Correlates of Post-Traumatic Stress Disorders among Adolescent Students in North-Eastern Nigeria

[1]**Asmau M. Dahiru** (MBBS, M.Sc Psychol, FWACP), [2]**Victor C. Onyencho** (B.Sc, M.Sc, PhD Psychol), [2]**Baba M. Umar** (MBBS, FWACP), [3]**Kundi B. Machina** (MBBS, FWACP), [4]**Catherine Fritz** (PhD Psychol)

[1]Department of Mental Health, Federal Neuropsychiatric Hospital, Maiduguri, Borno State, Nigeria
[2]Mental Health Department, Faculty of Clinical Sciences, College of Medical Sciences, University of Maiduguri, Maiduguri, Borno State, Nigeria
[3]Specialist Hospital, Gujiba Road, Damaturu, Yobe State, Nigeria
[4]Department of Psychology, University of Northampton, United Kingdom

Corresponding Author: Victor C. Onyencho, Mental Health Department, College of Medical Sciences, University of Maiduguri, Maiduguri, Borno State, Nigeria. F-mail: victorchid01@yahoo.com, +231 7033226293

ABSTRACT

Background: Post-traumatic stress disorder (PTSD) is often seen following exposure to traumatic events in children and adolescents. The dearth of studies on the correlates of PTSD among adolescents in North-Eastern Nigeria calls for concerns.

Objectives: Hence, this study examined the presence of PTSD among adolescents in North-Eastern Nigeria.

Methods: The study adopts a cross-sectional survey design and multistage sampling techniques were used. Stratified sampling technique was used to select the schools into public and private schools, and finally, simple random sampling was employed to select 480 adolescent students, males 45% and females 55%.

Results: It was found that the prevalence of PTSD among adolescents in Maiduguri was 19%. Nature of the traumatic events differs, ranging from bomb blast 41.7%, gunshots 31.3%, witness a killing/seeing a dead body 7.7%, serious road traffic accidents 10.2%, sudden death of someone 3.5% to others 5%. The trauma has affected 47.3% of the adolescent's academic performance.

Conclusions: PTSD is a reoccurring phenomenon in crisis-prone environments; it is therefore recommended that mental health programs in the form of psycho-education should be incorporated for adolescent students in crisis-ravaging environments.

Keywords: Adolescents, Correlates, PTSD, Maiduguri, Students.

INTRODUCTION

World Health Organization (WHO) defines an adolescent to be between the ages of 10-19 years while young persons are those aged up to 24 years.[1] Adolescence is a period of major developmental processes that span across all aspects of functioning as it corresponds with the main structural changes occurring in the brain.[2] Despite the critical developmental stage of these adolescent students in Maiduguri, they have witnessed one form of trauma or the others such as bomb blasts, gun shooting, kidnapping, killing, and see the dead bodies, and so on. However, exposing adolescents to traumatic events may lead to reactions that interfere substantially with day-to-day functioning and cause significant distress in the long run.[3]

Residents in North-Eastern Nigeria have been living in peace and harmony until 2009 when the Boko Haram insurgency began. The crisis has forced 1.5 million people to flee to other parts of the country and neighbouring countries, about 13, 000 - 17, 500 death was recorded,[4] and the crisis

are still ongoing. In a crisis, psychological disturbances such as post-traumatic stress disorder (PTSD) often follow a range of traumatic life events.

People diagnosed with PTSD in most cases have directly or indirectly experienced, heard, or witnessed life-threatening events. Diagnosis is associated with how an individual reacts with intense fear, horror, or helplessness in relation to an actual occurrence of the threat of an event to self or others.[2] PTSD can occur as a result of exposure to a momentary experience or a continuous/chronic traumatic event. Furthermore, PTSD was classified into event trauma (if it is sudden, unexpected, and limited), and process trauma (when it is a long-lasting, continued exposure).[5] PTSD is considered acute when the duration of symptoms is less than three months, chronic when symptoms last three or more months, and as having a delayed onset when symptoms develop six months after traumatic events.[2] PTSD is common across diverse ethnic and cultural groups, [2] and seen in all ages.[6]

In Nigeria, the prevalence of PTSD following road traffic accidents in Enugu was documented as 26.7% compared to 8.0% and 8.7% of the two control groups.[7] Also, in a longitudinal study, it was found that 22% of 68 Nigerian Army veterans had PTSD in Lagos following immigration from Liberia and Sierra-Leone.[8] Similarly, in a study conducted between two groups of residents in the Niger Delta over six months following human-initiated disasters, those in highly violent inflicted areas had a prevalence of PTSD as 60% compared to 14.5% of the relatively spared area.[9] In North Central Nigeria, a prevalence of 36%-47% following an ethnoreligious conflict in Jos was reported.[10] In a study conducted among University undergraduate students in Maiduguri, a prevalence of 17.8% for PTSD was reported,[11] this finding validates the silent suffering of individuals exposed to a traumatic experience such as rape, torture, assaults, displacement, and so on in North-Eastern Nigeria.

Various factors predispose and precipitate one to develop PTSD after witnessing traumatic events such as exposed stressors; previous coping strategies; and understanding of the trauma and how the individual perceives it.[12] Displacements, stigma, family characteristics, and psychiatric history are also associated with an increased risk of PTSD.[13] The traumatic event itself, its severity, type, and duration of trauma influence PTSD, this is also related to the person's social surroundings, experience, and culture,[2] are all implicated.

Most studies found PTSD to be common among females, and this is associated with various reasons and these include: the greater likelihood of females to experience stressful events are socio-cultural factors and biological changes associated with puberty, females internalise issues compares to males, [14, 15] females are more likely to ruminate leading to increase risk of PTSD.[16] PTSD is also common among lower social class families and those that live in urban areas.[14] Furthermore, the younger age groups were also more likely to present with PTSD than older ones.[2, 16] This was associated with a lack of prior knowledge and understanding of trauma, also the way young adolescents process the events is closely related to their ability to regulate emotions which varies depending on development.[16]

Exposure to traumatic events should be addressed as a public health issue with an emergency, response to terror and violence rather than diagnosing mental illnesses especially PTSD, since symptoms might not have occurred in the absence of the conflict.[17] Furthermore, not all those that are exposed to traumatic events develop PTSD as a method of adaption and individual characteristics vary.[18] Therefore, correlates and associated factors

in PTSD should be explored in other to fully understand the psychopathology.

Statement of the Problem

The dearth of information on PTSD among adolescents in developing countries is of concern. In Nigeria, so far, only a few studies documented the prevalence of post-traumatic stress disorder among adolescents in Nigeria, [14] and it was conducted three years ago in South-Western Nigeria. None has been done among adolescent students in North-Eastern Nigeria, where there has been repeated exposure to traumatic/life events like bombings, killings, shootings, seeing dead bodies on the streets, kidnapping, burnt houses, and schools, forced migration, child soldiers, etc. Although, Onyencho et al. examined PTSD and psychological well-being, however, it was done among the University of Maiduguri students.[11] Therefore, this study intends to fill this gap by providing more information on PTSD among adolescent students in Maiduguri.

PTSD has a high co-morbidity with other mental disorders especially in children and adolescents with severe trauma, making it more difficult to treat when it occurs.[19] High suicidal rate seen in PTSD was associated with its comorbidity with major depression and anxiety disorder.[20] Despite these effects, the impact of PTSD on health and wellbeing has been neglected especially among adolescents in developing countries.[21] In view of this, this study finds it worthy to investigate how PTSD affects adolescent students.

In April 2014 over 300 girls between ages, 16-18 were kidnapped from school while writing their final exams in Chibok a local government of Borno State about 125 kilometers from Maiduguri, and the school burned, most of these girls are yet to be found, further kidnapping and killings of more women and children are still on.[22] The psychological impact of these traumatic events on the students might precipitate vicarious trauma that requires medical attention since most of these students still reside in high-risk zones such as Maiduguri and its environment as internally displaced persons (IDPs).

Objectives of the Study

The general objective of the study is to explore the correlates of PTSD among adolescent students in North-Eastern Nigeria. The specific objectives of this study would include:

1. To determine the prevalence of PTSD among adolescent students in North-Eastern Nigeria.
2. To determine the correlates of PTSD among adolescent students in North-Eastern Nigeria.
3. To investigate the impact of PTSD on adolescent student's academic performance.

METHODS

Design

A cross-sectional survey design was adopted.

Sampling Techniques and Procedure

Sixty secondary schools were listed by the Ministry of Education Maiduguri covering two local governments, Maiduguri Metropolitan Council (MMC) and Jere Local Government Area. There are twenty public and forty private schools. The schools were stratified into public and private schools, then using simple random sampling, four schools were randomly selected from each group making a total of eight schools. Following the available list at the ministry of education, each second-year senior school has a range of one hundred and forty to one hundred and sixty students, classes A-D (some places more) and their names are arranged alphabetically in a school register. Using simple random sampling

techniques 480 second senior year students were selected; 216 (45%) males and 264 (55%) females. The youngest was 14 years old while the oldest was 22 years. The median age was 17 years. The main ethnic group was Kanuri (53.8%), Hausa (11.9%), Fulani (9%), and other tribes (25.3%) after explaining the contents of the consent and assent forms to the students.

Inclusion-Exclusion Criteria

The following eligibility criteria were applied to identify the participants for the research study: (i) the participants' age ranged from 14 to 18 years, (ii) the participants must be confirmed to be free from psychiatric and medical disorders, (iii) the participants must have a good command of English or Hausa language. And the exclusion criteria were as follows: (i) the participants who are below age 14 and above age 18 years, (ii) the participants who are suffering from psychiatric and medical disorders were excluded, (iii) the participants that did not have a good command of English or Hausa language.

Ethical Consideration

The ethical committee panel from the University of Northampton, United Kingdom, and the Ministry of Education, Maiduguri, Nigeria approved this study. Furthermore, the principals of all the schools involved were carried along before the commencement of data collection. Also, informed consent and assent forms were distributed, explained, and signed by the participants and their parents through the principals. Since informed consent and assent is a vital element in ethically executing research; it included the introductory letter for the study, the purpose of the research, the basic knowledge before the completion of the questionnaire so that every participant understands the significance of the questions asked. The informed letter was kept confidential to protect the identity of the participants and was reassured that under no circumstances their identification would be exposed or disclosed. The participants were also assured that the study is voluntary and at any point, they can leave the study, and the risks and benefits of the research were explained to the participants, parents, and teachers.

Measures

A *socio-demographic questionnaire* was designed to collect relevant information about risk factors for PTSD in children and adolescents. Information about age, gender, type of student (boarding or day), address, family, religion, and tribe were obtained. Others are the family background of the students, including family type (monogamous/polygamous), parents' marital status (living together, separated/divorced, or widowed), family size, and relationship with family members (if perceived to be cordial and supportive). Information about caregivers (who may or may not be the parents) and parent's educational level and occupation were obtained. Also, information about traumatic events in the past, their nature, duration, whether momentary or continuous, how it affected the participant, previous coping styles, and family history of mental illness was obtained.

Also, the *post-traumatic stress disorder checklist PTSD-PCL*, the civilian version was used to collect data.[23] The instruments have three versions, the civilian version (PCL-C) is used with any population. Respondents rate each item from 1 "*not at all*" to 5 "*extremely*" to indicate the degree to which they have been bothered by that particular symptom over the past month, with scores ranging from 17 to 85. Examples of questions include "*Repeated, disturbing dreams of a stressful experience from the past?*" "*Feeling distant or cut off from other people*?" etc. It has a sensitivity (0.78- 0.94), specificity (0.71- 0.99), internal

consistency (0.97) and test-retest reliability (0.87).[24, 25] This present study used a cut off of 50 to make a PTSD diagnosis.

Statistical Analysis

The data collected was analysed using SPSS 20.0, a descriptive statistic was employed.

RESULTS

The prevalence of PTSD was high among adolescents students in Maiduguri, 19% prevalence rate were reported among the participants. Common symptoms associated with PTSD were reported, 82.3% had symptoms in keeping with hypervigilance, exaggerated startle response, and poor concentration, and 60.3% had avoidance symptoms. In terms of sex, more females had PTSD than males, females (24.6%), and males (12.0%).

Table 1: Showing the Participants socio-demographic characteristics

Socio-demographic variables		**N**	**%**
Gender:	Male	216	45
	Female	264	55
Age:	≤ 18	423	88.3
	> 18	57	11.6
Ethnicity:	Kanuri	258	53.8
	Hausa	57	11.9
	Fulani	43	9
	Others	116	25.3
Religion:	Islam	432	89.9
	Christianity	47	9.8
Area of Residence:	Safe	185	38.5
	Unrest	107	22.3
	Others	188	39.2
Type of Student:	Day Schools	480	100
Family Type:	Monogamous	294	61.3
	Polygamous	181	37.7
	Others	5	1
Family Size:	≤ 6 members	45	9.4
	>6 members	435	90.6
Family Support:	Supportive	458	97.5
	Non-supportive	1	0.2
	Others	11	2.3
Relationship with Parents:	Cordial	455	94.8
	Non-Cordial	19	4.0
	Others	6	1.2
Occupation of Parents:	Professional	156	32.5
	Standard	141	29.5
	Menial	141	29.5
	Others	42	8.7

The result in table one shows that a total of 216 (45%) were males and 264 (55%) were females participated in the study, this implies most of the participants were females. Age 18 years and below were 423 (88.3%), and age 18 years and above were 57 (11.6), this is an indication that the majority of the participants were under

eighteen years old. The main ethnic group was Kanuri (53.8%), Hausa (11.9%), Fulani (9%), and other tribes (25.3%), finally, the majority of the participants were Kanuri by tribe, and this ethnic group most affected by the insurgency.

A total of 431 (89.9%) of the participants practice Islam, while 47 (9.8%) are Christians, this indicates that a high number of the participants were Muslims. In terms of residential locations, 185 (38.5%) of the participants live in relatively safe areas, 107 (22.3%) in areas where traumatic events are more prevalent and 188 (39.2%) in other areas, this implies that a high number of the participants resides in a highly volatile area. All the students presently are day students as the government could not provide security for boarding schools.

Two-thirds (61.3%) of the students were from monogamous families, of which about 90.6% of them are from six or more family members, 94.8% have cordial relationships with parents and 97.5% claimed to have family support in dealing with stress and helping them to cope. Parents of 156(32.5%) of the students are professionals, 141 (29.4%) standard jobs, 42 (8.7%) unemployed/retired, and 141 (29.4%) other menial jobs.

Exposure to traumatic experiences, nature and how it affects the participants, history or family history of mental illness

Three hundred and ninety-one students (81.5%) were exposed to various traumatic events, out of which 335 (69.8%) had continuous exposure, while 142 (29.6%) exposure was once. Nature of the traumatic events varied from bomb blast 200 (41.7%), gunshots 150 (31.3%), witness a killing/seeing a dead body 37 (7.7%), serious road traffic accidents 49(10.2%), the sudden death of someone 17(3.5%) and others 24 (5%). Although half of the participants (52.5%) disclosed that the events have not affected their school while 227 (47.3%) acknowledged that events have affected their school that was noticed by poor attention and concentration and a decrease in their grades. Almost two-thirds of the respondents (56.7%) have not had exposure to serious traumatic events in the past, with (43.1%) being exposed to trauma in childhood. Four hundred and twenty-five (88.5%) had no family history of mental illness, 55 (11.5%) had a history of mental illness.

DISCUSSION

The majority of the students assessed were in day schools for security reasons; this is because children tend to attend school close to parents, coupled with the current situation where boarding schools are attacked at night. More than three-fourths of the students were Muslims, again reflecting the strong Islamic composition of the larger population of the study location. There were fewer males than females in the study population with 45% and 55% respectively. This reflects the gender ratio of the class registers; it is, therefore, an indicator that there are more females than males enrolled in secondary schools in North-Eastern Nigeria.

The prevalence of PTSD found in this study was 19%, a similar finding was reported by Onyencho et al[11] where a prevalence of 17.8% for PTSD was found among the University of Maiduguri students. This finding confirms the silent suffering of residents of Maiduguri either as a student, professionals, labourers, traders, commuters, etc. The agreement found in these studies was as a result of the similarity of the participants and the same instruments were used to assess PTSD among the study population. Contrarily, Oladeji et al[14] reported a prevalence of 2.4% among adolescents

in Ibadan, Nigeria, the low rate reported might be as a result of the instrument utilized to assess PTSD, a clinical interview was used and there is also variation in the study settings as Ibadan is one of the largest and most peaceful cities in Nigeria compared to Maiduguri.

Female gender was one of the socio-demographic variables that showed a significant association with PTSD in this study. Female students had significantly higher rates of PTSD than males. This finding is supported by most of the studies both in developed and developing countries.[14]

A larger proportion of the participants had experienced traumatic events. More than half still experiencing trauma because of the unending crisis in this part of the country. This finding was in agreement with Ruggiero et al[5] study that classified trauma as an event or process trauma.

The nature of the traumatic events experienced by adolescent students in Maiduguri varies from a bomb blast, gunshots, witness a killing/seeing a dead body, serious road traffic accidents, the sudden death of someone and others. Less than half of the participants disclosed that the events affected their school evidenced by poor attention and concentration and a decrease in their grades. Also, less than half were exposed to trauma in childhood. A high percentage of the participants had a family history of mental illness; this finding was of the same view with a previous study by Adewuya et al[13] that displacements, stigma, family characteristics, and psychiatric history are associated with increased risk of PTSD.

CONCLUSION

This study revealed that the prevalence of post-traumatic stress disorder among adolescent students in this environment is relatively high. It is high among secondary school students in Maiduguri and is associated with the presence of ongoing traumatic events. It has also shown that PTSD is more common among female and younger adolescents. The nature of the traumatic events experienced by adolescent students in Maiduguri are bomb blasts, gunshots, witness a killing/seeing a dead body, serious road traffic accidents, the sudden death of someone and others. And some of the participants reported that the events affected their school evidenced by poor attention and concentration and these have led to a decrease in their grades. And family history of mental illness was a significant correlate.

It is therefore recommended that students, parents, school authorities, mental health professionals, and the relevant Ministries of Health and Education be aware of this condition and its correlates and to take measures to detect it early and ensure preventive measures are instituted to reduce the sequelae of the disorder by introducing mental health programs in form of psycho-education in schools, especially in crisis infected environments.

Like most studies, this present study also had some weaknesses and limitations. Of significance is the inability to compare the self-administered instrument with a clinical interview. Besides, studies have documented the unreliability of self-assessment measures as participants can over or under-report, which cannot be overlooked in this study as some may feel the need to or not to disclose.

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