	Not Present. Or needs less sleep than usual.
2 2 2	Subthreshold: Several times a week sleeps at least 1 hour more than usual.
3 3 3	Threshold: Several times a week sleeps at least 2 hours more than usual.

PAST: ___ ___ ___
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5. Fatigue, Lack of Energy and Tiredness

This is a subjective feeling. (**Do not confuse with lack of interest)** (Rate presence even if subject feels it is secondary to insomnia).

Have you been feeling tired? How often?
Do you feel tired -
All of the time?
Most of the time?
Some of the time?
Now and then?
When did you start feeling so tired?
Was it after you started feeling ( )?
Do you take naps because you feel tired?
How much?
Do you have to rest?
Do your limbs feel heavy?
Is it very hard to get going? .... to move your legs?
Do you feel like this all the time?

0 0 0	No information.
1 1 1	Not at all or more energy than usual.
2 2 2	Subthreshold: At times definitely more tired or less energy than usual.
3 3 3	Threshold: Often feels tired without energy. Has to rest (not sleep) during the day.

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6. Cognitive Disturbances

P C S

a. Concentration, Inattention, or Slowed Thinking

(School information may be crucial to proper assessment of this item).

Complaints (or evidence from teacher) of diminished ability to think or concentrate which was not present to the same degree before onset of present episode. **Distinguish from lack of interest or motivation. (Do not include if associated with formal thought disorder).**

Do you know what it means to concentrate?
Sometimes children have a lot of trouble concentrating. For instance, they have to read a page from a book, and can't keep their mind on it so it takes much longer to do it or they just can't do it, can't pay attention.

Have you been having this kind of trouble? When did it begin? Is your thinking slowed down? If you push yourself very hard can you concentrate? Does it take longer to do your homework? When you try to concentrate on something, does your mind drift off to other thoughts? Can you pay attention in school? Can you pay attention when you want to do something you like? Do you forget about things a lot more? What things can you pay attention to?
Is it that you can't concentrate? or is it that you are not interested, or don't care?
Did you have this kind of trouble before?
When did it start?

NOTE: IF CHILD HAS ATTENTION DEFICIT DISORDER, DO NOT RATE POSITIVELY, UNLESS THERE WAS A WORSENING OF THE CONCENTRATION PROBLEMS ASSOCIATED WITH THE ONSET OF DEPRESSED MOOD.

0 0 0 No Information.

1 1 1 Not at all.

2 2 2 Subthreshold: Definitely aware of limited attention span but causes no difficulties other than substantially increased effort in schoolwork.

3 3 3 Threshold: Interferes with school work. Forgetful.

PAST: ___ ___ ___
P C S

b. Indecision

When you were feeling sad, was it hard for you to make decisions? Like did you find recess was over before you could decide what you wanted to do?

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Difficulty making decisions has moderate effect on functioning.

3 3 3 Threshold: Difficultly making decisions has moderate to severe effect on functioning.

PAST: ___ ___ ___
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7. Appetite/Weight

P C S

a. Decreased Appetite

Appetite compared to usual or to peers if episode is of long duration. Make sure to differentiate between decrease of food intake because of dieting and because of loss of appetite. **Rate here loss of appetite only.**

How is your appetite? Do you feel hungry often?
Are you eating more or less than before?
Do you leave food on your plate?
When did you begin to lose your appetite?
Do you sometimes have to force yourself to eat?
When was the last time you felt hungry?
Are you on a diet?
What kind of diet?

0 0 0 No information.

1 1 1 Not at all - normal or increased.

2 2 2 Subthreshold: Decrease in appetite every or nearly every day (e.g. regular snacks not consumed).

3 3 3 Threshold: Moderate decrease in appetite every or nearly every day (e.g. eats smaller meals than usual, some meals missed.)

PAST: ___ ___ ___
P C S

b. Weight Loss

Total weight loss from usual weight since onset of the present episode (or maximum of 12 months). Make sure he has not been dieting. In the assessment of weight loss it is preferable to obtain recorded weights from old hospital charts or the child's pediatrician. Failure to gain 1.5 kg. over a 6 month period for children between 5 and 11 years old qualifies as weight loss, as does loss of percentile grouping over a 6 month period (Iowa tables). Groupings are: Under 3rd %tile: between 3-10; 10-25; 25-50; 50-75; 75-90; 90-97; and over 97th %tile. Rate this item even if later he regained weight or became overweight. If possible, rater should have verified weights available at time of interview.

Have you lost any weight since you started feeling sad?
How do you know?
Do you find your clothes are looser now?
When was the last time you were weighed?
How much did you weigh then?

What about now? (measure it).

NOTE: DO NOT RATE POSITIVELY IF CHILD HAS ANOREXIA.

0 0 0 No information.

1 1 1 No weight loss (stays in same percentile grouping).

2 2 2 Subthreshold: Weight loss of 3-4% or less.

3 3 3 Threshold: Weight loss of 5% or more.

PAST: ___ ___ ___
P C S

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c. Increased Appetite

P C S

As compared to usual. Inquire about this item even if anorexia and/or weight loss were rated 2 - 3.

Have you been eating more than before?
Since when?
Is it like you feel hungry all the time?
Do you feel this way every day?
Do you eat less than you would like to eat?
Why?
Do you have cravings for sweets?
What do you eat too much of?

0 0 0 No information.

1 1 1 Not at all - normal or decreased.

2 2 2 Subthreshold: Occasionally snacks somewhat more than usual, or eats somewhat bigger meals.

3 3 3 Threshold: Most days snacks notable more or eats bigger meals than usual.

PAST: ___ ___ ___
P C S

d. Weight Gain

Total weight gain from usual weight during present episode (or a maximum of the last 12 months) not including gaining back weight previously lost or not gained according to the child's usual percentile for weight.

Have you gained any weight since you started feeling sad?
How do you know?
Have you had to buy new clothes because the old ones did not fit any longer?
What was your last weight?
When were you last weighed?

0 0 0 No information.

1 1 1 No weight gain (stays in same percentile).

2 2 2 Subthreshold: Weight gain of 3-4% or less.

3 3 3 Threshold: Weight gain of 5% or more.

PAST: ___ ___ ___
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8. Psychomotor Disturbances

P C S

a. Agitation

Includes inability to sit still, pacing, fidgeting, repetitive lip or finger movement, wringing of hands, pulling at clothes, and non-stop talking. To be rated positive, such activities should occur **while the subject feels depressed, not associated with the manic syndrome**, and not limited to isolated periods when discussing something upsetting. **Do not include subjective feelings of tension or restlessness** which are often incorrectly called agitation. To arrive at your rating, take into account your observations during the interview, the child's report and the parent's report about the child's behavior during the episode.

Since you've felt sad, are there times when you can't sit still, or you have to keep moving and can't stop?
Do you walk up and down?
Do you wring your hands? (demonstrate)
Do you pull or rub on your clothes, hair, skin or other things?
Do people tell you not to talk so much?
Did you do this before you began to feel (sad)?
When you do these things, is it that you are feeling (sad) or do you feel high or great?

If someone was taking movies of you while you were eating breakfast and talking to your (mother), and they took these movies before you got (depressed) and again while you were (depressed) would I be able to see a difference?
What would it be?
What would I see?
Probe: *Would it take longer before or while you were (depressed)?*
A little longer?
Much longer?

If I saw a videotape or heard an audiotape of your child at home while he/she was depressed and another when he/she wasn't depressed, could I tell the difference? If yes, what would I see (hear) different?

Make sure it does not refer to content of speech or acts or to facial expression. Refer only to speed and tempo.

NOTE: IF CHILD HAS ATTENTION DEFICIT DISORDER, DO NOT RATE THE PSYCHOMOTOR AGITATION ITEM POSITIVELY UNLESS THERE WAS A WORSENING OF AGITATION THAT CORRESPONDED WITH THE ONSET OF THE DEPRESSED MOOD.

0 0 0	No information.
1 1 1	Not at all, retarded, or associated with manic syndrome.
2 2 2	Subthreshold: Occasionally unable to sit quietly in a chair fidgeting or pulling and/or rubbing.
3 3 3	Threshold: Often unable to sit in class, fidgeting, etc., almost always disruptive to some degree.

PAST: ___ ___ ___
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b. Psychomotor Retardation

Visible, generalized slowing down of physical movement, reactions and speech. It includes long speech latencies. Make certain that slowing down actually occurred and is not merely a subjective feeling. To arrive at your rating take into account your observations during the interview, the child's report and the parent's report about the child's behavior during the episode.

Since you started feeling (sad) have you noticed that you can't move as fast as before?
Have you found it hard to start talking?
Has your speech slowed down?
Do you talk a lot less than before?
Since you started feeling sad, have you felt like you are moving in slow motion?
Have other people noticed it?

If someone was taking movies of you while you were eating breakfast and talking to your (mother), and they took these movies before you got (depressed) and again while you were (depressed) would I be able to see a difference?
What would it be?
What would I see?
What would I hear?
Probe: *Would it take longer before or while you were (depressed)?*
A little longer?
Much longer?

If I saw a videotape or heard an audiotape of your child at home while he/she was depressed and another when he/she wasn't depressed, could I tell the difference? If yes, what would I see (hear) different?

P C S

0 0 0	No information.
1 1 1	Not at all.
2 2 2	Subthreshold: Conversation is noticeably retarded but not strained, and/or slowed body movement.
3 3 3	Threshold: Conversation is somewhat difficult to maintain, and/or moves very slowly.

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9. Self-Perceptions

a. Worthlessness/Negative Self-Image

Includes feelings of inadequacy, inferiority, failure and worthlessness, self depreciation, self belittling. **Rate with disregard of how "realistic" the negative self evaluation is.**

How do you feel about yourself?
Do you like yourself? Why? or Why not?
Do you ever think of yourself as pretty or ugly?
Do you think you are bright or stupid?
Do you like your personality, or do you wish it were different?
How often do you feel this way about yourself?

P C S	
0 0 0	No information.
1 1 1	Not at all.
2 2 2	Subthreshold: Occasionally feels somewhat inadequate, or would like to change one aspect of self (e.g. looks, brains, or personality). Able to identify some positive self attributes.
3 3 3	Threshold: Often feels like a failure, or would like to change 2 aspects of self (e.g., his/her looks, brains, or personality).

PAST: ___ ___ ___
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b. Excessive or Inappropriate Guilt

...and self reproach, for things done or not done, including delusions of guilt. Rate according to proportion between intensity of guilt feelings or severity of punishment child thinks he deserves and the actual misdeeds.

When people say or do things that are good, they usually feel good, and when they say or do something bad they feel bad about it. Do you feel bad about anything you have done? What is it? How often do you think about it? When did you do that? What does it mean if I said I feel guilty about something? How much of the time do you feel like this?
Most of the time?
A lot of the time?
A little of the time?
Not at all?

What kind of things do you feel guilty about? Do you feel guilty about things you have not done? or are actually not your fault? Do you feel guilty about things your parents or others do? Do you feel you cause bad things to happen? Do you think you should be punished for this? What kind of punishment do you feel you deserve? Do you want to be punished? How do your parents usually punish you? Do you think it's enough?

For many young children it is preferable to give a concrete example such as: *"I am going to tell you about three children and you tell me which one is most like you. The first is a child who does something wrong, then feels bad about it, goes and apologizes to the person, the apologies are accepted, and he just forgets about it from then on. The second child is like the first but after his apologies are accepted, he just cannot forget about what he had done and continues to feel bad about it for one to two weeks. The third is a child who has not done much wrong, but who feels guilty for all kinds of things which are really not his fault like...Which one of these three children is like you?" It is also useful to double check the child's understanding of the questions by asking him to give an example, like the last time he felt guilty "like the child in the story."*

P C S	
0 0 0	No information.
1 1 1	Not at all.
2 2 2	Subthreshold: Occasionally feels very guilty about past actions, the significance of which he exaggerates, and which most children would have forgotten about.
3 3 3	Threshold: Often feels guilt which he cannot explain or about things which objectively are not his fault. (Except feeling guilty about parental separation and/or divorce which is normative and should not lead by and of itself to a positive guilt rating in this score, except if it persists after repeated appropriate discussions with the parents).

PAST: ___ ___ ___
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Other Criteria

	Parent CE	Parent MSP	Child CE	Child MSP	Summary CE	Summary MSP
1. Evidence of a Precipitant (Specify): _____ _____	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
2. Symptoms Occur or Worsen with Monthly Menstruation (For Adolescent Females): *Do you notice any connection between your menstrual cycle and your moods? Do you get really depressed each month right before or after you start your period?*	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
3. Impairment						
a. Socially (with peers): _____	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
b. With Family: _____	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
c. In School: _____	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2

	Summary CE	Summary MSP
4. Evidence of MDD (DSM-III-R/DSM-IV)		
1. Meets criteria (score 3) for at least five depressive symptoms which were present during the same two week period, including one symptom from the screen items (e.g. depressed mood, irritable mood, or anhedonia), plus worthlessness/guilt, sleep disturbances, fatigue, concentration/indecisiveness, appetite/weight changes, psychomotor disturbances, or recurrent thoughts of death/suicidality; and	0 1 2	0 1 2
2. an organic (pharmacological) etiology has been ruled out;		
3 depression not a normal reaction to the loss of a loved one (SEE DSM-III-R);		
4. at no time have there been delusions or hallucinations for at least two weeks in the absence of prominent affective symptoms; and		
5. did not meet criteria for Schizophrenia or Schizophreniform Disorder.		

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APPENDIX 6

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APPENDIX 7

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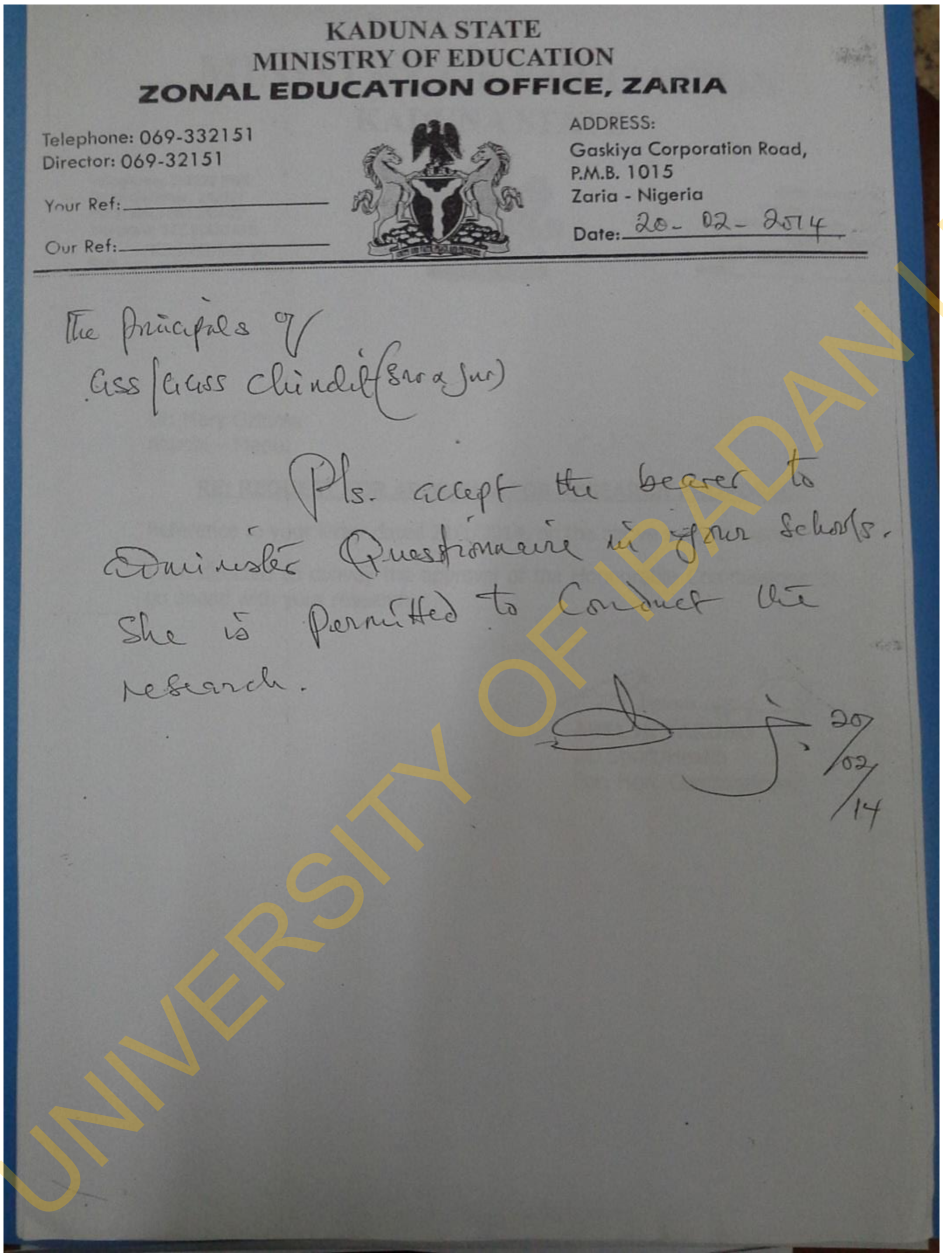
APPENDIX 8



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Date: 20- 02- 2014

The Principals of
GSS / GSS Chindit (Sra & Jnr)

Pls. accept the bearer to administer Questionnaire in your schools. She is permitted to conduct the research.

[signature] 20/02/14

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