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Armed Conflict and Depression among Heads of Households in Dogonahawa, North-Central Nigeria: Prevalence and Correlates

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Abstract

Background and Aim: Research has shown that 30% - 70% of people who have lived in war zones suffer from symptoms of depression, with exceptionally high rates documented among heads of households. Thus, this study aims to determine the prevalence and correlates of depression among victims of armed-conflict in Dogonahawa, North-Central Nigeria. **Methods:** A multi-stage sampling of households was employed to select 270 respondents aged $\geq$ 18 years. A face-to-face interview was conducted using the Revised Beck Depression Inventory-11 to collect data on depression. **Results:** The prevalence of depression was 38.5% in all respondents, 45.2% and 28.6% among heads of households and the dependants respectively. The odds of having depression was more than twice among heads of households with income below N20,000.00 compared to those earning above N50,000.00 (OR = 3.02, P = 0.253), but was decreased among males, those engaged in professional jobs and those with household size of less than five members compared to females, being engaged in non professional jobs and having more than five household members respectively (OR = 0.198, P = 0.002; OR = 0.049 and OR = 0.199; P = 0.012 and OR = 0.193; P = 0.001 respectively). **Conclusion:** The results point to the importance of disaster preparedness generally and specifically, with particular attention to household heads who are females, non professionals, with low income and larger household size.

Keywords

Armed-Conflict, North Central Nigeria, Depression, Heads of Households, Dependants

1. Introduction

Since the 1914 amalgamation of the northern and southern regions by the British colonial government, Nigeria has faced a variety of ethnic, religious and political crises (Crowther, 1968). The high point seems to have been the three-year (1967 and 1970) bloody civil war which ensued after independence in 1960, causing the death of more than one million people (Ugorji, 2012). The subsequent clashes include the violent manifestation of the Maitatsine riot in 1980's (Isichei, 1987), and other instances of political and ethno-religious unrest in early 1990s till date (Haldun & Opeyemi, 2016).

The North-Central region which Plateau State belongs, is one of the areas worse hit by the ethno-religious crisis (Idahosa & Andrew, 2013). For instance, in September 2001, the first major ethno-religious riot erupted in Jos, the Plateau State Capital, causing the death and displacement of thousands of people including Muslims and Christians (Haldun & Opeyemi, 2016). Over the ensuing years, the conflict spread to other parts of the State that in March 2010 resulted in violent attack on Dogonahawa, a specific community in Plateau state, with a population of over 6000 people (Daily champion Nigeria, 2010; National Bureau of Statistic, 1991).

Close to 500 people mostly women and children were butchered with machetes, clubs, axes and some shot with guns, in a surprised midnight raid that lasted over three hours; left several others injured, with houses and property destroyed and some survivors rendered homeless (Daily champion Nigeria, 2010).

Exposure to conflict-related traumatic events of this nature will lead to an elevation in the prevalence of mental disorders, including depression (Agbir, Audu, Obindo, Davou et al., 2017; Josephine & Christine, 2011; Lopes Cardozo et al., 2004). To add to the immediate impact of such violence, survivors are further subjected to a host of highly stressful conditions like sense of insecurity, financial difficulties, hunger, inadequate housing among other vulnerabilities, with consequent powerful effects on mental health outcomes (James, Hebert, Samuel, & Eugene, 2015; Miller, Omidian, Rasmussen, Yaqubi, Daudzai, Nasiri et al., 2008). The burden of such hardships may be put to bear largely on the heads of households because of their traditional role in providing most of the needs of the households amidst scarce resources (Federal Republic of Nigeria National Bureau Statistics, Abuja Nigeria, 2012).

A household consists of one or group of people who have usually slept in the same dwelling and taken their meals together for at least 6 months within a year, while the head of household is the person who provides most of the needs of the household and is familiar with all the activities and occupations of the household members (Federal Republic of Nigeria National Bureau Statistics, Abuja Nigeria, 2012).

Depression is a common mental disorder that presents with depressed mood, loss of interest, decreased energy, feelings of guilt or low self worth, disturbed sleep or appetite and poor concentration, accompanied by an inability to carry

out daily activities for at least two weeks (World Health Organization, World suicide prevention day, 2012). This condition has been recognized as a major public health problem, with its global burden on the increase (Lépine & Briley, 2011).

The occurrence of depressive symptoms in heads of household is of particular concern because it causes severe distress to the individual as well as affects interactive patterns between the household heads and their families, thereby disturbing the development of children's emotion regulation (Goodman & Gotlib, 1999; Beardslee, Gladstone, Wright, & Cooper, 2003; Kim-Cohen, Moffitt, Taylor, Pawlby, & Caspi, 2005; Richter, 2004).

The prevalence of major depressive disorder over the course of a life time is estimated to range between 6% - 17% (Blazer, 1995), while the Centre for Disease Control and Prevention, (CDC) Atlanta, reported that 30% - 70% of people who have lived in war zones suffer from symptoms of depression and PTSD (Prevention CfDCa, 2014).

The results of some previous studies conducted among armed conflict survivors in South-Sudan (Bayard, Eliaba, Olivia, & Egbert, 2009), Uganda (James, Hebert, Samuel, & Eugene, 2015) and Afghanistan Lopes Cardozo et al., 2004) revealed a depression prevalence in the range of 50% - 68%, with exceptionally high rates of more than 80% noted among internally displaced persons including heads of households in Kenya (Josephine & Christine, 2011; Njau, 2005). Socio-demographic factors associated with depression in these studies include gender, marital status, income level, employment and educational status among others.

Previous studies conducted in north central and north western Nigeria by (Agbir et al., 2017; Sheikh et al., 2015), found a 62.3% and 59.7% prevalence of depression among internally displaced persons following political and ethno-religious violence in these areas. However, we are not aware of any Nigerian study that narrowed their findings to mental disorders in relation to household statuses of victims of armed-conflict. This paper offers a different perspective to the existing body of literature, by evaluating the Prevalence of depression among heads of households in comparison to dependants in Dogonahawa, north-central Nigeria, at four years after exposure to armed conflict and to identify the socio-demographic factors associated with depression among heads of households.

2. Methodology

2.1. Data, Sample and Procedure

This is part of the larger community based study that was designed to evaluate the prevalence of some mental disorders and their risk factors among adult population exposed to armed conflict in Dogonahawa (exposed) North Central Nigeria in comparison to Zawan not exposed), as control.

The research was conducted between December 2013 and June 2014 at 4 years after the 7th march 2010 communal violence in Dogonahawa, a specific community in Jos-South and part of Barkin Ladi Local Government Areas (LGAs) of

Plateau State, North-Central Nigeria. This community is located about 15 km South East of Jos, the Plateau State capital and borders Bauchi State to the East, Jos North to the North. To the South is part of Dogonahawa in Barkin Ladi LGA.

This community has an estimated projected population of over 6200 people (Federal Republic of Nigeria, Population Census, 1991). The population projection was done based on 1991 census figure because as at 2014/2015 when data were collected, the 2006 census figure (most recent) though gazzeted, was not disaggregated into localities.

Dogonahawa is populated predominantly by the Berom-Christians who also understand and speak Hausa language. Majority of the residents are farmers. They cultivate both food and cash crops such as maize, millet, potatoes and vegetables as well keep livestock (chicken, cattle, pigs, goats and sheep). A few of them are miners, civil servants and traders. The women often engage in the production and sales of locally brewed alcoholic drink called Burukutu as their alternative source of income.

This community has two functional primary schools, a secondary school, primary health care clinic and a market square located at the centre of the community where commercial activities take place.

Ethical approval was obtained from the Ethical Committee of the Jos University Teaching Hospital, while Permission was granted by the village head of Dogonahawa. Individuals willing to participate in the study were first informed of their confidentiality before consent was obtained.

Adults aged 18 years and above, resident in Dogonahawa prior to and during the communal attack were eligible for inclusion. Eligible subjects considered too ill to participate in the study were excluded.

The sample size was calculated, using Kish formula (Kish, 1965) for cross sectional studies based on a prior estimate of 42% in a previous study close to our study location (Obilom & Thatcher, 2008).

Total sample size (exposed and not exposed groups) = 500.

A proportional sampling was used to determine number of subjects interviewed in each group.

Thus, the proportion of subjects interviewed in the exposed group (Dogonahawa) = 6204/11566 × 500 = 268 ≈ 270.

A multistage sampling of households was employed to select eligible respondents as follows:

Four Enumeration Areas (EAs) were systematically selected from Dogonahawa, 270 households were selected from all the selected EAs and a household member was then randomly selected per each of the selected households until the desired sample size of 270 was obtained. After two failed attempts to reach an eligible respondent in a household, the next household was selected instead and any household member that declined consent to participate in the study was replaced by the next eligible household member.

Data were collected by trained researchers and research assistants who are fluent in both English and Hausa languages, in the participants' (eligible adults

18 years and over) respective homes, via a face-to-face interview, ensuring that they had enough privacy. Each interview lasted between 30 - 60 minutes, within which, individuals identified with the disorder under survey were counseled and or referred to mental health services provider.

2.2. Measures

Demographic variables were assessed using a Sociodemographic Questionnaire. This sought information on socio-demographic data (age, gender, level of education, marital status, occupation, individual monthly income, religion, ethnicity, sense of safety living in the community, household status and household size per head).

Depression is the dependent variable of interest in this study, which was assessed by using the Revised Beck Depression Inventory-11 (Beck, Ward, Medelson et al., 1961) (BDI-11). This is a 21-item, self-rated scale that evaluates key symptoms of depression. The items include mood, pessimism, and sense of failure, self-dissatisfaction, guilt, punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image change, work difficulty, insomnia, fatigability, loss of appetite, weight loss, somatic preoccupation, and loss of libido.

Individual scale items are scored on a 4-point continuum (0 = least, 3 = most), with a total summed score range of 0 - 63. The scores are classified as minimal (0 - 13), mild (14 - 19), moderate (20 - 28), and severe (29 - 63). Participants who scored above the cut-off point of 19 were classified as having moderate-to-severe depression (hereafter referred to as depression).

This instrument has excellent psychometric properties and is widely used in research for identifying the presence and severity of depressive symptoms consistent with DSM-1V criteria (Beck, Ward, Medelson et al., 1961). It has been applied in various cultures and settings including Nigeria (Adewuya, Ola, & Aloba, 2007).

2.3. Data Analysis

The Statistical Package for Social Sciences version 20 (SPSS-20) Software package was used to analyze the data. The results were presented using simple 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. To predict the risk for depression among heads of households, the significant independent variables were then entered into a logistic regression analysis.

3. Results

Table 1: Socio-demographic Characteristics of respondents at the time of the study.

Table 1. Sosiodemography and prevalence of depression among heads of household and dependants: compared.

Variable	Response	Heads: n = 126 Freq: n (%)	Dependantsn = 140 Freq: n (%)	Total: N = 266 Freq: n (%)	Statistics
Age grp in (years)	20 - 39	74 (58.7)	88 (62.9)	162 (60.9)	
	40 - 59	38 (30.2)	38 (27.1)	76 (28.6)	$P = 0.217$
	≥60	14 (11.1)	14 (10.0)	28 (10.5)	$T = 1.237$
	Mean age ± SD	40.7 ± 13.6	38.7 ± 12.4	39.63 ± 13.0	
Gender	Male	89 (70.6)	35 (25.0)	124 (46.6)	$X^2 = 55.496$
	Female	37 (29.4)	105 (75.0)	142 (53.4)	$P ≤ 0.001$
Level of Education	No formal	23 (118.3)	16 (11.4)	39 (14.7)	
	Primary	41 (32.5)	48 (34.3)	89 (33.5)	$X^2 = 6.770$
	Secondary	41 (32.5)	62 (44.3)	103 (38.7)	$P = 0.080$
	Tertiary	21 (16.7)	14 (10.0)	35 (13.2)	
Marital Status	Never married	14 (11.1)	49 (35.0)	63 (23.7)	
	Married	70 (55.6)	83 (59.3)	153 (57.5)	$X^2 = 44.043$
	Separated	7 (5.6)	1 (0.7)	8 (3.0)	$P ≤ 0.001$
	Divorce	7 (5.6)	0 (0.0)	7 (2.6)	
	Widowed	28 (22.2)	7 (5.0)	35 (13.2)	
Occupation	Professionals	18 (14.3)	10 (7.1)	28 (10.5)	
	Non professionals	108 (85.7)	111 (79.3)	219 (82.3)	$X^2 = 20.641$
	Unemployed	0 (0.0)	19 (13.6)	19 (7.1)	$P ≤ 0.001$
Individual Monthly Income	no income	0 (0.0)	51 (36.4)	51 (19.2)	
	<₦ 20,000.00	77 (61.1)	63 (45.0)	140 (52.6)	$X^2 = 59.973$
	₦ 20 - 50,000.00	36 (28.6)	22 (15.7)	58 (21.8)	$P ≤ 0.001$
	>₦ 50,000.00	13 (10.3)	4 (2.9)	17 (6.4)	
Ethnicity	Berom	120 (95.2)	137 (97.9)	257 (96.6)	$X^2 = 1.392$
	Others	6 (4.8)	3 (2.1)	9 (3.4)	$P = 0.238$
Religion	Christianity	125 (99.2)	139 (99.3)	264 (99.2)	$X^2 = 0.006$
	Islam	1 (0.8)	1 (0.7)	2 (0.8)	$P = 0.940$
Househol size	<3	16 (15.9)	NA	16 (15.9)	
	3 - 5	43 (34.1)	NA	43 (34.1)	
	>5	63 (50.0)	NA	63 (50.0)	
Sense of Safety	Yes	15 (11.9)	22 (15.7)	37 (13.9)	$X^2 = 0.804$
	No	111 (88.1)	118 (84.3)	229 (86.1)	$P = 0.370$
Depression	Yes	57 (45.2)	40 (28.6)	97 (36.5)	$X^2 = 7.951$
	No	69 (54.8)	100 (71.4)	169 (63.5)	$P = 0.005$

A total of 270 respondents were interviewed, and for the purpose of this research paper, the respondents were divided into two groups, comprising 127 (47%) heads of households and 143 (53%) dependants, but the questionnaires for 126 (99.2%) heads of household and 140 (97.9%) dependants were used in the analyses. Only four interviews were excluded because of incomplete data.

The heads of households were older, with a mean age of 40.7 ± 13.5 years as against 38.7 ± 12.4 years for dependants. The mean age of the two groups did not differ significantly ($P = 0.217$). The two groups differed significantly, with the female dependants being more likely to be recruited than the male dependants ($P \leq 0.001$).

More than 55% of the respondents in each group were married, the rest 42% were never married, previously married or widowed with a higher proportion of the widowed among the heads of households, 28 (22.2%) compared to dependants, 7 (5.0%). The two groups also differed significantly with the heads of households being more likely to be unmarried (never married, separated, divorce and widowed) than the dependants ($P < 0.001$).

While 13.6% of the dependants were not engaged in any occupation, the heads of households were significantly more likely to be engaged in professional jobs than the dependants ($P < 0.001$).

A slight majority (51; 36.4%) of the dependants did not have stable income; majority of the respondents had income below N 50,000.00. Out of the 17 respondents who had estimated monthly income of N 50,000.00 and above, 13 (76.5%) were heads of household, while the remaining 4 (23.5%) were dependents. The difference was statistically significant, with the heads of households being more likely to have a higher income than the dependants **($P \leq 0.001$)**.

In terms of ethnic and religious distribution, the two groups were predominantly Christians, of the Berom ethnic group.

Only 4 (3.2%) of the heads of households were living alone, majority (106; 84.1%) of them had at least two dependants.

Table 2: Prevalence and sociodemographic factors associated with depression among heads of households

The results also showed that 57 (45.2%) of the 126 heads of households and 40 (28.6%) of the 140 dependants had BDI-II scores above 18 points and were therefore diagnosed of depression. The difference was statistically significant, with the heads of households being more likely to have depression than the dependants ($P < 0.005$).

Among the heads of households, having a diagnosis of depression was significantly associated with female gender ($P = 0.039$), being engaged in non-professional job ($P = 0.009$), having individual monthly income below N 20, 000.0 ($P = 0.026$) and larger household size respectively $P = 0.029$.

Table 3: Logistic regression analysis

Logistic regression analysis showed that being a male head of household and a professional compared to a female head of household and a professional reduced the odds of developing depression by 0.198 and 0.233 respectively ($P = 0.002$ and

Table 2. Association of Sociodemographic characteristics and depression among Heads of households.

Variables	Responses	Yes n = 57 Freq:n (%)	No:n = 69 Freq:n (%)	Total: N = 126 Freq:n (%)	Statistics
Age group (years)	20 - 39	33 (57.9)	41 (59.4)	74 (58.7)	
	40 - 59	17 (29.8)	21 (30.4)	38 (30.2)	
	≥60	7 (12.3)	7 (10.1)	14 (11.1)	T = 0.393
	Meanage ± SD	41.21 ± 15.1	40.23 ± 12.3	40.67 ± 13.6	$P = 0.695$
Gender	Male	35 (61.4)	5 (78.3)	89 (70.6)	$X^2 = 4.276$
	Female	22 (38.6)	15 (21.7)	37 (29.4)	$P = \textbf{0.039}$
Level of education	No formal education	14 (24.6)	9 (13.0)	23 (18.3)	$X^2 = 3.360$
	Primary	16 (28.1)	25 (36.2)	41 (32.5)	$P = 0.339$
	Secondary	19 (33.3)	22 (31.9)	41 (32.5)	
	Tertiary	8 (14.0)	13 (18.8)	21 (16.7)	
Marital status	Never	4 (7.0)	10 (14.5)	14 (11.1)	$X^2 = 6.257$
	Married	31 (54.4)	39 (56.5)	70 (55.6)	P = 0.181
	Separated	6 (10.5)	1 (1.4)	7 (5.6)	
	Divorce	3 (5.3)	4 (5.8)	7 (5.6)	
	Widowed	13 (22.8)	15 (21.7)	28 (22.2)	
Occupational	Professionals	3 (5.3)	15 (21.7)	18 (14.3)	$X^2 = 6.920$
Group	non professionals	54 (94.7)	54 (78.3)	108 (85.7)	$P = \textbf{0.009}$
Individual	<₦ 20,000.00	42 (73.7)	35 (50.7)	77 (61.1)	$X^2 = 7.329$
Monthly	₦ 20 - 50,000.00	12 (21.1)	24 (34.8)	36 (28.6)	$P = \textbf{0.026}$
Income	>₦ 50,000.00	3 (5.3)	10 (14.5)	13 (10.3)	
Religion	Chritianity	56 (98.2)	69 (100)	125 (99.2)	$X^2 = 1.220$
	Islam	1 (1.8)	0 (0)	1 (0.8)	$P = 0.269$
Ethnicity	Berom	55 (96.5)	65 (94.2)	120 (95.2)	$X^2 = 0.360$
	Others	2 (3.5)	4 (5.8)	6 (4.8)	$P = 0.548$
Household size	<3	6 (10.5)	14 (20.3)	20 (15.9)	$X^2 = 7.029$
	3 - 5	17 (29.8)	30 (43.5)	47 (37.3)	$P = \textbf{0.029}$
	>5	34 (59.6)	25 (36.2)	59 (46.8)	
Sense of safety	Yes	5 (8.8)	10 (14.5)	15 (11.9)	$X^2 = 0.974$
	No	52 (91.2)	59 (85.5)	111 (88.1)	$P = 0.324$

$P = 0.049$). Though having individual monthly income below N20,000.00 increased the odds of having depression by more than twice compared to having individual monthly income above N50,000.00, but was not statistically significant ($P = 0.253$). The odds of having depression was significantly decreased by

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Table 3. Predictors of depression among heads of house households.

Variables	Odd Ratio	95% Confidence interval		P-value
		Lower	Upper	
Sex				
Male	0.198	0.072	0.543	**0.002**
Female	1.000			
Occupation				
Professionals	0.233	0.055	0.994	**0.049**
Non professionals	1.000			
Income				
<₦ 20,000.00	2.592	0.506	13.294	0.253
₦ 20 - 49,000.00	0.862	0.151	4.915	0.867
≥₦ 50,000.00	1.000			
Household size				
<3	0.199	0.056	0.706	**0.012**
3 - 5	0.193	0.072	0.516	**0.001**
>5	1.000			

0.199 and 0.193 among heads of households with less than 3 and 3 - 5 dependants compared to those with more than 5 dependants respectively ($P = 0.12$ and 0.001).

4. Discussion

The study sample consisted of 266 respondents, with majority of them being female dependants. This is expected because households in Nigeria are predominantly headed by men (Nigeria Demographic and Health Survey, 2003) and the fact that data were collected between the hours of 8 am and 6 pm where many household heads might have left home for their farms and other business, could limit the chances of men being recruited into the study. Furthermore, the heads of households and dependants were socio-economically unequal as indicated by significant difference in marital statuses, occupation and income levels. This is expected, because majority of the dependants were younger, perhaps still schooling or unemployed graduates and therefore unmarried.

The prevalence of depression was 45.2% among heads of households and 28.6% among dependants. These rates were lower than the 80% recorded among internally displaced heads of households in Kenya (Njau, 2005), but higher than the 10.6% and 17% recorded among heads of households not affected by armed conflict in Kenya and Brazil (Marcelo, Henrique, & Ana, 2012) respectively.

However, there are sparse data to make any assertion on differential effects of household status (heads and dependants) on the development of depression. Notwithstanding, we presume that the elevated prevalence rate of depression

among heads of households in excess of the rate among dependants may be a reflection of the higher socio-economic burden placed on the household heads to provide for families amidst post conflict hardships. For instance, the worsened level of poverty among survivors can impact on the capacity of the heads of households to meet the basic needs of their families. This is particularly common in our environment, where about 67% of the population already lived below poverty line (Adofu & Ocheja, 2013), and poverty itself has been found to play a major role in precipitating the development of depression (Lund, Breen, Flisher, Kakuma et al., 2010: Njau, 2005). To add to this, large family size that is often due to polygamous marriages, poor birth control, coupled with the extended nature of our family system amidst scarce resources (Nigeria Demographic and Health Survey, 2003) is an additional burden on the heads of households.

We also found that 36.5% of our total sample met criteria for depression, which is lower than the rates reported in two separate studies conducted in Nigeria by Agbir et al., (2017) and Sheikh et al., (2015) who found a 62.3% and 59.7% prevalence of depression among victims of political and ethno-religious crises displaced from their homes. These high figures have also been documented among survivors of armed conflict in some parts of Middle East (Lopes Cardozo, et al., 2004; Laila & Samar, 2003) and African countries (James, Hebert, Samuel, & Eugene, 2015; Josephine & Christine, 2011), with incredibly high rate of 82% recorded among internally displaced persons in Kenya, following ethnic clashes in the country (Josephine & Christine, 2011).

The disparity in prevalence of depression among all respondents in our study visa-a-vis the aforementioned studies (Agbir, 2017; Sheikh et al., 2015; Josephine & Christine, 2011) may be linked to methodological and contextual factors. For example, while we assessed depression among trauma survivors inside their own homeland with their social structure and cultural institutions preserved, the previous studies in Nigeria (Agbir., 2017; Sheikh et al., 2015) and Kenya (Josephine & Christine, 2011) were conducted among internally displaced persons, a population with specific characteristics, such as adaptation to new surrounding, unemployment, physical and sexual abuses among other vulnerabilities (Kozariæ-Kovaèi, Folnegoviæ-Šmalc, Škrinjariæ & Marušiæ, 2002). In addition, we considered a BDI 11 score of greater than 18 to assign a diagnosis of depression, while the study in Kenya used BDI 11 scores of 14 and above (Josephine & Christine, 2011).

We found that being a female head of household rather than a male was significantly associated with depression, with the odds of depression decreased among males' heads of households, which is in consonant with the findings of other previous studies that reported same (Njau, 2005; Marcelo, Henrique, & Ana, 2012). In our study, perhaps, families with single mothers, whose husbands were killed during the conflict, had to assume the headship of the households in an environment where women are not just given less preference in terms of education and employment, but access to good farmland is another pervasive problem faced by female farmers (Nigeria Demographic and Health Survey,

2003; Gbemisola, Markus, & Amarachi, 2013). These combined factors make women more socioeconomically disadvantaged, which itself has been found to be associated with increased risk of depression (Njau, 2005; Lund, Breen, Flisher, Kakuma et al., 2010).

Alternatively, Women have the greater tendency to express and report their emotional symptoms, while Men in contrast, might perceive disclosure as a threat to masculinity and consequently might choose to conceal their feelings or resort to alcohol and other substances to mask their symptoms (Heise, Ellsberg, & Gottmoeller, 2002).

Consistent with previous findings among trauma survivors in South-Sudan (Bayard, Eliaba, Olivia, & Egbert, 2009) and Kenya (Josephine & Christine, 2011) where Socio-economic disadvantage was found to be predictive of mental disorders, our study also revealed that being engaged in non professional jobs and low income were significantly associated with depression. This finding is anticipated given that the conflict left several people with various degrees of injuries with consequent challenges, such as lack of basic livelihood skills and the resultant poverty, which can precipitate depression (Lund, Breen, Flisher, Kakuma et al., 2010). In support of this, our study also revealed that the odd of developing depression was more than twice among heads of households with low income compared to those with income of N50,000.00 and above.

We also found that depression was significantly associated with household size, with the odds of depression significantly decreased by 0.6 among heads of households with household size less than five members compared to those with household size greater than five members. Perhaps meeting the needs of a larger family size in an environment where social infrastructure and resources are scarce, could be extremely stressful, with consequent increase in risk of developing depression (Pikhartova, Chandola, Kubinova et al., 2009).

Our study showed no significant association between depression and other sociodemographic variables such as age, level of education, marital statuses, sense of safety living in the community, ethnicity and religion. This is contrary to findings reported among heads of household in Kenya (Njau, 2005) and Brazil (Justus, Henrique & Ana, 2012). This may be due to methodological factors or such relationships were not really statistically significant.

5. Conclusion

This study confirmed that depression is still highly prevalent among trauma victims in Dogonahawa, North-Central Nigeria at four years after the armed attack, with depression significantly commoner among heads of households. It also highlights the socio-demographic factors that were significantly associated with depression among heads of households, and points at categories of people such as females, being engaged in non professional jobs, low income and larger household size per head that are at particular risk for depression. Therefore, there is need for prevention and intervention strategy for conflict situation.

It is recommended that an effective model for the prediction of the development of depression as well as immediate and long-term mental health support for trauma victims needs to be developed. In addition, mental health awareness campaigns for trauma victims to seek for mental health care and that also target some of the strongest predictors of depression that we have observed, such as female gender, being engaged in non professional jobs, low income and household heads with larger household size could be implemented.

6. Strength and Limitation of the Study

The study however had limitations that also need to be acknowledged. Firstly, this study cannot be generalized across population in Nigeria; rather, it is limited to adults exposed to armed conflict in Dogonahawa until further studies have replicated similar findings in other traumatized communities in Nigeria. Secondly, we narrowed our findings to depression, while other mental disorders such PTSD, sleep disorders and other anxiety disorders may be part of the responses to trauma in some respondents. Furthermore, this study did not include information on previous history of depression before the 7th March 2010 armed attack on Dogonahawa. It is possible that depression diagnosed with some respondents may have occurred prior to the armed attack on this community.

Acknowledgements

Competing Interest

The authors declare that they have no competing interests.

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