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Original Article

FUNCTIONAL DISABILITY AND DEPRESSION AMONG INTERNALLY DISPLACED PERSONS IN NORTH-EAST NIGERIA

Nwoga CN[1*], Dakwak SJ[2], Agbir TM[3], Audu MD[1], Goar SG[1], Tungchama FP[1], Davou FJ[4], Okonoda KM[1], Obindo JT[1], Maigari YT.[1]

Department of Psychiatry: University of Jos/ Jos University Teaching Hospital[1]; College of Health Sciences, Benue State University, Makurdi, Nigeria[3] and University of Abuja.[4]

Department of Psychology, University of Jos.[2]

***Corresponding author**: Dr Nwoga Charles Nnaemeka. Department of Psychiatry, Jos University Teaching Hospital, PMB, 2076, Jos, Plateau state. **E-mail**: nwogacharles@gmail.com*

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Abstract

A common factor in the development of mental disorders, including depression, is exposure to trauma. Boko Haram crisis has ravaged the North East part of Nigeria and has left indelible traumatic effect on the inhabitants especially the Internally Displaced People (IDPs) who fled their homes for survival. Previous studies reported high rates of depression and disability among IDPs. We set out to investigate the prevalence of depression, disability and correlates among the IDPs in two selected camps in Yobe state. We carried out a cross sectional study among 422 adult IDPs selected through a systematic sampling method. One hundred and ninety two (45.5%) were males. The mean age of the subjects was 39.4±18.50 years with range of 18-80 years. Of the 422 IDPs, 166(39.3%) had probable depression and 76(18.0%) had definite depression. Factors significantly associated with diagnosis of depression were; age (p=0.028), marital status (p=0.001), living condition (p=0.001), general health (p=0.001) and WHODAS 2.0 scores (p=0.001). Logistic regression revealed that age <20years (OR=8.4;p=0.001), being an IDP in the camp irrespective of the living condition (OR=3.6;p=0.001), being single/unmarried (OR=10.0;p=0.048) and comorbid PTSD predicted diagnosis of depression. Having a disability score in the severe range (OR=5.7;p=0.001) strongly correlated with having depression in the study. There is a high rate of depression among IDPs in North-east, Nigeria. Having a diagnosis of depression correlated well with the severity of disability in study. We recommend regular psychiatric services as part of routine medical services to IDPs as health cannot be complete without mental health.

***Keywords:** Boko Haram, Depression, Disability, Internally Displaced People, Nigeria.*

Introduction

Boko Haram terrorism in North-East states of Nigeria has led to the displacement of over 2.1million people with about 1.8 million of them being displaced within states in Nigeria.[1] The Internally Displaced People (IDP) are predominantly from the worse affected states of Maidugri, Yobe and Adamawa. The civilian population in these states witnessed indiscriminate killings, assaults, abduction of their children to become fighters and sex slaves, labourers and civilian shields. The IDPs fled their home towns and settled into camps in an attempt to avoid the ugly incidents, get access to food aids and government security. Studies from post conflict South Sudan reported a prevalence of 50%[2] for depression among IDPs while Agbir et al found 62.3%[3], prevalence among IDPs in Nigeria. Sheikh et al[4] reported a probable diagnosis of 59.7% and a definite diagnosis of 16.3% in their study of

depression among internally displaced people in Kaduna, North-West, Nigeria. According to the 2015 Global burden of disease studies[5], depression is among the 10 leading causes of years lived with disability for both sexes and ranked 4th particularly. We set out to investigate the prevalence of depression, disability and correlates among the IDPs in two selected camps in Yobe state. The two camps were selected and approved by the Yobe State Emergency Management Agency as having the highest population of IDPs in the state at the time of the study.

Justification for the study

Majority of studies have focused mainly on psychological symptoms of internally displaced people. There is a paucity of data on disability among internally displaced people. This study aimed at filling this gap in knowledge and to stimulate interest in looking at how disability affects the symptoms of depression among people living in IDP camps.

Materials &Methods

Study location

The study took place in July, 2017 in Kukareta and Mallam Aliyu Mohammed Gombe IDP camps in Damaturu, Yobe state. These were the two major camps housing IDPs mainly from Borno, Adamawa and Yobe states, within Damaturu, the Yobe stste capital.

Study population

Following increasing Boko Haram attacks in the North East states of Borno, Adamawa and Yobe, majority of the inhabitants fled to other places for safety and access to food aids. The first group of internally displaced persons arrived and settled in Damaturu, Yobe State in government approved camps five years prior to onset of this study. As they reported to the State Emergency Management Agency, they were allocated to various camps, depending on availability of structures and space. Kukareta and Mallam Aliyu Mohammed Gombe farms had the greatest number of IDPs at the time of the study. The two camps contained an estimated population of 11,000 which is about 61% of all IDPs in the state at the time of the study. The IDPs were defined as people living in officially recognised IDP camps in the state and who have been displaced from their communities as a result of the Boko Haram insurgency.

Study design

We carried out a cross sectional study among the IDPs in the two camps.

Sample size determination

A minimum sample size of 402 was calculated using the Leslie and Kish[6] formula for estimating sample size for cross-sectional study.

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

where n = minimum sample size; $Z\alpha$ set at 5%significant level = 1.96 and p is the estimate of prevalence of depression among the IDPs in a similar study in Nigeria = 62.3% ^{2} = 0.62; d = level of precision (5%) and q = 1-p.

$$n = \frac{(1.96)^2 \times 0.62 \times 0.38}{0.05^2}$$

$$n = 362$$

Adjusting for non-response rate of 10% = $\frac{nr}{(1-r)}$ where n = calculated sample size and r = 10

$$n = \frac{362 \times 10}{1 - 10}$$

$$n = 402$$

Thus minimum sample size = 402. For this study, we sampled 450 IDPs.

Sampling technique

Eighteen interviewers familiar with the cultural environment were recruited and trained by the principal investigators for five days on interviewing skills. The instruments were translated into Hausa and back translated to English. Systematic sampling technique was employed to select IDPs for the study. A list of the IDPs in the two camps gotten from SEMA comprised 11,000 IDPs in 3,600 households, constituting about 61% of the total IDPs in the state at the time of the study. These households were well documented and numbered, the documentation and numbering already in use for other interventions going on in the camps within the state at the time of the study We excluded all the IDPs aged less than 18years which numbered 4, 057 leaving us with 6,943 as our final sample frame. We divided 6,943 by

our sample size and got a sampling interval of 17. The first subject was selected from the
sampling frame using a table of random numbers and the household identified. Subsequent IDPs and their households were selected using the sampling interval until the sample size was completed. Face to face interview with selected members of households were conducted in private confidential settings. Statistical analysis were done using SPSS version 21.

Inclusion criteria

All IDPs in the two camps at the time of the study and who consented to the study were eligible to participate in the study.

Exclusion criteria

We excluded all IDPs aged less than 18 years from the study. Those already diagnosed with mental illness prior to onset of Boko Haram crisis and consequent displacement were excluded from the study.

Study instruments

A socio-demographic questionnaire designed by the researchers was used to collect socio-demographic information from the subjects such as age, gender, marital status, educational level and type of abode within the camp. Presence of depression was screened for using Hopkins Symptom Checklist-25 (HSC-25). The answers were rated on a likert scale of 1(not at all) to 4(extremely). Scores were summed up and divided by 15(the number of items) to derive the depressive scores for each individual. Those with total score of >1.75 were considered to have probable depression. The HSC-25 has been widely used in studies among displaced people, including in Nigeria[4].

Definitive diagnosis of depression was made with the Composite International Diagnostic Interview (CIDI) from among those subjects with probable depression. CIDI is a highly structured clinical interview instrument with good cross-cultural validity and has an Hausa version that was used in a survey in Nigeria[4, 7]. The author is trained and certified to use CIDI.

The Harvard Trauma Questionnaire (HTQ)[8] was used for screening for symptoms of PTSD based on the DSM-IV criteria. The questions were scored on a likert scale of 1-5. The respondents score were summed up and divided by 16 (the number of questions) to derive each individuals score. Individual total score >2.5 were considered symptomatic for PTSD[8]. The HTQ has been validated in many cross-cultural studies and the cut off of 2.5 has been standardized for various versions of the HTQ[4]. Translation from English to Hausa and back translation to English was done by the study team and followed the recommended guidelines[8]. Definite diagnosis of PTSD was made using the PTSD module of CIDI.

The World Health Organization's Disability Assessment Schedule 2.0 (WHO-DAS 2.0) was used to measure functional disability which assesses functioning for six domains: communication, mobility, self-care, interpersonal relationship, activities, and participation. It has cross cultural applicability and good psychometric properties and has been widely used in disability studies in Nigeria[9]. The WHODAS 2.0 assesses disability in daily life through 12 items scored on a 5-point Likert Scale (1–5) in the last 30 days. The general disability score was generated by adding the scores of the 12-items that concern disability in various life domains, in accordance with the World Health Organization (WHO) instructions for the instrument.

Data collection and procedure

Eighteen data collectors fluent in English and Hausa were recruited and trained for five days on the use and technique of the interview prior to the study. Data was collected over a period of 10 days, with average interview time being 45minutes. The process was supervised by psychiatrists and a clinical psychologist. The psychiatrists conducted the diagnostic interviews using the CIDI questionnaire.

Data analysis

Data analysis was done using SPSS version 21. Descriptive and analytic statistics was employed for summarising data and testing for significance and predictors. Bivariate and logistic regression analysis was done to identify factors associated with symptomatic depression. Chi square test of significance was carried out and p value less than 0.05 was entered into the logistic regression. Adjusted odds ratios (AORs) were determined with 95% confidence interval (CI) to identify predictors of depression.

Ethical consideration

Ethical clearance was sought and obtained from Plateau State Specialist Hospital prior to commencement of the study. The IDPs were required to give an informed consent before inclusion in the study after explaining the nature of the study and their rights as participants including the confidentiality of the information given. Those with psychological disturbances got medical advice from the psychiatrist and psychologist and subsequently referred for specialist treatment.

Results

A total of 450 persons were selected and 18 of them refused consent while 20 people did not complete the interview and were removed from the final analysis. This gave 422 as the final sample analyzed.

Sociodemographic characteristics

One hundred and ninety-two (45.5%) were males. The mean age of the subjects was 39.4±18.50 years with range of 18-80 years. Two hundred and ninety-three (69.4%) of the respondents were married at the time of the study, 116 (27.5%) were single and 13(3.1%) were either widowed or divorced as shown in **Table 1.** The table also shows the type of abode, living condition, general health, age distribution and educational status of the respondents. The range of duration of stay in the IDP camps were 2-4years (Mean=2.90±0.49).

Prevalence of depression

Of the 422 IDPs, 166(39.3%) had probable depression and 76(18.0%) had definite depression. Factors that were significantly associated with diagnosis of depression in the study were age (p=0.028), marital status (p=0.001), living condition (p=0.001), general health (p=0.001) and WHODAS 2.0 scores (p=0.001) as shown in **Table 2**.

Logistic regression analysis revealed that age <20years (OR=8.4;p=0.001) in the study compared to other age ranges is more likely to have depression. Also being an IDP in the camp irrespective of the living condition (OR=3.6;p=0.001) significantly predicted depression in the study. Being single/unmarried (OR=10.0;p=0.048) in the study compared to being married was more likely to predict diagnosis of depression. Having a disability score in the severe range (OR=5.7;p=0.001) strongly correlated with having depression in the study (Table 3).

Disability scores of the participants.

The disability scores were mild 244(57.8%), moderate 74(17.5%), severe 104(24.6%) and 422(100.0%). A significant relationship existed between depression and disability scores of the participants. Depression was more among those with severe disability scores 72(17.1%) compared to the mild and moderate ranges (**Table 4)**.

Co-morbidity between depression and PTSD

One hundred and twelve (67.5%) of the subjects who had probable depression also had a diagnosis of PTSD. Similarly, 52(68.4%) of those with definite depression also had co-morbid PTSD. Having a diagnosis of PTSD was significantly associated with depression (**Table 5**) and also predicted diagnosis of depression in regression analysis (**Table 4**).

Table 1: Demographic characteristics of respondents

Variables	Frequency	Percentage (%)
Gender		
Male	192	45.5
Female	230	54.5
Total	422	100.0
Age Group		
<20	96	22.7
20-40	182	43.1
41-60	88	20.9
>60	56	13.3
Total	422	100.0
Marital Status		
Single	116	27.5
Married	293	69.4
Divorced/widowed	13	3.1
Total	422	100.0
Formal Education		
Yes	55	13.0
No	367	87.0
Total	422	100.0
General Health		
Very good	85	20.1
Good	160	37.9
Bad	143	33.9
Very bad	34	8.1
Total	422	100.0
Type of Abode		
Tent	91	21.6
Open hall	257	60.9
Personal house	46	10.9
Mosque	28	6.6
Total	422	100.0
Living Condition		
Good	215	50.9
Bad	207	49.1
Total	422	100.0
Disability Score on WHODAS 2.0		
Mild	244	57.8
Moderate	74	17.5
Severe	104	24.7
Total	422	100.0
Duration of displacement (years)		
5	74	17.5
6	316	74.9
7	32	7.6
Total	422	100.0

Table 2: Relationship between depression and sociodemographic variables

Variable	Total	Depression		df	P value
		Yes	No		
Age					
<20	96	16	80	1	**0.028**
20-40	182	31	151		
41-60	88	21	69		
>60	56	8	48		
Total	422	76	346		
Marital status					
Single	116	7	109	2	**0.001**
Married	293	69	224		
Divorced	13	0	13		
Total	422	76	346		
Living condition					
Good	215	20	195	1	**0.001**
Poor	207	56	151		
Total	422	76	346		
General health					
Very good	85	13	72	3	**0.001**
Good	160	15	145		
Bad	143	41	102		
Very bad	34	7	27		
Total	422	76	346		

Table 3: Independent predictors for definite depression in the study

Variable	Odd ratio	df	95% Confidence Interval		p value
			Lower	Upper	
Age					
<20years	8.423	1	2.590	27.393	**0.001**
21-40years	1.937		0.791	4.741	0.148
41-60years	1.499		0.565	3.977	0.416
Marital status					
Single	10.0	1	1.021	98.349	**0.048**
Married	0.1		0.000	0.979	0.999
Living condition					
Good	3.616	1	2.080	6.286	**0.001**
Bad	2.696		1.220	5.389	**0.013**
General health	1.237	1	0.847	1.807	0.272
Disability score on WHODAS 2.0					
Mild					
Moderate	5.781	1	2.227	15.008	**0.001**
Severe	1.964		0.898	4.298	0.910
	1.000				
Comorbid PTSD	2.496	1	1.420	4.387	**0.001**
	2.250				

Table 4: Relationship between disability scores and depression

	WHODAS 2.0 SCORE					
Depression	**Mild**	**Moderate**	**Severe**	**Total**	**df**	**p value**
YES	45(10.7%)	49(11.6%)	72(17.1%)	166(39.3%)	2	**0.001**
NO	199(47.2%)	25(5.9%)	32(7.6%)	256(60.7%)		
Total	244(57.8)	74(17.5%)	104(24.6%)	422(100.0%)		

Table 5: Comorbidity between depression and PTSD

	PTSD		Total	df	p value
	Yes	No			
Probable depression					
Yes	112(67.5%)	54(32.5%)	166(100.0%)	1	**0.001**
No	232(90.6%)	24(9.4%)	256(100.0%)		
Total	344(81.5%)	78(18.5%)	422(100.0%)		
Definite depression					
Yes	52(68.4%)	24(31.6%)	76(100.0%)	1	**0.001**
No	292(84.4%)	54(15.6%)	346(100.0%)		
Total	344(81.5%)	78(18.5%)	422(100.0%)		

Discussion

There were more females in this study. This is in keeping with other studies that found more females than males in IDP camps.[2,4] This is probably because most males may either be in the farm or looking for daily bread at the time of the study. It is also possible that quite a number of the males have joined the terrorist group and may be out fighting or have been killed in the process. The prevalence of depression recorded was 18.0%. This compares well with studied that used structured diagnostic instruments[4,10] as against those that used only screening instruments.[2,11] A common factor in the development of mental disorders, including depression, is exposure to trauma, which all the respondents had. It is known that genetic , biological, psychological, cognitive, personality traits and environmental factors of an individual prior to onset of stress or trauma could make one more vulnerable to having disorders such as depression.[12] Also, refugee inflow into a community increases economic activities around the camps which tend to favour the host community but further increases the probability of the displaced people having psychological disorders such as depression.[13]

Disability levels were equally high among the IDPs. Majority of the depressed IDPs had depression in the severe stages. This agrees with the assertion that disability is a risk factor for depression.[14] Developing a disability as an adult, whether from trauma or not creates a lot of challenges that has potential to generate negative feelings, and for many people, depression. These could be through loss of life direction or purpose, decrease self esteem, sadness over frustration and struggle of living with the disability. Disability is challenging enough to deal with and developing related depression will make life even more difficult.

We also noted a high prevalence (52%) rate of comorbid PTSD. This is similar to studies in other post conflict settings.[15] Thus it is logical to conclude that more than 4 years after displacement, the prevalence of disability, depression and comorbid PTSD were quite high among the IDPs.

A significant association was found between younger age (<20years), being unmarried, poor living condition inside the camp, poor general health, high disability score and having a diagnosis of depression. The younger age and those not married may be worried about how the Boko Haram crises have truncated their ambitions and future. Poor general health and poor living condition may give rise to negative feelings that can precipitate depression while also depression may negatively impact people's appraisal of their personal characteristics while in the camp.

Independent predictors of depression in the study included, age <20 years, living in IDP camp, being unmarried, severe disability score and comorbid

PTSD. Several studies reported similar association between PTSD and depression.[12,13] Comorbidity between depression and PTSD could be generally explained by the effect of exposure to traumatic events, supporting the shared vulnerability status.[14,15] Older age, marriage and possibly having children are protective factors for depression following exposure to trauma.[2,12,16]

The strength of this study lies in the selection technique and the use of structured diagnostic instrument.

The findings in this study cannot be generalized to the general population but only to adults in North-East, Nigeria being ravaged by Boko Haram, except when other studies find similar results among traumatized communities in Nigeria. It cannot be generalized to other traumatic events like rape, earthquake and other disasters. Furthermore this research assumed that the findings on depression and disability were related to the Boko Haram crisis in North-East, Nigeria. Prior history and diagnosis of depression and disability as well as those arising as result of the living conditions in the camps were not properly accounted for and could possibly confound our findings. Loss events and other risk factors of depression were also not properly taken into consideration.

Conclusion

High rate of disability among the IDPs in Yobe state. There is a high rate of depression and comorbid PTSD among IDPs in North-east, Nigeria. Younger age, being unmarried, living in IDP camp and comorbid PTSD independently predicted depression in the study. Having a diagnosis of depression correlated well with the severity of disability in study.

Recommendation

We recommend psychological screening for inmates of all IDP camps in North-East, Nigeria. Psychological first aid should be offered to those with significant symptoms in an attempt to reduce disability among them. Regular psychiatric services should be a routine part of medical services to IDPs as health cannot be complete without mental health.

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