



## Predictive Factors Of Depressive Symptoms Among Hausa People Of North-West, Nigeria

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### Abstract

Global public health concern number one in the world for disability and significantly contributes to the overall global burden of disease is depression. Individuals in all communities worldwide are affected by it. Depression is the most common mood disorder in northern Nigeria, affecting 54.5% of patients who visit clinics in Northern Nigerian Tertiary Institutions. This study examined the prevalence and predictive factors of depression among the Hausa communities in Northwest, Nigeria. A cross-sectional survey was adopted, using a purposive sampling technique, data were collected from a total of four hundred and six (406) participants from six core Hausa States in Northwest Nigeria. The questionnaire for the study was the Beck Depression Inventory Second Edition (BDI-II) Hausa version. The participants consists of 322(81%) males and 72(19%) females, their ages ranged from 18 to 42 years with a mean age of 28.01 (Std.=5.79). A total of 140(34.5%) were married, 212(52.2%) were single, 44(10.8%) divorced, 6(1.5%) were widowed while 4(1%) did not indicate their marital status. Statistical analysis involved descriptive statistics and univariate analysis. The results from hypothesis one indicated a significant main effect of age and the interaction effect of age and sex. Furthermore, hypothesis two showed the main effect of age and sex and the interaction effect of employment status and sex. It was concluded that, the fact that age and sex as demographic variables made significant contribution to depression in this study calls for need to identify risk factors for depression for which future clinical treatment decisions can be made. The fact that participants in the study area were found to have severe depression reveals the need for regular assessment and screening for mental health challenges among this group of people.

**Keywords:** *Depressive symptoms, Prevalence, predictive factors, Hausa communities, Northwest*

### I. INTRODUCTION

Depression is oftentimes and erroneously referred to as sadness or down moments. Depression is not just a word to be thrown around, it is a mental illness that requires adequate and specialist attention and treatment. While sadness is an element of depression, it has to be persistent or occur for at least two weeks.

Depression/Depressive disorder is an umbrella term for several disorders. According to DSM-5, Depressive disorders include disruptive mood dysregulation disorder, major depressive disorder (including major depressive episode), persistent depressive disorder (dysthymia), premenstrual dysphoric disorder, substance/medication-induced depressive disorder, depressive disorder due to another medical condition, other specified depressive disorder, and unspecified depressive disorder.

Depression should not be casually used as a term; it is a serious mental health condition that necessitates specialized care and treatment. An individual experiencing depression may display the following signs: persistent feelings of sadness, hopelessness, or pessimism; decreased self-worth and increased self-criticism; inability to find joy in regular activities; decreased energy and vigor; slowed thinking or movement; lack of appetite; and disrupted sleep patterns or insomnia. Although feelings of sadness and others signs mentioned above are part of depression, they must be ongoing or present for a minimum of two weeks. Depression, or depressive disorder, encompasses various disorders. DSM-5 categorizes depressive disorders as disruptive mood dysregulation disorder, major depressive disorder (including major depressive episode), persistent depressive disorder (dysthymia), premenstrual dysphoric disorder, substance/medication-induced depressive disorder, depressive disorder due to another medical condition, other specified depressive disorder, and unspecified depressive disorder. The leading cause of disability worldwide at present is depression,



which is a public health concern of global proportions. It is a significant factor in the overall global burden of disease and impacts individuals in all communities across the globe. (WHO, 2021; Zenebe, et al., 2021)

Depression is one of the disorders causing increased healthcare costs due to unnecessary investigation and inappropriate or unspecific treatments (WHO, 2021). Nigeria is the most populous nation in Africa. In 2015, an estimated seven million Nigerians suffered from depression, making it the country with the highest rate of depressive disorders in the continent (WHO, 2017). In 2016, Nigeria had 17.3 suicides per 100,000 people, ranking it as the 15th highest rate worldwide (WHO, 2016). According to WHO, Nigeria has Africa's highest caseload of depression and ranks 15th in the world in the frequency of suicide. A Mental Health in Nigeria Survey conducted by Africa Polling Institute (API), in partnership with EpiAfric in 2019, estimates that 20-30% of the Nigerian population are believed to suffer from mental health disorders. Depression is the most common mood disorder in northern Nigeria, affecting 54.5% of patients who visit clinics in Northern Nigerian Tertiary Institutions according to Aiyelero et al. (2011). This is as a result of widespread ignorance and limited knowledge of depression and available mental health services. This study is necessary because in a complex society like ours where people tend to be more vulnerable to this menace, it is necessary to find more appropriate ways of assessing it to overcome its danger.

### **Sex, Age, Employment status and Affective symptoms of Depression**

Meena, Sharma and Jain (2021) evaluated whether somatic symptoms of depression are more prevalent in females than in males. A cross-sectional analytic study was carried out at a tertiary level referral hospital attached to a medical college in Rajasthan by the department of psychiatry. Consecutive patients (both male and female) sufferings from depression were recruited for the study, diagnosed as per the International Classification of Diseases-10. Eighty-two male and 86 female adult psychiatric outpatients with diagnosis of depressive disorder were assessed using Hamilton Depression Rating Scale (HDRS-17) and Somatic Symptom Scale-Adult (derived from Patient Health Questionnaire Physical Symptoms) to quantify the severity of depression and somatic symptoms, respectively, and compared. Data collected from the patients were analyzed using

unpaired t-test and Fisher's exact test. 95% confidence interval and  $p \leq 0.05$  were used to indicate a significant difference between the groups. Results indicated that no statistically significant difference was found in the severity of depression between male and female patients. Somatic symptom scores were higher in female patients, both on somatic symptom score and HAM-D. Higher prevalence of somatic depression was found in female patients suffering from depression.

Anguzu, Nagavally, Dawson, Walker and Egede (2021) examined age and gender differences in the relationship between affective depression and quality of life among United States adults. Using Medical Expenditure Panel Survey data for 2008–2016 on 227,663 adults were analyzed. The dependent variable, quality of life (QoL), included physical component summary (PCS) scores and mental component summary (MCS) scores from the Short Form Health Survey (SF-12). The key independent variable, depression, was measured using the 2-item Patient Health Questionnaire. General linear regression models examined the relationship between QoL and depression. Models were adjusted for individual and environmental characteristics, symptom status, functional and biological status, and health perceptions were stratified by gender and age. In adjusted models, MCS scores were significantly lower among those with depression compared to those without depression and lower among women compared to men. Models stratified by gender and age found women with depression ages 40–64 had significantly lower PCS scores compared to those without depression. Among men with depression, those ages 18–39 and 40–64 had lower PCS scores compared to those without depression. Women and men of all ages with depression had significantly lower MCS scores compared to those without depression. They concluded that public health interventions and clinical approaches to address depression in women and men should target functional status in men and perceptions of health in women.

Agberotimi, Akinsola, Oguntayo and Olaseni (2020) examined the mental health outcomes among the healthcare personnel and the general population and the role of socioeconomic status. Eight hundred and eighty-four (884) residents in Nigeria comprising 382 healthcare personnel and 502 general residents aged between 18 to 78 years ( $M = 28.75$ ,  $SD = 8.17$ ) responded to an online survey with measures of Impact of Event Scale-Revised (IES-R), Generalized Anxiety Disorder (GAD-7), Patient Health Questionnaire (PHQ-9),



and Insomnia Severity Index. Collected data were subjected to statistical analysis using the SPSS v.25. Results revealed significant difference in the prevalence of affective depressive symptoms, insomnia symptoms, posttraumatic stress symptoms, and clinical anxiety symptoms among healthcare personnel and the general population, with a higher prevalence reported by the healthcare personnel. Further, socioeconomic status significantly influences prevalence of affective depression symptoms. The study concluded that the prevalence of poor mental health outcomes during the COVID-19 crisis among Nigerians is worrisome. Also, the socioeconomic status of the citizens has serious implications on affective depressive symptoms. The study recommended that the government and stakeholders should pay attention to policies that will favor tele-mental health services and adequate palliative measures to cushion the psycho-economic impacts of COVID-19 on residents.

#### **Sex, Age, Employment status and Somatic symptoms of Depression**

Tadi, Pillay, Ejoke and Khumalo (2022) investigated sex-specific differences in the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7). This comprehensive cross-sectional design study pursued four objectives: measurement invariance of PHQ-9 and GAD-7 between male and female; depression and anxiety prevalence differences; cross-sex differences in the relationship between depression and anxiety; and a comparison of symptom heterogeneity. A sample of 1966 (male = 592; female = 1374; mean age = 21 years) students from South Africa completed the PHQ-9 and the GAD-7. Data analyses for measurement invariance, latent class analysis, inter-variable correlations and group comparisons were conducted in Mplus. The two-dimensional PHQ-9 achieved scalar invariance, while the GAD-7 yielded metric invariance. The somatic and non-somatic latent dimensions of depression were compared and showed no significant difference between male and female groups. The positive relationship between depression and anxiety was also not significantly different between the two groups. While the PHQ-9 symptoms formed three classes in the male group, and four classes in the female group, the GAD-7 had the same number of classes (three) and a similar pattern between the two groups. These findings hold implications for the measurement, assessment and understanding of symptom manifestation and distribution, as well as the treatment of depression and anxiety in South Africa.

Choi and Kim (2021) identified the predictors of sleep quality, a CVD risk factor, in middle-aged women with CVD risk factors to provide foundational data for developing intervention strategies for the prevention of CVD. The subjects, 203 middle-aged women (40–65 years old) with one or more CVD risk factors were selected through convenience sampling and included in this descriptive correlational study. The effects of somatic symptoms, depression symptoms, and sedentary time on sleep quality were examined. CVD-related characteristics were analyzed using descriptive statistics, whereas the mean values of the independent variables were analyzed using t-tests and analysis of variance. Predictors of sleep quality were analyzed using multiple regression analysis. The results showed that sleep quality increased with decreasing somatic symptoms, depression symptom score, and daily sedentary time, and the regression model was significant. Somatic symptoms are the most potent predictors of sleep quality in middle-aged women. They recommended that intervention strategies that improve somatic symptoms are crucial for the enhancement of sleep quality, which deteriorates with advancing age.

Ugbe, Esu, Efut, Bisongedam, Awa and Ekpo (2022) sought to identify socio-demographic correlates and other factors associated with somatic depression and anxiety among internally displaced adults in Ogoja, Cross River State, Nigeria. A cross-sectional study was conducted using non-probability and probability sampling techniques. Internally displaced adults (n=335) were identified in Ogoja locations with a high prevalence of internally displaced persons (IDPs). Their mental health symptoms were assessed using the Common Mental Disorder Questionnaire, and a semi-structured questionnaire was employed to collect data on socio-demographic and displacement-related characteristics. Data were analyzed using descriptive statistics,  $\chi^2$  analysis and multivariable logistic regression. The prevalence of subtypes was 66.0% for anxiety disorder and 73.4% for depression. Factors found to be significant in each bivariate  $\chi^2$  analysis were modeled for each outcome. The multivariate analysis revealed that prolonged displacement (adjusted odds ratio, reduced family size; and fears of reprisal attacks were significantly associated with anxiety disorder. Male gender, prolonged displacement, reduced family size, financial strain and loss of loved ones were significantly associated with depression. The implications of the findings underline the complex aetiology of these two mental problems and the need to cater to the well-being of those at risk who have



been exposed to trauma-related events. Accessible and affordable mental health services should be provided for these persons while also considering a social welfare scheme that covers their health expenses. Moreover, socioeconomic condition targeting IDPs in the Ogoja Local Government Area should be improved by conducting large-scale mapping to identify this population.

### Relationship between Affective and Somatic Symptoms of Depression

Essential affective state factors in the development of somatic symptoms are health concerns or health anxiety. It manifests as disproportionate and persistent thoughts about the seriousness of one's somatic symptoms, persistently high levels of anxiety about health or bodily symptoms, and excessive time or energy devoted to such symptoms (American Psychiatric Association, 2013). Studies that investigated the psychological factors associated with somatic symptoms claim that such symptoms were significantly correlated with overall subjective distress like negative affect but not positive affect. Specifically, individuals with high scores in negative affect complain of frequent somatic symptoms.

The findings clearly indicated that somatic symptoms emerge from affective state factors. The results were consistent with the relevant works of literature, (Maulina, 2022) found that trait anxiety (negative emotion level) was consistently higher in individuals with clinically high levels of health anxiety than those without. Moreover, trait anxiety and health anxiety or health concerns strongly influenced somatic symptoms. As such, individuals with trait anxiety hold pessimistic views about the world. High levels of trait anxiety were linked to high levels of negative affect.

### Hypotheses

The main aim of this research is to investigate the prevalence and predictive factors of depressive symptoms among the Hausa communities in northwest Nigeria. In recognition of these knowledge gaps identified in the literature, the researcher was motivated to contribute to the body of knowledge. The hypothesis are as follows;

- i. There will be a significant main and interaction effects of age, employment status, and sex in the composite scores of the affective symptoms of the BDI-II Hausa version (BDI-II EA).
- ii. There will be a significant main and interaction effects of age, employment status, and sex in the composite scores of the somatic

symptoms of depression on the BDI-II Hausa version (BDI-II EA).

## II. METHOD

### Design

This adopted a cross-sectional survey because data for this research was collected from a large population all at a time. The justification for this is that the research will be carried out at a point in time, not a longitudinal study. It is also a survey, not an experiment, and no variables were manipulated.

### Setting

This research was conducted in the Northwest region of Nigeria comprising seven states namely: Jigawa, Kano, Kaduna, Katsina, Kebbi, Sokoto, and Zamfara States. The choice of the study area is based on the fact that Northwest particularly Jigawa, Kano, Katsina, Kebbi, Sokoto, and Zamfara states respectively; are predominantly Hausas and are the core Hausa States. According to the National Population Commission of Nigeria and National Bureau of Statistics, the projected Population for 2022 for the above-mentioned states are; Jigawa 7,491,000; Kano 15,462, 200; Katsina 10,368,500; Kebbi 5,563,900; Sokoto 6,391,000 Zamfara 5,833,500 totaling 51,110,100. Three states namely Kano 15,462, 200, Katsina 10,368,500, and Jigawa 7,491,000 totaling 33,321,700 were selected for the study.

### Participants

The participants for this study were four hundred and six (406) male and female of Hausa-speaking adults drawn from the total population of six core Hausa States in Northwest Nigeria. Their ages range between 18 and 42 years with a mean age of 28.01 (Std.=5.79). A total of 140(34.5%) of them were married, 212(52.2%) were single, 44(10.8%) divorced, 6(1.5%) were widowed while 4(1%) did not indicate their marital status. On their education, 16(3.9%) had no formal education, 24(5.9%) had primary education, 91(22.4%) had secondary education, 265(65.3%) received tertiary education, while 10(2.5%) did not indicate their level of education. By employment, 241(59.4%) were into different forms of self-employment, 156(38.4%) were employed by the government and 9(2.2%) did not indicate their employment status.

### Population of Study

The targeted population for this research study is the Hausa people of Northwest Nigeria which has about six (6) states; Jigawa, Kano,



Katsina, Kebbi, Sokoto, and Zamfara states. The estimated current population of the area is fifty-one million one hundred and ten thousand one hundred (51,110,100) Hausa indigenes across the six states

according to the National Population Commission of Nigeria and National Bureau of Statistics projected Population 2022.

**Table 1: Estimated 2022 Population for States in North West**

| State        | 2022 estimated population |
|--------------|---------------------------|
| Jigawa       | 7,491,000                 |
| Kano         | 15,462,200                |
| Kastina      | 5,563,900                 |
| Kebbi        | 10,368,500                |
| Sokoto       | 6,391,000                 |
| Zamfara      | 5,833,500                 |
| <b>Total</b> | <b>51,110,100</b>         |

**Sampling**

To obtain participants for this study, a purposive sampling technique was utilized. To obtain participants for the research only those who are vast in the Hausa language were selected for the study and 480 copies of questionnaires were administered to them.

$$S = \frac{49,065,696}{127,775.25 + 0.96}$$

$$S = \frac{49,065,696}{127,776.21}$$

$$S = 383.997$$

**Sample Size Determination**

The sample size in this study was determined in two stages; the first stage deals with the size of the states, while the second deals with the size of individual participants. Northwestern Nigeria has six core Hausa states namely: Jigawa, Kano, Katsina, Kebbi, Sokoto, and Zamfarastates. To further buttress the sample size figure from Krejcie and Morgan’s (1970) sample size table, their formula was applied using the total population of 51,110,100 projected populations in 2022 for six core Hausa states in North-West Nigeria. The formula is stated below

$$S = \frac{X^2 NP (1-p)}{d^2 (N-1) + X^2 (1-P)}$$

Where

S = require sample size

X = Z Values (i.e. 1.96 for 95% confidence level)

N = Population size

P = Population proportion (expressed as a decimal; assumed to be 0.5 i.e 50%)

d = degree of accuracy (5%) expressed as a proportion (05) i.e. the margin of error.

Substituting from the formula:

$$S = \frac{1.96^2 \times 51,110,100 \times 0.5 (1.05)}{0.05 (51,110,100 - 1) + 1.96^2 \times 0.5}$$

(1-0.5)

$$S = \frac{3.84 \times 51,110,100 \times 0.25}{0.0025 \times 51,110,100 + 3.84 \times 0.5}$$

Selected Sample size = 384

The researcher anticipated a non-response rate of 0.8%, so to compensate for the non-response, the researcher made use of a non-response formula which is:

$$N_x = \frac{n}{0.8}$$

Where n= the calculated sample size was selected.

Therefore, the non-response rate is:

$$N_x = \frac{384}{0.8}$$

$$N_x = 480.$$

Therefore, 480 copies of questionnaires were issued to the respondents in the selected three Hausa States in Northern Nigeria.

A proportionate sampling method was applied. Halleck’s (2001) formula for proportionate distribution was used to determine the sample for each state as shown below;

$$\left( \frac{n}{N} \right) \quad N_i$$

n= Population

N=Total Population

Ni determined the sample size

$$Jigawa = \frac{7,491,000}{51,110,100} \times 480$$

$$33,321,700$$

$$3,595,680,000$$



33,321,700  
=108  
Kano= 15,462,200  
 $\frac{15,462,200 \times 384}{33,321,700}$   
 $\frac{7,421,856,000}{33,321,700}$   
=223.  
Kastina= 10,368,500  
 $\frac{10,368,500 \times 384}{33,321,700}$   
 $\frac{4,976,880,000}{33,321,700}$   
=149.  
(223+149+108=480).

Therefore, a total of 480 questionnaires were proportionately issued to the respondents the three (3) states across North-West Nigeria.

### Sampling Technique

The researcher employed a simple random sampling technique in selecting the participating states and selecting the participants for the study. In using a systematic sampling technique, three states were randomly selected from a list of the entire core Hausa States in the Northwest, through the balloting system. YES, and NO alongside the name of a state were written on separate pieces of paper carefully folded while three were randomly picked which indicated yes Kastina, Yes Kano, and yes Jigawa.

In sampling for participants, the researcher employed a simple random sampling technique. To achieve this aim, the research used a list of randomly generated numbers, from internet-based random number generators. This list was generated according to the sample frame from each of the selected states. The researcher collected the total population of the states sampled before data collection with the questionnaire. This means that the total number of participants from the three (3) states was ascertained, and perspective proportions in the ample size of 480 participants were also determined using Halleck's (2001) formula for proportionate sampling.

### Instruments

Questionnaire was used to collect data; the questionnaire was divided into two sections, section 'A' contained demographic data of the participants. Section 'B' was the Beck Depression Inventory-II

(BDI-II) Hausa version which measures the level of depression.

### Beck Depression Inventory Second Edition (BDI-II) Hausa Version

Beck Depression Inventory Second Edition (BDI-II) was developed by Beck, Steer, and Brown (1996) as a revised version of BDI-I and BDI-IA which were earlier formed in 1961 and 1978 respectively. BDI-II was developed to assess an individual's level or severity of depression in various domains that are being used to determine one's level of depression. BDI-II is the most widely used instrument or tool for measuring the severity of depression. It consists of 21 multiple choice questions and is designed for individuals aged 13 and above, it consists of items relating to symptoms of depression such as hopelessness and irritability, cognitions such as guilt or feeling of being punished as well as physical symptoms such as fatigue, weight loss and lack of interest in sex. It is sensitive to clinical change therefore useful as a pre and post-assessment measure (Alarape, Okurame&Odum, 2001) it is self-administered and is scored on a scale of 0-3 in a list of four statements arranged in increasing severity about a particular symptom of depression. The cutoff is 0-13: minimal depression; 14-19: mild depression; 20-29 moderate depression; and 30-63: severe depression. Higher total scores indicate more severe depressive symptoms. The questionnaire has two subscales: Affective and Somatic symptoms; eight (8) items for Affective symptoms 2,3,5,6,7,8,9,14 and thirteen (13) items for Somatic symptoms that are 1,4,10,11,12,13,15,16,17,18,19,20,21.

Measurement in variance is a prerequisite for considering the BDI equivalent across versions, and for using it to make valid and interpretable comparisons of the severity of the depression among different groups. The mean score for American male-5.5; the standard deviation- was 6.7 while the mean score for American females- was 4.7; the standard deviation-6.0. However, the mean scores and the standard deviation for both males and females will be based on Nigerians as will be applied to the study.

Internal consistency was demonstrated by a significant relationship between each item and BDI total score. An odd-even item correlation of 0.85 is obtained from Spearman-Brown's correlation of 0.93. No test-retest reliability data is reported in the original report. The test-retest correlation of 0.75 was cited as part of some unpublished data from a pilot study with 23 normal undergraduates (Pehn, 1968). Miller and Seligman (1973) reported a test-retest reliability of 0.75 from 31 normal



undergraduates within a three-month interval. Beck, (1987), reported split-half reliability ranging from .79-.93. The mean coefficient alpha reported was .87 (Steer, Beck & Garrison, 1985) with a test-retest correlation of .75 for one month and .75 from undergraduates after three months (Beck, 1987). Several pieces of evidence for the construct validity of the BDI are reviewed by Beck (1972) with a sample of 608 patients, a correlation of 0.72 was observed between BDI-II scores and clinicians' rating of depression, but only 0.14 between BDI and clinicians' anxiety rating. Psychometric properties reported a coefficient alpha of .91 and .97 for Nigerian out-patients and adolescents respectively (Adewuya, 2008). The BDI-II was translated and revalidated for Hausa population, and the psychometric properties reported for Hausa population was .78 for the affective symptoms subscale .75 for the somatic symptoms subscale yielded a Cronbach's alpha coefficient of based on standardized items while 21 items on the total BDI-II Hausa version yielded Cronbach's alpha coefficient of .86 (Ayuba, et al., 2024).

#### Procedure

The questionnaire was administered with the help of seven male research assistants in the three states. After Ethical clearance was obtained from Department of Psychology Benue State University, Makurdi.

#### Data Analysis

For data analysis, frequencies, mean and standard deviations were used to summarize the

demographic data of the respondents. The correlation statistic and factor analysis were used to test the reliability and validity of the BDI-Hausa. Also, the independent t-test was used to compare the mean scores of the respondents on BDI-Hausa based on different demographic factors. The final statistic used was the Univariate Analysis. Statistical Package for Social Science (SPSS) version 27

### III. RESULTS

#### Descriptive Statistics

Assessment of the general prevalence of depression among the study population was done using mean statistics and the result indicated that 144(35.5%) of the respondents had minimal depression with mean scores 7.61(Std.=3.88), 88(21.7%) had mild depression with mean scores of 16.40(Std.=1.81), 99(24.4%) had moderate depression with mean scores of 23.89(Std.=3.02), while 75(18.5%) had severe depression with mean scores of 37.29(Std.=6.21). This indicates a high incidence of depression among the study population. This finding is consistent with that of Adamu, Oche, Abel, Garba, and Zubairu (2021) who assessed the prevalence, pattern, and risk factors associated with affective depression among women in rural areas of Sokoto state and found that the overall prevalence of depression was high in this study and the prevalence was slightly higher in a monogamous group than polygamous; most respondents in both groups had mild depression. The result is presented in table 2 below.

**Table 2 Mean statistics showing levels of depression among the respondents**

| Levels of Depression | N   | Percent (%) | Mean  | Standard Deviation |
|----------------------|-----|-------------|-------|--------------------|
| Minimal Depression   | 144 | 35.5        | 7.61  | 3.88               |
| Mild Depression      | 88  | 21.7        | 16.40 | 1.81               |
| Moderate Depression  | 99  | 24.4        | 23.89 | 3.02               |
| Severe Depression    | 75  | 18.5        | 37.29 | 6.21               |
| Total                | 406 | 100.0       | -     | -                  |

#### Hypotheses Testing

**Hypothesis 1:** There will be significant main and interactive effects of age, employment status, and sex in the composite scores of the affective

symptoms of the BDI-II Hausa version. Univariate analysis was used in testing the hypothesis and the result is presented in Table 3 and 4.



**Table 3: Mean and standard deviation for age, employment status, and sex on affective symptoms of the BDI-II Hausa version.**

| Variable   | Category          | N   | Mean | Std. Dev. |
|------------|-------------------|-----|------|-----------|
| Age        | Younger (<=27yrs) | 206 | 6.66 | 5.36      |
|            | Older (28+yrs)    | 188 | 7.44 | 5.50      |
| Employment | Self-employment   | 238 | 7.32 | 5.84      |
|            | Govt. employment  | 156 | 6.59 | 4.75      |
| Sex        | Male              | 322 | 7.09 | 5.50      |
|            | Female            | 72  | 6.74 | 5.16      |

**Table 4: Univariate analysis showing main and interaction effects of age, employment status, and sex on affective symptoms of the BDI-II Hausa version**

| Source                         | Type III Sum of Squares | df  | Mean Square | F       | Sig. | Partial Eta Squared |
|--------------------------------|-------------------------|-----|-------------|---------|------|---------------------|
| Corrected Model                | 375.522 <sup>a</sup>    | 7   | 53.646      | 1.843   | .078 | .032                |
| Intercept                      | 8398.266                | 1   | 8398.266    | 288.483 | .000 | .428                |
| Agecategory                    | 192.844                 | 1   | 192.844     | 6.624   | .010 | .017                |
| Employment                     | 1.284                   | 1   | 1.284       | .044    | .834 | .000                |
| Sex                            | 15.091                  | 1   | 15.091      | .518    | .472 | .001                |
| Agecategory * Employment       | 30.463                  | 1   | 30.463      | 1.046   | .307 | .003                |
| Agecategory * Sex              | 158.843                 | 1   | 158.843     | 5.456   | .020 | .014                |
| Employment * Sex               | 73.456                  | 1   | 73.456      | 2.523   | .113 | .006                |
| Agecategory * Employment * Sex | 56.788                  | 1   | 56.788      | 1.951   | .163 | .005                |
| Error                          | 11237.171               | 386 | 29.112      |         |      |                     |
| Total                          | 31073.000               | 394 |             |         |      |                     |
| Corrected Total                | 11612.693               | 393 |             |         |      |                     |

a. R Squared = .032 (Adjusted R Squared = .015)

The results presented in Tables 3 & 4 revealed that there is a significant main effect of age on affective symptoms of the BDI-II Hausa version  $F(1,386)=6.624, p<.05$ . The results in Table 4. indicate that older persons ( $N=188, \text{mean}=7.44, \text{Std.}=5.50$ ) scored significantly higher on affective symptoms of depression on the BDI-II Hausa version in comparison to younger persons ( $N=206, \text{mean}=6.66, \text{Std.}=5.36$ ). The Partial Eta Squared value of .017 further showed that the main effect of age on affective symptoms of depression on the BDI-II Hausa version is small in line with Cohen (1988). However, employment status  $F(1,386)=0.044, p>.05$  and sex  $F(1,386)=0.518, p>.05$  showed no significant main effects on affective symptoms of the BDI-II Hausa version. Furthermore, results showed that there was a

significant interaction effect of age and sex  $F(1,386)=5.456, p<.05$ . The Partial Eta Square of .014 indicates a small interaction effect by age and sex. However, there were no significant interaction effects of age and employment status  $F(1,386)=1.046, p>.05$ ; employment status and sex  $F(1,38)=2.523, p>.05$ ; as well as age, employment status, and sex  $F(1,386)=1.951, p>.05$ . Therefore, hypothesis 1 was confirmed for the main effect of age and interaction effect of age and sex.

**Hypothesis 2:** There will be significant main and interactive effects of age, employment status, and sex in the composite scores of the somatic symptoms of depression on the BDI-II Hausa version. Univariate analysis was used in testing the hypothesis and the result is presented in Tables 5 and 6.



**Table 5: Mean and standard deviation for age, employment status, and sex on somatic symptoms of depression on the BDI-II Hausa version.**

| Variable   | Category          | N   | Mean  | Std. Dev. |
|------------|-------------------|-----|-------|-----------|
| Age        | Younger (<=27yrs) | 206 | 11.19 | 6.65      |
|            | Older (28+yrs)    | 188 | 12.38 | 7.05      |
| Employment | Self-employment   | 238 | 12.16 | 7.19      |
|            | Govt. employment  | 156 | 11.53 | 6.38      |
| Sex        | Male              | 322 | 11.83 | 6.68      |
|            | Female            | 72  | 12.29 | 7.74      |

**Table 6: Univariate analysis showing main and interaction effects of age, employment status, and sex on somatic symptoms of depression on the BDI-II Hausa version**

| Source                         | Type III Sum of Squares | Df  | Mean Square | F       | Sig. | Partial Eta Squared |
|--------------------------------|-------------------------|-----|-------------|---------|------|---------------------|
| Corrected Model                | 678.899 <sup>a</sup>    | 7   | 96.986      | 2.090   | .044 | .037                |
| Intercept                      | 25926.260               | 1   | 25926.260   | 558.763 | .000 | .591                |
| Agecategory                    | 297.783                 | 1   | 297.783     | 6.418   | .012 | .016                |
| Employment                     | 29.449                  | 1   | 29.449      | .635    | .426 | .002                |
| Sex                            | 200.598                 | 1   | 200.598     | 4.323   | .038 | .011                |
| Agecategory * Employment       | 1.364                   | 1   | 1.364       | .029    | .864 | .000                |
| Agecategory * Sex              | 121.546                 | 1   | 121.546     | 2.620   | .106 | .007                |
| Employment * Sex               | 174.510                 | 1   | 174.510     | 3.761   | .053 | .010                |
| Agecategory * Employment * Sex | .024                    | 1   | .024        | .001    | .982 | .000                |
| Error                          | 17910.167               | 386 | 46.399      |         |      |                     |
| Total                          | 74512.000               | 394 |             |         |      |                     |
| Corrected Total                | 18589.066               | 393 |             |         |      |                     |

a. R Squared = .037 (Adjusted R Squared = .019)

The results presented in Tables 5 & 6 revealed that there was a significant main effect of age  $F(1,386)=6.418, p<.05$ , and sex  $F(1,386)=4.323, p<.05$  on somatic symptoms of the BDI-II Hausa version. The results in Table 6 indicate that older persons ( $N=188$ , mean=12.38, Std.=7.05) scored significantly higher on somatic symptoms of the BDI-II Hausa version compared to younger persons ( $N=206$ , mean=11.19, Std.=6.65). The Partial Eta Squared value of .016 further showed that the main effect of age on somatic symptoms of depression on the BDI-II Hausa version is small. In terms of sex, the descriptive statistics in Table 2 indicate that females ( $N=72$ , mean=12.29, Std.=7.74) scored significantly higher on somatic symptoms of depression on the BDI-II Hausa version compared to males ( $N=322$ , mean=11.83, Std.=6.68). The Partial Eta Squared value of .011 showed that the main effect of sex on somatic symptoms of the BDI-II Hausa version is small. However, employment status  $F(1,386)=0.635, p>.05$  showed no significant main effect on somatic symptoms of depression on the BDI-II Hausa version. Furthermore, results

showed that there was a significant interaction effect of employment status and sex  $F(1,386)=3.761, p<.05$ . The Partial Eta Square of .010 indicates a small interaction effect by employment and sex. However, there were no significant interaction effects of age and employment status  $F(1,386)=.029, p>.05$ ; age and sex  $F(1,386)=2.620, p>.05$ ; as well as age, employment status, and sex  $F(1,386)=.001, p>.05$ . Therefore, hypothesis 2 was confirmed for the main effect of age and sex as well as the interaction effect of employment status and sex.

#### IV. Discussion

The study set out to investigate predictive factors of depression in Hausa people in North-west Nigeria. Assessment of depression among the study population indicated that 144(35.5%) of the respondents had minimal depression with mean scores of 7.61 (std = 24.4%), 81(21.7%) had mild depression with mean scores of 61.40 (Std= 1.81), 99(24.4%) had moderate depression with mean scores of 23.89 (Std= 3.02) while 75(18.5%) had severe depression with mean scores of 37.9% (Std=



6.21%). This indicates a high incidence of depression among the study population. This finding is in line with that of Adamu, Oche, Abel, Garba, and Zubairu (2021) who assessed the prevalence, pattern, and risk factors associated with affective depression among women in rural areas of Sokoto state and found that the overall prevalence of depression was high in this study and the prevalence was slightly higher in a monogamous group than polygamous; most respondents in both groups had mild depression.

The first hypothesis stated that there will be significant main and interaction effects of age, employment status, and sex in the composite scores of the affective symptoms of depression on the BDI-II Hausa version. It was tested using Univariate analysis and the result revealed that there is a significant main effect of age on affective symptoms of the BDI-II Hausa version. The results also indicated that older persons aged 28 and above scored significantly higher on affective symptoms of depression on the BDI-II Hausa version compared to younger persons aged 27 and below. This finding is consistent with that of Anguzu, Nagavally, Dawson, Walker and Egede (2021) who examined age and gender differences in the relationship between affective depression and quality of life among United States adults. Using Medical Expenditure Panel Survey data for 2008–2016 on 227,663 adults were analyzed. The dependent variable, quality of life (QoL), included physical component summary (PCS) scores and mental component summary (MCS) scores from the Short Form Health Survey (SF-12). The key independent variable, depression, was measured using the 2-item Patient Health Questionnaire. General linear regression models examined the relationship between QoL and depression, and found that women and men of all ages with depression had significantly lower MCS scores compared to those without depression. They concluded that public health interventions and clinical approaches to address depression in women and men should target functional status in men and perceptions of health in women.

Smimilarly there was a significant interaction effects of age and sex on affective symptoms of depression on the BDI-II Hausa Version. The Partial Eta Squared value further showed that the main effect of age on affective symptoms of depression on the BDI-II Hausa version is small in line with Cohen (1988). However, employment status showed no significant main effects on affective symptoms of the BDI-II Hausa version. Furthermore, results showed that

there was a significant interaction effect of age and sex. The Partial Eta Square indicates a small interaction effect of age and sex. However, there were no significant interaction effects of age and employment status, employment status and sex as well as age, employment status, and sex. This finding is in line with research by Afolabi, Abioyekuteyi, Fatoye, Bello and Adewuya (2008) who found no significant relationship between depression and unemployment among general outpatients

The results of second the hypothesis indicated that there was a significant main effect of age on somatic symptoms of depression on the BDI-II Hausa version. This finding agreed with that of Choi and Kim (2021) who identified the predictors of sleep quality, a CVD risk factor, in middle-aged women with CVD risk factors to provide foundational data for developing intervention strategies for the prevention of CVD. The results showed that sleep quality increased with decreasing somatic symptoms, depression symptom score, and daily sedentary time, and the regression model was significant. Somatic symptoms are the most potent predictors of sleep quality in middle-aged women. They recommended that intervention strategies that improve somatic symptoms are crucial for the enhancement of sleep quality, which deteriorates with advancing age. The Partial Eta Squared value further showed that the main effect of age on somatic symptoms of depression on the BDI-II Hausa version was small. There was also significant main effect of sex on somatic symptoms of depression on the BDI-II Hausa version. The Partial Eta Squared value showed that the main effect of sex on somatic symptoms of depression on the BDI-II Hausa version was small. This finding is consistent with that of Tadi, Pillay, Ejoke and Khumalo (2022) who investigated sex-specific differences in the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7). This comprehensive cross-sectional design study pursued four objectives: measurement invariance of PHQ-9 and GAD-7 between male and female; depression and anxiety prevalence differences; cross-sex differences in the relationship between depression and anxiety; and a comparison of symptom heterogeneity. The somatic and non-somatic latent dimensions of depression were compared and showed no significant difference between male and female groups. The positive relationship between depression and anxiety was also not significantly different between the two groups. While the PHQ-9 symptoms formed three classes in the male group, and four classes in the



female group, the GAD-7 had the same number of classes (three) and a similar pattern between the two groups. These findings hold implications for the measurement, assessment and understanding of symptom manifestation and distribution, as well as the treatment of depression and anxiety in South Africa.

Further finding showed that there was a significant interaction effect of employment status and sex on somatic symptoms of depression on BDI-II Hausa Version. The Partial Eta Square indicates a small interaction effect by employment and sex. This finding conformed with that of Ugbe, Esu, Efut, Bisongedam, Awa and Ekpo (2022) who sought to identify socio-demographic correlates and other factors associated with somatic depression and anxiety among internally displaced adults in Ogoja, Cross River State, Nigeria. A cross-sectional study was conducted using non-probability and probability sampling techniques. Internally displaced adults (n=335) were identified in Ogoja locations with a high prevalence of internally displaced persons (IDPs). Factors found to be significant in each bivariate  $\chi^2$  analysis were modeled for each outcome. The multivariate analysis revealed that prolonged displacement (adjusted odds ratio, reduced family size; and fears of reprisal attacks were significantly associated with anxiety disorder. Male gender, prolonged displacement, reduced family size, financial strain and loss of loved ones were significantly associated with depression. The implications of the findings underline the complex aetiology of these two mental problems and the need to cater to the well-being of those at risk who have been exposed to trauma-related events. Accessible and affordable mental health services should be provided for these persons while also considering a social welfare scheme that covers their health expenses. Moreover, socioeconomic condition targeting IDPs in the Ogoja Local Government Area should be improved by conducting large-scale mapping to identify this population.

Generally, the majority of the participants were male (the percentage of males 322(81%) and 72(19%) showed that the difference between males and females is 62%. because of the Muslim culture of not exposing their women, where a woman is meant to stay at home.

## V. Conclusion

Based on the finding of the study, it was therefore concluded that, there was a main effect of age on Affective symptoms of depression on BDI-II Hausa Version.. there was a significant interaction

effect of age and on Affective symptoms of depression on the BDI-II Hausa Version. Furthermore, there was a significant main effect of age on Somatic symptoms of Depression on BDI-II Hausa Version. Similarly, there was a significant main effect of sex on somatic symptoms of depression on BDI-II Hausa Version. Finally, there was a significant interaction effect of employment status and sex on somatic symptoms of depression on Hausa Version.

## VI. Recommendations

Based on the outcomes of this study the following recommendations were made;

- I. Clinical psychologist should be employed in public and private hospitals in North-west Nigeria to give the general population access to mental health treatment.
- II. The fact that age and sex as demographic variables made significant contribution to depression in this study calls for need to identify risk factors for depression for which future clinical or treatment decisions can be made.
- III. The fact that participant in the study area were found to have severe depression reveals the need for regular assessment and screening for mental health challenges among this group of people.
- IV. Since employment status did not have significant effect on symptoms of depression, effort should be made to reduce incidence of depression among this categories of people.
- V. People from North-west Nigeria, can benefit from psychoeducation in the use of cognitive re-appraisal as a more adaptive emotion regulation strategy in difficult life situation.

## VI. Limitations

It is important to note that the study was conducted with a relatively small sample (406) which can limit the generalization of the findings, the findings need to be replicated with larger samples before drawing concrete conclusions. The population was drawn from three (3) states out of the seven (7) states in Northwest Nigeria that are dominated by the Hausa Hausa-speaking population. The majority of the participants were male because of the Muslim culture of restricting women from mingling, not exposing them to outsiders, where a woman is meant to stay at home, this may have affected the findings. Because of the insecurity of kidnapping and banditry in the north, it took the researcher about four months to complete the administration of questionnaires. The time it took participants to complete the questionnaire was fifty minutes to one hour and thirty minutes. Some



participants felt the questionnaires were too long and time-consuming, which may have affected their responses. Some persons refused to participate in the research for fear of the unknown. The majority of the participants are self-employed.

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