Original Article

http://jbrcp.net
Journal of Biomedical Research & Clinical Practice

2018 Journal Impact Factor: 1.10
Print ISSN: 2636-7378 | Online ISSN: 2651-5865

Relationship between the Symptoms of Posttraumatic Stress Disorder and Emotional Behaviours of Children who Survived Armed Conflicts in North-Eastern, Nigeria

Tungchama FP[1], Maigida F[2], Maigari YT[1]

[1]Department of Psychiatry, Jos University Teaching Hospital and [2]Plateau State Specialists Hospital, Jos, Nigeria

***Correspondence**: Tungchama. Jos University Teaching Hospital*
***Email:** tungchamafriday@gmail.com*

Article information
Date Submitted: 13/9/2021
Date Accepted: 3/11/2021
Date Published: 27/7/2022

ABSTRACT

The study evaluated the relationship between the symptoms of Posttraumatic (PTSD) stress disorder as a mental health consequence of traumatic events on children's emotional and behavioural state in Nigeria. A consecutive sampling method was employed to interview the parents, teachers and 117 pupils in a non-conventional school. A face-to-face interview was conducted using Socio-demographic questionnaire; Strength and Difficulties Questionnaire (SDQ) and Children's Revised Impact of Event Scale (CRIES-13) to collect data in two villages in North Eastern Nigeria, who had survived the 2018/19-armed attacks. The interview was conducted in each class together with the respective teachers of each child accompanied by a parent or blood relative to ensure privacy. The mean age of the 117 pupils was 9.87±2.85. Twelve per cent and 27% of the children had borderline/ abnormal difficulties on the Total Difficulty subscale of the SDQ as rated by parents and teachers, respectively. About 26 % of 93 pupils 8 years and above had symptoms of PTSD. The parents ranting on SDQ showed a weak positive correlation between: intrusive symptoms of PSTD and expression of emotion of the pupils (r=0.283, p=0.006); Arousal symptoms of PTSD and emotion (r=0.261, p=0.012), peer relationship problems (r=0.255, p=0.014), and total difficulty scale (r=0.354, p=0.001); but between arousal and strength scale, the correlation was weak and negative (r=0.220, p=0.034). On the teachers' rating, there was a weak positive correlation between the intrusive symptoms of PTSD and emotion (r=0.417, p=0.001), peer problem (r=0.228, p=0.028) and Total difficulty (r=0.273, p=0.008) subscales; avoidance symptoms with emotion (r=0.364, p=0.001) and arousal symptoms correlated weakly with emotional (r=0.463, p=001), peer problems (r=0.250, p=0.016) and Total Difficulty (r=0.331, p=0.001) subscales. The study revealed a correlation between the various symptoms of PTSD and the children's emotion and behaviours as a result of the traumatic event.

Keywords: Armed conflict, Children, Education, Emotion and Behaviour, Posttraumatic stress disorder,

How to cite this article

Tungchama FP, Maigida F, Maigari YT. Relationship between the Symptoms of Posttraumatic Stress Disorder and Emotional Behaviours of Children who Survived Armed Conflicts in North-Eastern, Nigeria. J Biomed Res Clin Pract:2022;5(1-2):17-28. DOI: 10.5281/zenodo.6473033.

Access to the article
Website: http://www.jbrcp.net
DOI:10.5281/zenodo.6473033

INTRODUCTION

The impact of armed conflict in Nigeria and across the globe has created a fertile ground for a reasonably high prevalence of mental health problems among survivors. The impact of such events is not limited to adult survivors but also children who may develop a myriad of health related issues. Beside the direct impact of traumatic events, the normal interactive patterns between parents/ teachers and the child could also be disrupted. This may interfere with the normal development of emotional regulation resulting in various difficulties in life which may include mental health issues, problems with learning in school , and increased vulnerability to negative manipulations. These mental health problems if left untreated may present a huge burden not only on the family but the community at large[1,2,3]. In children, the impact of stressful events may imprint an undesirable stamp on their developing personality in ways difficult to measure[4]. Children have immature coping mechanisms at various stages of life as such; they may rely on adults for understanding of external events[4]. Unfortunately, the loss of family and friends due to armed attacks may shatter their world and influence their perception of self, others and the universe at large[4]. These reactions could be internalized or externalized which puts them at risk of psychological disorders, loss of trust and neglect of school, education and learning among others[5,6]. Children often develop a variety of difficulties which may span across emotional and behavioral problems[6]. One of such mental health problems children may develop as a result of traumatic events from armed conflicts or attacks is posttraumatic stress disorder[1,7]. However, this is not the only psychological sequel of trauma as PTSD can co-occur or lay a foundation for the development of other conditions such as depression, anxiety, sleep disorders and physical illnesses among others[1,2,3]. Between the months of December 2017 and January 2018, two local government areas of Numan and Demsa in Adamawa State Nigeria had a number of unpleasant experiences of violent attacks [8,9,10]. A numbers of wards were affected by this violence with many people displaced[8,10,9,1]. Due to the displacement and the subsequent resettlement, non-conventional school were established by non-governmental organizations (NGOs) in order to bring the children of the affected communities to speed with learning and education, fun and play, arts and craft, and integrate them into the community. However, during the process of resettlement, no psychosocial assessment or intervention was carried out on the children to assess their emotional and behavioural state and how it affects their mental health, learning and education. So we undertook this study to find the prevalence of symptoms of posttraumatic stress disorder and its correlation with the various subscales of the strength and difficulty scale (as rated by both parents and teachers) that defines the strength (resilience) and difficult problems of emotion, conduct, hyperactivity and peer relationship that might have been impacted by the armed attacks on the children in the setting of low and middle income country. This assessment enables a holistic approach for intervention for children with mental health difficulties. It will also help in formulating policy to stem the wave of violent armed attacks among communities.

MATERIALS AND METHODS

Study location

The study was conducted in Dong and Kikan wards of Demsa and Numan Local Government Areas (LGAs) of Adamawa state, North Eastern Nigeria. The two wards were purposively selected because of the ongoing Partners West Africa Nigeria (PWAN) project. Demsa Local government has an area of 1,825 square kilometer (sqkm) with a population of about 238, 400 as projected with 2006 Nigeria's census figure[11]. On the other hand, Numan LGA has an area of 905 square kilometer (sqkm) with a population of about 122,300 as projected with 2006 census figure[12]. Dong and Kikan villages in Demsa and Numan LGAs, respectively are the two study locations made up of predominantly Christians of the

Bachama ethnicity who also understand and speak Hausa language[11,12]. Both communities have facilities that include schools, market squares and a health center among others. The major occupation in both communities is farming (including fishing) and trading[11,12].

Study population

The population assessed was 117 pupils, aged 4-12 years, their caregivers (parents and blood relatives) and the 6 teachers.

Ethical consideration

Permission was sought and granted by the Adamawa State Ministry of Health, Yola. The study was sponsored by PWAN. PWAN is an NGO registered with the Nigeria Corporate Affairs Commission and saddled with the responsibilities of running a non-conventional educational programme for children amidst extreme armed conflict. The NGO is engaging children to counter violent extremism by providing quality of life for children through arts, numeracy, literacy, education and fun

.

Inclusion criteria

All those who were present and gave oral consent to participate were interviewed via consecutive sampling. Ninety-three pupils who were 8 years were selected and interviewed with the children's revised impact of event scale (CRIES-13).

The instruments

Short Sociodemographic instrument

carrying biodata of the participants- it assesses the age and sex of the children, and their classes

The Children's Revised Impact of Event Scale (CRIES-13)

It is a brief friendly assessment tool designed to screen children at risk for PTSD[10,13]. This instrument has good face and constructs validity and has been used to screen large samples at risk[10]. There are two versions the CRIES-8 and CRIES -13[14]. The latter was used. It includes 4 items measuring Intrusion, 4 items measuring avoidance and 5 items measuring arousal.[21] Items are scored on a nonlinear scale and responses include; 0(not at all) ,1(rarely),3(Sometimes) and 5(often).Scores range from 0-65 with a cut off of above 30 to indicate PTSD symptoms[14].

Strengths and Difficulties Questionnaire (SDQ)

it is a brief behavioural screening tool for ages 4-17 years and it exists in various versions including the parent report, teacher's report and self-report[15]. SDQ consists of 25 items ,14 describes perceived difficulties,10 perceived strengths and one is neutral[15]. Responses include not true, somewhat true and certainly true[16]. Perceived difficulties responses are scored 0-2 while perceived strengths are scored in the reverse[16]. The 25 SDQ items are divided into scales of emotional problems, conduct problems, hyperactivity problems, peer problems and prosocial scale (five items per scale).A score is calculated for each scale (range 0-10) and a total difficulties score for the four scales (excluding prosocial behaviour)[16]. Additional questions on impact of the difficulties enquires about chronicity, distress, social impairment and burden for others[17]. It is then further classified as Normal, Borderline and Abnormal[16].

Procedure

The team consisted of three Psychiatrists who are fluent in English and Hausa languages and conversant with the use of the survey instruments. The pupils were divided into three, based on their respective classes I-III (class I comprise of grade 1 and 2, class II comprises of grades 3 and 4 while class III comprises of grades 5 and 6). The interview was conducted in each class together with the respective teachers as each child comes in accompanied by a parent or blood relative to ensure privacy.

Questionnaire administration was via face to face interview to minimize risks of errors and ensure homogeneity of questioning and it was filled in by the researchers.

The SDQ parents and teacher's version was administered to the child's parent/ blood relative and the latter to the teachers. The CRIES-13 was administered to children

from 8 years and above. The data was collected over a week.

Data analysis

The Statistical Package for Social Sciences version 25 (SPSS-25) Software package was used to analyze the data. The results were presented in frequency tables, mean, standard deviation and descriptive analysis. T-test was used to compare mean values of numerical variables and Chi Square test was used to investigate the difference between categorical variables and their associations. Values of $P<0.05$ were considered statistically significant. Correlation analysis was employed to determine the direction and strength of relationship between two numerical variables that showed linear relationships on scatter plots. Values of Correlation coefficient (r) =+1 was considered as positive linear relationship, while values of (r) =-1 were considered as negative linear relationship and value of 0 considered as no relationship

.

RESULTS

Socio-demographic characteristics of pupils in both locations

A total of 117 pupils were enrolled into the study, with 59 (50.4%) and 58(49.6) from Dong and Kikan communities respectively. Their ages range between 4 and 14 years inclusive, with mean ages of 9.79±2.35 and 9.74±2.49 for Dong and Kikan, respectively. The mean ages of the two groups did not differ significantly (t=0.009, p=0.992). Gender distribution between the two locations was unequal, with more males in both communities (X^2=3.87, p=0.049

Table1: Socio-demographic characteristics of the pupils in both Locations

	Location Frequency (%)		
Variable	**Dong (n=59)**	**Kikan (=58)**	**Total(N=117)**
Age Group			
0-5	2(40.0)	3(60.0)	5(100)
6-10	32(53.3)	28(46.7)	60(100)
11>	25(48.1)	27(51.9)	52(100)
Mean age±SD	9.79±2.35	9.74±2.49	9.87±2.85
Gender			
Male	41(57.7)	30(42.3)	71(100)
Female	18(39.1)	28(60.9)	46 (100)

Mean age difference: t=0.009, p=0.992
Gender difference: X^2=3.87, p=0.049

Table 2: Distribution of various subscales of Strength and difficulties in both Locations, based on parents' SDQ rating scale

Variable	Frequency(n) Dong (n=59)	Kikan (n=58)	Total (n=117)	Statistics X^2	P
Emotion	n (%)	n (%)	N (%)	0.792	0.673
Normal	42(51.2)	40(48.8)	82(100)		
Borderline	10(55.6)	8(44.4)	18(100)		
Abnormal	7(41.2)	10(58.8)	17(100)		
Conduct					
Normal	54(51.9)	50(48.9)	104(100)	0.838	0.360
Borderline	5(38.5)	8(61.5)	13(100)		
Abnormal	0	0	0		
Hyperactivity					
Normal	55(50.0)	55(0.0)	110(100)	0.325	0.850
Borderline	2(50.0)	2(50.0)	4(100)		
Abnormal	2(66.7)	1(33.3)	3(100)		
Peer problem					
Normal	48(57.1)	36(42.9)	84(100)	5.897	**0.052**
Borderline	3(25.0)	9(75.0)	12(100)		
Abnormal	8(38.1)	13(61.9)	21(100)		
Difficulties Score					
Normal	53(51.5)	50(48.5)	103(100)	2.679	0.262
Borderline	3(30.0)	7(70.0)	10(100)		
Abnormal	3(75.0)	1(25.0)	4(100)		
Strength(prosocial)Score					
Normal	59(50.4)	58(49.9)	117(100)	-	-
Borderline	-	-	-		
Abnormal	-	-	-		

A total of 35 (30%) parents in both locations rated their children as having borderline/abnormal emotional difficulties as against 82 (70.0%) that were rated normal. With respect to conduct difficulty subscale, 13(11.1%) of all parent rated their children as having borderline difficulties, the rest 104 (89.9% were normal. Seven (6.0%), and as many as 33(28.2%) of all parents rated their children as having borderline/abnormal difficulties in hyperactivity and peer problem scales

Table 3: Distribution of various domains of Strength and difficulties in both Locations, based on Teachers' rating

	Frequency (%)				
	Location		Statistics		
Variable	**Dong(n=59)**	**Kikan(n=58)**	**Total**	**X^2**	**P**
Emotional					
Normal	46(54.8)	38(45.2)	84(100)	2.877	0.237
Borderline	4(30.8)	9(69.2)	13(100)		
Abnormal	9(45.0)	11(55.0)	20(100)		
Conduct					
Normal	51(51.5)	48(48.5)	99(100)	3.083	0.214
Borderline	1(16.7)	5(83.3)	6(100)		
Abnormal	7(58.3)	5(41.7)	12(100)		
Hyperactivity					
Normal	52(51.5)	49(48.5)	101(100)	1.477	0.478
Borderline	5(55.6)	4(44.4)	9(100)		
Abnormal	2(28.6)	5(71.4)	7(100)		
Peer problem					
Normal	47(51.6)	44(48.4)	91(100)	1.940	0.379
Borderline	9(56.2)	7(43.8)	16(100)		
Abnormal	3(30.0)	7(70.0)	10(100)		
Difficulty Score					
Normal	46(56.1)	36(43.9)	82(100)	4.040	0.133
Borderline	6(31.6)	13(68.4)	19(100)		
Abnormal	7(43.8)	9(56.2)	16(100)		
Strength (Prosocial)Score					
Normal	59(50.4)	58(49.6)	117(100)	--	--
Borderline	0	0	0		
Abnormal	0	0	0		

A total of 84(71.8%) children were rated normal on SDQ emotional difficulty subscale by their Teachers. Thirty- three (28.2%), 18(15.4%) and 26(22.2%) children in both locations were rated by their teachers as having borderline/abnormal difficulties in emotional, conduct and hyperactivity subscales respectively. So also, were 26(22.2%) and 35(30.0%) with borderline/abnormal peer problem and overall difficulties scores respectively.

Table 4: Prevalence of PTSD among pupils in the Dong and Kikan Villages

Variables	Location			X^2	P
PTSD	Dong (n) (%)	Kikan (n) (%)	Total (N) (%)		
Yes	10(21.7)	14(29.8)	24(25.8)	0.78	0.375
No	36 (78.3)	33 (70.2)	69 (74.2)		
Total	46 (100)	47 (100)	93 (100)		

The prevalence of PTSD was 25.8% of the 93 pupils. Twenty-two percent in Dong and 29.8% in Kikan. There was no statistically significant difference in prevalence of PTSD among children between the two locations

Table 5: Prevalence and socio-demographic characteristics of pupils with and without PTSD

	PTSD		Total	X^2	P
Variable	**Yes (n=24) (%)**	**No (n=69) (%)**	**N (%)**		
Location					
Dong	10(21.7)	36(78.3)	46(100)	0.786	0.375
Kikan	14(29.8)	33(70.2)	47(100)		
Gender					
Male	14(23.3)	46(76.7)	60(100)	0.540	0.462
Female	10(30.3)	23(69.7)	33(100)		
Age group					
8-10	6(14.6)	35(85.4)	41(100)	4.780	**0.029**
11>	18(34.6)	34(65.4)	52(100)		

Within the age group distribution, 18(19.4%) of the children aged 11years and above compared to 6(6.5%) of those below10years had PTSD. The difference was statistically significant, with the older children being more likely to experience PTSD (X^2=4.780, p=0.029)

Table 6: Impact of event score for children 8years and above: symptoms of PTSD

		Location		Statistics	
Variable	**Dong(n=46)**	**Kikan (n=47)**	**Total(N=93)**	X^2	**P**
Intrusion					
Less	26(59.1)	18(40.9)	44(100)	3.097	0.078
More	20(40.8	29(59.2)	49(100)		
Avoidance					
Less	29(56.9)	22(53.1)	51(100)	2.804	0.094
More	17(40.5)	25(59.5)	42(100)		
Arousal					
Less	17(40.0)	29(60.0)	46(100)	4.762	**0.029**
More	28(59.6)	19(40.4)	47(100)		

About 60% of pupils with more arousal symptoms are form dong and the difference between dong and kikan is significant (X^2=4.762, p= 0.029).

Table 7: Correlation between symptoms of PTSD and difficulties/ strength scales (parents' rating of SDQ)

	Emotion problems	Conduct problems	Hyperactivity problems	Peer Relational problems	Total SDQ difficulties	Strength scale
Intrusion	r=0.283*	r=0.209*	r=0.152*	r=0.092	r=0.313**	r=-0.032
	p=0.006	**p=0.044**	p=0.46	p=0.382	**p=0.002**	p=0.762
Avoidance	r=0.083	r=0.083	r=0.050	r=-0.061	r=0.070	r=-0.011
	p=0.431	p=0.427	p=0.631	p=0.564	p=0.507	p=0.913
Arousal	R=0.261*	r=0.168	r=0.189	r=0.253*	r=0.354**	r=-0.220*
	P=0.012	P=0.107	p=0.069	p=0.014	**p<0.001**	**p=0.034**
PTSD screen score	r=0.264*	R=0.195*	r=0.168*	r=0.121*	r=0.313**	r=-0.110*
	p=0.010	p=0.064	p=0.108	p=0.248	**p=0.002**	p=0.294

The relationship between the parents' rating of the children behaviour and difficulties on the SDQ and the symptoms of PTSD on impact event scale on the pupils, there was a statistical significant positive correlation between intrusion and emotional problem (r=0.283, p=0.006), conduct behaviour (r*=0.209, p=0.044) and total SDQ difficulties score (r*=0.313, p=0.002). for arousal symptom, there was also a positive statistically significant correlation with emotion (r*=0.262, p=0.012) and total SDQ difficulty score (r**=0.354, p<0.001) but a negative one with strength scale (r*=0.22, 0.034)*

Table 8: Correlation between symptoms of PTSD, difficulties and strength scales (teachers' rating on SDQ)

	Emotional problems	Conduct problems	Hyperactivity	Peer relational problems	Total SDQ difficulties Score	Strength scales
Intrusion	r= 0.417**	r= 0.123*	r= 0.009	r= 0.228*	r=0.273*	r=-0.178
	p=0.001	p=0.240	p=0.930	**p=0.028**	**p=0.008**	p=0.087
Avoidance	r=0.364**	r=0.177	r= -0.086	r=0.089	r=0.180	r=0.080
	p=0.001	p=0.090	p=0.411	p=0.397	p=0.084	p=0.444
Arousal	r=0.320**	r=0.186*	r=0.181*	r=0.277*	r=0.337**	r=-0.123
	p=0.002	p=0.074	p=0.082	**p=0.008**	**p=0.001**	p=0.239
PTSD screen score	r=0.463**	r =0.207*	r=0.038	r=0.250*	r=0.331**	r=-0.092
	p=0.001	**p=0.047**	p=0.718	**p=0.016**	**p=0.001**	p=0.383

*There was a positive statistically significant correlation between PTSD symptoms of intrusion and emotional problems (r**=0.417, p<0.001), peer relational problems (r*=0.288, p=0.028), and SDQ difficulty score (r*=0.228, p=0.008) as rated by the teachers on the SDQ scales. Likewise, between avoidance and emotional problems (r**=0.320, p=0.002), peer relation problems (r*=0.227, p=0.008) and total SDQ difficulty score (r**=0.337, p<0.001)*

DISCUSSION

Our assessment was aimed at finding the prevalence of the symptoms of posttraumatic stress disorder and its correlation with the behavioral changes seen in children post-armed attacks. The study also looked into the impact of the difficulties of such changes on the community as a whole and underscored the need to assess the psychological wellbeing of their caregivers (to be presented in another article).

There were 120 children that were enrolled in the schools for the two communities but only 117 children's behavior were rated by the parents and teachers using the Strength and Difficulty questionnaire because one child was ill during the period of assessment, another had not returned from the holidays and the last had been withdrawn from the program. The impact of the traumatic event was rated by the CRIES-13 on children who were eight years and above.

Socio-demographics of children

The mean ages of the 117 pupils were 9.79±2.35 and 9.74±2.49 for the two community of Dong and Kikan, respectively with no significant differences. However, there was a difference in the gender distribution in the two schools with more boys being enrolled than girls. This finding is in keeping with the general school enrollment trend in Northern Nigeria and especially in the North Eastern part of the country which has only about 47.7% of the girl child being enrolled into the primary schools[18].

Parents' rating on Strength and Difficulty Scale

Fourteen (12%) parents rated their children to have borderline/ abnormal difficulties in all the subscales of the SDQ, i.e., emotional, conduct, hyperactivity and peer problem subscales. This means that the children have emotional, conduct, hyperactivity and peer relationship problems that may create difficulties and distress to the child and the community two years post-armed attacks. But on the other hand, the high normal finding on the pro-social subscale of the SDQ which measures the strength inherent in each individual child might have a neutralizing effect on the overall difficulties these children might have. The strength scale is a positive finding that will mitigate the effect of trauma on the child and his learning ability and also on the development of mental health problems either at present or later in life. In analyzing individual subscale, we found that the parents rated more than 28 % children to have borderline/ abnormal peer relationship emotions problems while only 11% of the children have conduct and hyperactivity problems. The findings above are in keeping with a study on the impact of traumatic event such as natural disaster[19] versus a spate of communal riots (armed violence) in Gurajat, India[20], which showed only 7.6% of children affected by the earthquake fell into the abnormal score on the total difficulty scale of the SDQ. However, contrary to our study Thabet et al[21]. found 42.7% of Palestine children who were exposed to shelling (armed attacks) had abnormal scores on the total difficulty scale of the SDQ. The disproportionate finding between our study and Thabet et al could be due to the difference in duration of exposure to trauma and the time of carrying out the research. While their study was carried out about a month after the traumatic events, our study was carried two years after the incidences. Previous research showed that there is an inverse relationship between the time of exposure to trauma and the development of abnormal behavior[5]. Quite often than not, the fact that time heals[5].

Teacher's rating of strength and difficulty scale

Contrary to our finding on how parents rated their children's emotions and behaviours on the SDQ the teachers in both communities rated more than twice the number of children as compared to the parents' ratings to have borderline/ abnormal difficulties. Thought there was a difference in parents' and teachers' rating which may have reflected the differences in the challenges posed by the two environments the home and the school environs, the difference in the ratings

were found not to be statistically significant. This suggests that either of the two raters could be relied on in future ratings.

Children's Strength (prosocial) as rated by both parents and teachers

Despite the parents' and teachers' report of the difficulties in the children/ pupils, the children had 'normal strength' as shown in the pro-social scale of the SDQ. This is an indication that there is resilience in these children and it is a positive factor that could be exploited to help in mitigating mental health problems/ abnormal behavior.

Impact of the attacks and symptoms of posttraumatic stress disorder (PTSD)

Overwhelming natural and man-made disasters impact meaningfully on the mental health of survivors with Posttraumatic Stress Disorder (PTSD) symptoms being the most common[8,7,3]. In the light of the above we found that more than half of the 93 children that are 8 years and above had more symptoms of posttraumatic stress disorder (intrusion, avoidance and arousal). Based on these symptoms, about 26% met the criteria for PTSD, with majority of them from Kikan community. Perhaps, the multiple attacks on Kikan which was more recent contributed to the higher number of children with PTSD symptoms. Our finding differs from that of Sheik et al[1], where they found 4.1% prevalence of PTSD among Internally Displaced Children (IDCs) as a result of post-election conflicts. The disparity in our study and theirs may be due to the differences in methodology and instruments used. Also, the confinement of people within the camp tends to give the children some sense of security which is protective against the development of mental disorders. In addition to this, social support from government and non-governmental agencies also promotes more wellbeing unlike in our study areas where, there has been a continuum of constant threats with recurrent attacks and a big dive in farming activities affecting the parents economically which has direct link with both physical and mental wellbeing of the family and the whole community. Our study showed statistically significant correlation between the various subscales of SDQ and the core symptoms of PTSD as expressed by the children in the two communities. The intrusive and arousal symptoms of PTSD were significantly correlated with emotional expression of the children in both communities. So also, is the relationship between the intrusive symptoms of PTSD and conduct behaviour of the children as rated by the parents. For the relation between the various symptoms of PTSD and the behavioural changes, our study found out that there was a significant relation between both intrusive and arousal symptoms and the difficulties the behavioural pattern exhibited by the children impacted on the communities. As expected from our hypothesis, we found a negative correlation between arousal symptoms of PTSD and strength scale of SDQ. This finding is a positive that can be worked on in preventing and/ or mitigating the arousal symptoms in the children. On the relationship between the various subscale of SDQ as rated by teachers and the core symptoms of PTSD, we found as expected that intrusive and avoidance symptoms correlated positively with the emotion, peer relational subscale and total SDQ scores.

CONCLUSION

The study revealed that there was high prevalence of PTSD among children as a result of the traumatic events experienced by their communities. Posttraumatic stress disorder symptoms have significant relationship with the emotion and the behaviour of the children. If psychological interventions are not carried out within these communities they may continue to live with these conditions and disabilities which may gradually worsen, evolve into more severe psychological disorders and result in impairment in different areas of living and functioning.

Recommendation

Short term measures

Formulating an advocacy program for peace and conflict resolution with emphasis on forgiveness so that there can

be a future generation of peace makers to break the cycle of violence.

Build a safe environment where the people can have a sense of safety by promoting neighbourhood/ community watch.

Construction of social play grounds/groups within the communities to help children play-reenact their fears and worries from within which helps to diffuse the tension and help with relaxing.

Long term measure

Incorporate school-based mental health programs into the school curriculum which will include art-play / therapy, teaching of student s how to develop and improve in their social skills in relating with peers and teachers. The school program will also involve training teachers on basic skills in identifying strength and difficulties of a child and how to work on each child's positive factor in re-shaping the child's behaviors.

Establishment of community-based mental health programs by scaling down knowledge of mental health to the primary health managers within the community for early identification of people with mental health needs and referral to appropriate quarters.

Skill acquisition and vocational training to enable members of the communities to become independent and productive.

Establishment of trauma healing centers for the communities that will cater for the needs the community.

Limitations of the study

Time lag between the armed attacks and when the study was carried out may dampen the severity of the symptoms because time heals.

No causal-effect was established. There was no initial assessment on the children emotional and behavioural pattern prior to the armed attacks to compare with behavioural patten after the attacks.

Socially desirable response may limit the generalization of our findings

Disclosure

The study/ assessment was carried out for PWAN who sponsored the team financially in order to assess the efficacy of the non-conventional educational programme for children who had experience armed conflicts.

REFERENCES

1. Sheik TL, Mohammed A, Agunbiade S, Ike J, Ebiti WN, Adekeye O. PSYCH-TRAUMATIC, Psychosocial Adjustment, and Symptomatic Posttraumatic stress disorder among internally displaced persons in Kaduna, Northwestern, Nigeria. Frontiers in Psychiatry. 2014;5 (127)
2. Nickerson A, Bryant RA, Schnyder U, Schick M, Mueller J, Morina N. Emotion dysregulation mediates the relationship between trauma exposure, post-migration living difficulties and psychological outcomes in traumatized refugees. Journal of Affective Disorders. 2015;173:185-92.
3. Thabet AM, Thabet SS, Vostanis P. The relationship between war trauma, PTSD, depression, and anxiety among Palestinian children in the Gaza Strip. Health Science Journal. 2016;10(5):1.
4. Masten AS, Osofsky JD. Disasters and their impact on child development: Introduction to the special section. Child development. 2010;81(4):1029-39.
5. Association AP. Children and Trauma-Update for Mental Health Professionals. Washington DC: Presidential Task Force on Posttraumatic Stress Disorder in Children and Adolescents; 2008.
6. Ayalon O. Children's responses to terrorist attacks. Living with terror, working with trauma: A clinician handbook. 2004:171-200.7. Obilom RE, Thacher TD. Posttraumatic stress disorder following ethnoreligious conflict in Jos, Nigeria. Journal of interpersonal violence. 2008;23(8):1108-19.
8. Amusan L, Ejoke UP. The psychological trauma inflicted by Boko Haram insurgency in the North Eastern Nigeria. Aggression and violent behavior. 2017;36:52-9.

9. Espié E, Gaboulaud V, Baubet T, Casas G, Mouchenik Y, Yun O, et al. Trauma-related psychological disorders among Palestinian children and adults in Gaza and West Bank, 2005-2008. International journal of mental health systems. 2009;3(1):21.
10. Smith P, Perrin S, Dyregrov A, Yule W. Principal components analysis of the impact of event scale with children in war. Personality and individual differences. 2003;34(2):315-22.
11. Nigeria NPCo. DEMSA Local Government Area 2006 [cited 2020 28th January 2020]. Available from: https:www.citypopulation.de>php.
12. Nigeria NPCo. NUMAN Local Government Area in Nigeria 2006 [cited 2020 28th January 2020]. Available from: https://www.citypopulation.de>php.
13. Perrin S, Meiser-Stedman R, Smith P. The Children's Revised Impact of Event Scale (CRIES): Validity as a screening instrument for PTSD. Behavioural and Cognitive Psychotherapy. 2005;33(4):487-98.
14. Verlinden E, van Meijel EP, Opmeer BC, Beer R, de Roos C, Bicanic IA, et al. Characteristics of the Children's Revised Impact of Event Scale in a clinically referred Dutch sample. Journal of Traumatic Stress. 2014;27(3):338-44.
15. Goodman R. The Strengths and Difficulties Questionnaire: a research note. Journal of child psychology and psychiatry. 1997;38(5):581-6.
16. Goodman R. Psychometric properties of the strengths and difficulties questionnaire. Journal of the American Academy of Child & Adolescent Psychiatry. 2001;40(11):1337-45.
17. Goodman R. The extended version of the Strengths and Difficulties Questionnaire as a guide to child psychiatric caseness and consequent burden. The Journal of Child Psychology and Psychiatry and Allied Disciplines. 1999;40(5):791-9.
18. UNICEF. UNICEF annual report 2019 [cited 2020 30th january 2020]. Available from: www.unicef.org/nigeria. .
19. Kumar M, Fonagy P. Differential effects of exposure to social violence and natural disaster on children's mental health. Journal of traumatic stress. 2013;26(6):695-702.
20. Kumar M, Fonagy P. The cross-cultural sensitivity of the Strengths and Difficulties Questionnaire (SDQ): a comparative analysis of Gujarati and British children. International Psychiatry. 2013;10(2):42-5.
21. Thabet AA, Tawahina AA, El Sarraj E, Vostanis P. Exposure to war trauma and PTSD among parents and children in the Gaza Strip. European Child and Adolescent Psychiatry. 2008; 17(4): 191.