

Prevalence of Violence and Symptoms of Post-Traumatic Stress Disorder among Victims of Ethno-Religious Conflict in Jos, Nigeria

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Abstract

Objective: This study was carried out to determine the prevalence of exposure to violence among the population of a state in north-central Nigeria which had experienced waves of ethno-religious violence as well as screen for symptoms of post-traumatic stress disorder (PTSD) among them.

Method: A cross-sectional descriptive survey of the target population was carried out using an interviewer-administered semi-structured questionnaire. Four questions were used to screen for PTSD and a positive answer to three or more questions indicated presence of PTSD. Two of the Local Government Areas (LGAs), which had experienced repeated ethno-religious violence in the state, were studied and one adult was selected per household.

Results: A total of 204 respondents were studied comprising 98 (48.0%) males and 106 (52.0%) females. Mean age was 43.7 ± 20 years. Two-thirds of the respondents had experienced some form of violence ranging from seeing someone getting killed 36.8%, someone getting stabbed 16.7% or shot 20.6% to loss of property 31.4% and relocation from residence 26%. Symptoms of PTSD experienced by the respondents included constant watchfulness and being easily startled (68.1%), denial or avoidance of thoughts of the crisis (67.6%), numbness and detachment from surroundings (52.9%) and nightmares (42.2%). Crude Prevalence of PTSD in the respondents (PTSD Score ≥ 3) was 46.1% (95% confidence interval [CI] 39.6%-53.9%). Personal experience of ethno-religious violence, loss of property or means of livelihood, death of a family member/friend were all found to be statistically significantly associated with presence of PTSD ($p \leq 0.05$).

Conclusion: PTSD is common in this cohort exposed to ethno-religious crises. Relief efforts for victims of the crisis should include mental health assessment, referral for severe cases and treatment for those with PTSD.

Keywords: Violence; PTSD; Religious conflicts; Victims

Introduction

Many communities in Africa continue to be affected by long-standing conflicts with mass traumatization of their populations. Nigeria, as a country has a variety of low grade conflicts that result in chronic bloodletting without the country actually being in an open state of war. Over the past decade, the political crisis over 'indigene' rights and political representation in Jos, capital of Plateau State, Nigeria, has developed into a protracted communal conflict [1]. This recurring conflict often involves maiming, killing, burning of houses, motor vehicles and other properties. The effects of these crises include injuries, emotional trauma, and disabilities, loss of homes and livelihood as well as death. At least 4,000 and possibly as many as 7,000 people have been killed since late 2001, when the first major riot in more than three decades broke out in Jos. After the 2008 riot, more than 10,000 were displaced, while violence in 2010 resulted in about 18,000 people becoming internally displaced. All sides suffer a massive loss due to livelihoods destroyed [1].

In addition to creating large numbers of immediate direct casualties in combatants and civilians, these conflicts have the potential to influence public and mental health outcomes in several ways [2-4]. The mental health effects of armed conflict on civilians are enormous

and can last a lifetime. One major mental health effect of conflict is post-traumatic stress disorder (PTSD) [5]. PTSD is an anxiety disorder which consists of a syndrome that develops after a person sees, is involved in, or hears of an extreme traumatic stressor. The person reacts to this experience with fear and helplessness, persistently relives the event, and tries to avoid being reminded of it [6-10]. The disorder usually develops within weeks, months or even years after the occurrence of the traumatic event. Symptoms of PTSD can include nightmares and flashbacks, insomnia, lack of concentration, and feelings of isolation, irritability and guilt [11,12].

Prevalence of PTSD is about 8% in the general population while lifetime prevalence rates range from 5-75% among high risk groups whose members experienced traumatic events [13,14]. The Center for Disease Control and Prevention, (CDC) Atlanta, reported that about 30-70% of people who have lived in war zones suffer from symptoms of PTSD and depression [15]. Studies carried out among offspring of Holocaust survivors revealed that there was a higher prevalence of mental disorders such as mood, anxiety and substance abuse disorders as well as PTSD among them than in the general population of Jews who did not experience the holocaust [16]. A study carried out among residents of Jos, Nigeria some months after the first major ethno-religious riot in 2001 found a prevalence of PTSD symptoms of 41% [11]. Lifetime PTSD prevalence rates are generally higher in

populations exposed to chronic conflicts or recurrent natural disasters [17,18].

This study was carried out to determine prevalence of exposure to ethno-religious violence among the respondents and subsequently screen them for symptoms of post-traumatic stress disorder.

Methodology

This was a community-based survey was conducted in Plateau State which is located in the North Central region of Nigeria and has its capital city in Jos. The state has a population of 3,206,531 [19] and is divided into three senatorial zones and 17 Local Government Areas (LGAs). The northern senatorial zone comprising Jos North, Jos South, Jos East, Riyom, Barkin-Ladi, and Bassa LGAs has witnessed several ethno-religious conflicts since 2001. This zone is populated by mainly Berom, Hausa, Fulani, Anaguta, Jarawa and Amo ethnic groups [20]. The Berom ethnic group is found in four of the six LGAs in the zone and they are predominantly Christians while the Hausa and Fulani ethnic groups who are also found in this zone are predominantly Muslims. Jos North and Jos South LGAs which were purposively selected for this study are among the areas hardest hit by the conflict. The two LGAs have an estimated population of 437,217 and 311,392 respectively [19]. Jos North LGA comprises one administrative district called Gwong but is further divided into 16 political wards while Jos South is divided into four districts namely Du, Gyel, Vwang and Kuru and 20 twenty political wards.

In September 2012, a free medical outreach was embarked upon by the Special Task Force (STF) on Security in the state in collaboration with the Plateau State Chapter of the Nigerian Medical Association (NMA) in order to provide relief services to the victims of the crisis in Jos North and Jos South LGAs. This survey was part of the free medical outreach. The last major outbreak of violence/conflict in these localities had occurred in July 2012 which was about two months before this study took place. Respondents who were aged 18 years and above and had resided in the study area for a year or more were included in the study. The research team comprised of trained doctors and volunteers led by the first and last authors. The Special Task Force is made up The Nigerian Army, Navy and Air Force personnel as well as The Nigerian Police. This task force was deployed by the Nigerian government to the areas affected by the conflict for peacekeeping operations. They helped in providing security for the research team in the course of this survey.

The sample size for this study was calculated using the formula for descriptive studies, $n = z^2pq/d^2$ where n =calculated sample size, z =standard normal deviate at 95% confidence interval=1.96, p =prevalence rate of PTSD, $q=1-p$, and d =precision level of 5%=0.05. Using a lifetime PTSD prevalence rate of 15% [17], therefore if $p=0.15$, $q=1-0.15=0.85$,

$$n = 1.9620.15 \times 0.85 = 195 / (0.05)^2$$

An adjustment of the estimate of the sample size to cover for non-response rate was made by adding 20% of the sample size calculated to the sample to give 234.

Multi-stage sampling technique was used to select respondents. In each of the two LGAs selected for the study, simple random sampling technique by balloting was used to select a ward from the list of wards. Dogo Dutse and Bukuru Wards were therefore selected from Jos North and Jos South LGAs respectively. In each selected ward, simple random sampling was also used to select a community from the list of

communities in each ward. Bukuru Central and Congo Russia Streets were therefore selected as the communities to be studied. All the houses in the two selected communities were visited and one adult was selected per household using a ballot if more than one adult was present at the time of data collection. A total of 150 and 100 respondents were therefore selected from Jos North and Jos South LGAs respectively.

Data was collected from respondents via quantitative means with the aid of an interviewer-administered semi-structured questionnaire. Information obtained from them included their bio data, exposure to the ethno-religious violence and the form of violence witnessed. Four questions adapted from the Primary Care PTSD (PC-PTSD) Screening Tool, an instrument developed by the Education Division of the National Center for PTSD, United States of America, were used to screen for PTSD [21,22]. Respondents were asked if in the past month, they had had recurring nightmares or unwanted thoughts about the crisis; if they had tried hard not to think about it or went out of their way to avoid situations that reminded them of it; if they were constantly on guard, watchful, or easily startled and whether they felt numb or detached from others, activities, or their surroundings since the crisis. A positive response to three or more questions indicated presence of PTSD.

Written informed consent was obtained from Ward Heads and all the respondents. Anonymity and confidentiality of all the information obtained were assured and maintained. Data generated was entered and analyzed using EPI Info 3.5.2, a statistical package developed by the CDC, Atlanta, USA. Frequencies and proportions were computed for qualitative variables while mean and standard deviation were reported for quantitative variables. Chi square was used to test for association between categorical variables while logistic regression analysis was carried out on factors associated with presence of PTSD symptoms. Statistical significance level was set at $p \leq 0.05$ at 95% confidence interval.

Results

A total of 250 people were selected for the study but only 204 (81.6%) completed the questionnaires. The mean age of the respondents was 43.7 ± 20 years. Males constituted 48% of the respondents ($n=98$). Majority were married (69.1%), and of the Hausa ethnic group 58.8%. In terms of educational status, 32.2% had no formal education followed by those with secondary education (29.2%); only 14.4% had tertiary education. One hundred and thirty-seven (67.2%) respondents had witnessed some form of ethno-religious violence ranging from seeing someone get killed (36.8%), someone get stabbed (16.7%) or shot (20.6%) to loss of property (31.4%), and relocation from residence (26%). Eighteen (8.8%) respondents reported that they had been hospitalized as a result of injuries sustained during the violence. The prevalence of PTSD was 46.1% among the respondents (95% confidence interval [CI] 39.6%-53.9%) as 96 of them had PTSD Score >3 . There was no statistically significant difference in the mean ages of those with PTSD and those without PTSD (41.3 ± 20 years and 45.8 ± 19 years respectively; $t=1.605$, $p=0.110$). There was no statistically significant association between presence of PTSD and these following variables (sex, education and marital status)(Table 1).

Being witness to a form of ethno-religious violence was statistically significantly associated with the presence of PTSD ($p<0.001$). Loss of property/means of livelihood ($p=0.013$), death of a friend or family

member ($p=0.003$) and relocation as a result of insecurity (0.043) were all statistically significantly associated with the presence of PTSD. A history of hospitalization following injuries sustained during the violence was not statistically significantly associated with presence of PTSD. ($p=0.757$) (Table 1)

Symptoms of PTSD experienced by the respondents included constant watchfulness and being easily startled (68.1%), denial or

avoidance of thoughts of the crisis (67.6%), numbness and detachment from surroundings (52.9%) and recurring nightmares (42.2%). Logistic regression of the factors associated with the presence of PTSD among respondents did not yield any statistically significant association between them and the presence of PTSD (Table 2).

Variable	Frequency (%) (n = 204)	PTSD(%) (n=96)	No PTSD(%) (n=108)	x2 dfp
Age (years)				
	27 (13.2)	10 (10.4)	17 (15.7)	14.419 5 0.011
20-29	46 (22.5)	31 (32.3)	15 (13.9)	
30-39	26 (12.7)	14 (14.6)		
40-49	39 (19.1)	17 (17.7)	12 (11.1)	
50-59	27 (13.2)	7 (7.3)	22 (20.4)	
≥60	39 (19.1)	17 (17.7)	20 (18.5)	
Mean age	43.7±20	41.3±21	22 (20.4)	1.605 1 0.110+
Sex				
Male	98 (48.0)	41 (42.7)	57 (52.8)	2.064 1 0.151
Female	106 (52.0)	55 (57.3)	51 (47.2)	
Marital Status				
Married	141 (69.1)	64 (66.7)	77 (71.3)	77 (71.3)
Single	24 (25.0)	22 (20.4)		
Others	17 (8.3)	8 (8.3)	9 (8.3)	
Ethnicity				
Hausa	120 (58.8)	55 (57.3)	65 (60.2)	Fisher's p=0.989
		4 (4.2)	6 (5.6)	
		5 (5.2)	5 (4.6)	
		27 (28.1)	33 (30.6)	
Fulani	14 (6.84)			
Yoruba	10 (4.9)			
Others*	60 (29.4)			
Education				
Tertiary	29 (14.4)	17 (18.1)	12 (11.1)	4.674 3 0.197
		28 (29.8)	31 (28.7)	
		17 (18.1)	32 (29.6)	
		32 (34.0)	33 (30.6)	
Secondary	59 (29.2)			
Primary	49 (24.3)			

None	65 (32.2)			
Witnessed any form of ethno-religious violence				
Yes	137 (67.2)	74 (77.1)	62 (57.4)	10.891 1 <0.001
No	67 (32.8)	22 (22.9)	46 (42.6)	
Type of Violence Witnessed**				
Someone got killed	75 (36.8)	40 (41.7)	35 (32.7)	2.181 1 0.139
Someone got stabbed	34 (16.7)	17 (17.7)	17 (15.7)	0.193 1 0.660
Someone got shot	42 (20.6)	20 (20.8)	22 (20.4)	0.023 1 0.878
Loss of property/means of livelihood	64 (31.4)	38 (39.6)	26 (24.1)	6.147 1 0.013
Death of a family member/friend	75 (36.8)	44 (45.8)	31 (28.7)	8.582 1 0.003
Relocation as a result of insecurity	53 (26.0)	31 (32.2)	22 (20.4)	4.090 1 0.043
Hospitalization due to crisis				
Yes	18 (8.8)	9 (10.3)	9 (8.3)	0.095 1 0.757
No	186 (91.2)	87 (90.6)	99 (91.7)	
Lost family member to crisis				
Yes	90 (44.1)	41 (42.7)	49 (45.4)	
No	114 (55.9)	55 (57.3)	59 (54.6)	0.063 1 0.803
Experienced nightmares				
Yes	86 (42.2)	68 (70.8)	18 (16.7)	
No	118 (57.8)	28 (29.2)	90 (83.3)	
Avoidance symptoms				
Yes	138 (67.6)	87 (90.6)	51 (47.2)	
No	66 (32.4)	9 (9.4)	57 (52.8)	
Easily startled				
Yes	139 (68.1)	92 (96.8)	47 (43.5)	
No	65 (31.9)	4 (4.2)	61 (56.5)	
Numb, detached				
Yes	108 (53.0)	79 (82.3)	29 (26.9)	
No	96 (47.0)	17 (17.7)	79 (73.1)	

Table 1: Socio-demographic Characteristics of Respondents, + T-test, *Berom, Rukuba, Ngas, Mghavul, Jarawa, Anaguta, ** Multiple responses allowed

Variable	Odds Ratio	95%	C.I.	Coefficient	S. E.	Z-Statistic	P-Value
Age	0.9962	0.9808	1.0118	-0.0038	0.0079	-0.4851	0.6276
Death of a friend/ family member	1.5756	0.7754	3.2018	0.4547	0.3618	1.2567	0.2088

Relocation	0.9650	0.4374	2.1286	-0.0357	0.4037	-0.0883	0.9296
Witnessed ethno-religious violence	1.9420	0.9328	4.0429	0.6637	0.3741	1.7741	0.0760
Loss of Home/means of livelihood	1.4248	0.6947	2.9223	0.3541	0.3665	0.9661	0.3340

Table 2: Logistic Regression of factors associated with presence of PTSD among respondents

Discussion

This study revealed that about two thirds of the respondents (67.2%) had witnessed some form of violence or the other during the various ethno-religious conflicts occurring in the state. This high level of exposure to violence may be because tensions between ethnic groups rooted in allocation of resources, electoral competition, fears of religious dominance, and contested land rights often explode into violence at the slightest of provocation. These conflicts often erupt over the most flimsy of reasons ranging from arguments and misunderstanding among residents, theft, and even just mutual suspicion. Reprisals attacks are also a common occurrence in the study area. This finding is similar to that of a study carried out among residents of Kashmir, India which reported a lifetime prevalence for any traumatic experience of 58.69% and specifically exposure to combat or war zone as 73.23% [23]. In another study carried out among residents of East Timor who had endured 25 years of Indonesian Military occupation, the results revealed that 76% of them had experienced direct exposure to combat situation (76%) [24]. Seeing someone get killed was the most often reported form of violence in this study by 36.8% of the respondents and 41.7% of those who had experienced this form of violence had PTSD. Our study also revealed that experience of violence was found to be statistically significantly associated ($p < 0.001$) with the presence of symptoms of PTSD as 77.1 % of those with PTSD had witnessed violence compared with 57.4% of those without PTSD. This finding is corroborated by Yaswi and Haque who found that there was a statistically significant relationship between presence of PTSD symptoms and exposure to direct violence following the longstanding conflict in Kashmir, India [18].

Prevalence of PTSD in this study was 46.1% and this is slightly higher than the findings in an earlier study by Obilom and Thatcher carried out among Jos residents where prevalence of PTSD was found to be 41% [11]. This implies that the level of PTSD among the residents of Jos may have increased since the year 2001 when the conflict first began. Repeated exposure to mass violence may be responsible for this increase. Another reason for the high prevalence may be because the population we studied was among those most severely affected by these recurring conflicts. Other studies carried out in Kashmir, East Timor and Timor-Leste among populations exposed to recurrent violence revealed the prevalence of PTSD to be 15.9% [17,23], 34% [24], and 16.7% [25] respectively. In a study carried out among Sudanese refugees living in Uganda, prevalence of PTSD was found to be as high as 50% [26]. The prevalence of PTSD may be expected to decline if there are no more exposures to violent events or trauma.

Studies have previously shown that interpersonal violence is more likely to provoke PTSD than accidents and natural disasters [27]. Being witness to a form of ethno-religious violence was found to be statistically significantly associated with the presence of PTSD in our study. This is also corroborated by Obilom and Thatcher who found

out that victimization and witnessing a personal attack was significantly associated with PTSD symptoms [11]. We also found out that Loss of property or means of livelihood, death of a friend or family member and relocation as a result of insecurity were all statistically associated with the presence of PTSD. This was not consistent with the findings of Obilom and Thatcher who did not find any association between witnessing the death of a relative and PTSD.

Gender was not a factor in the occurrence of symptoms of PTSD experienced by the respondents in this study. This is because exposure to the Jos conflict has been almost equal for both male and female residents. This is different from the findings of studies carried out in Uganda, Kashmir and the United States where women were found to have a higher prevalence of PTSD symptoms than men [17,26,28]. In another study carried out in Calgary Canada among respondents exposed to trauma, females were more likely to have PTSD than the males studied [29]. A history of hospitalization following injuries sustained during the violence was also not statistically significantly associated with presence of PTSD. Possible explanation for this may be that those who were hospitalized may have received some form of psychotherapy in the hospital which may have helped with coping with the situation unlike those who had no contact with medical care.

Limitations of this study include the relatively small sample size which may also explain the relatively high rate of PTSD found. This study was conducted among the members of the population who were most affected by the recurring conflict. Thus, the prevalence rates of PTSD among them may not be reflective of the general population to which we wish to make inferences. Also, the questionnaire used for data collection was one originally designed for screening of PTSD in clinical primary care settings and may thus result in inherent biases with respect to fully exploring the symptoms of PTSD among our respondents.

Conclusion

This study revealed that a high percentage of the residents of Jos have been exposed to one form of ethno-religious violence or the other and many of them are suffering from symptoms of PTSD. These symptoms can be ascribed to exposure to repeated violence in their locality. This highlights the need to provide more psychological relief and services to these populations to prevent them from developing complications associated with PTSD as well as to protect their offspring from developing other forms of anxiety disorders.

Recommendations

Relief efforts for victims of the crisis should include mental health assessment and treatment for those with PTSD. There is need to provide mental health services and psychotherapy to victims of conflict as well as strengthen community mental health programmes as part of PHC delivery.

Current efforts by National Emergency Relief Agency (NEMA), though still limited to the provision of relief materials, is commendable as PTSD was found to be high among those who lost their means of livelihood and those who lost their property. Incorporation of Mental Health care to the NEMA activities will help in attending to the psychological needs of this vulnerable group in addition to their physical needs.

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TYO, COO and OJT were involved in the conceptualization and development of the research protocol for this study.

TYO and YCS were part of the data collection team

TYO and ATO did the data analysis

All the authors were involved in drafting of the manuscript

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