Original Research

ScopeMed

Prevalence and factors associated with depressive symptoms among Yoruba adults in a semi-urban community in South-Western Nigeria

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ABSTRACT

Background: Previous cross-cultural and mono-cultural studies have reported the prevalence of depressive symptoms to vary across different populations and ethnic groups. Research on prevalence and factors associated with depressive symptoms among adults in the different geopolitical regions of Nigeria is sparse, despite the differences in sociocultural attribute. **Aim:** The aim was to assess the prevalence and factors associated with depressive symptoms among Yoruba adults in South-Western Nigeria. **Methods:** Data on 200 Yoruba adults residing in Ile-Ife, Nigeria were collected using a questionnaire composed of socio-demographic data, quality of life (QoL), overall health, perceived stress, and depressive symptoms. **Results:** The prevalence of depressive symptoms among the respondents was 17.0% (male = 15.9%, female = 18.3%). The depressed respondents reported higher mean scores on all items of the Zung's self-rating depression scale compared to the non-depressed except in suicidal rumination. Smoking of tobacco was significantly associated depression ($P < 0.025$). The non-depressed respondents reported significant higher mean scores on overall QoL and overall health compared to the depressed respondents ($P < 0.001$). However, depressed respondents reported significant higher perceived stress when compared to the non-depressed ($P < 0.001$). The predictors of depressive symptoms were perceived stress (odds ratio [OR] = 1.409, 95% confidence interval [CI] = 1.167-1.702) and overall health (OR = 0.288, 95% CI = 0.130-0.638). **Conclusion:** Prevalence of depressive symptoms is high among our sample and factors that significantly predicted it includes high perceived stress and poor self-rated overall health. The findings in this study support the development of interventional strategies targeted specifically at ameliorating stress levels and improving general health at the level of the community.

KEY WORDS: Community, depressive symptoms, Nigeria, prevalence, Yoruba

INTRODUCTION

Mental disorders are very common worldwide, but there is a wide treatment gap between developed and developing countries [1]. The Mental Health Gap Action Program (mhGAP) is a recent World Health Organization initiative aimed at reducing this wide treatment gap. One of the priority conditions covered by the mhGAP is depression, which has recently been identified as a leading cause of burden [2]. Depression as a mood disorder is a continuum along a spectrum with increasing symptoms severity from the non-specific depressive symptoms to major depression [3]. Research has shown that the presence of depressive symptoms is significant risk indicators for major depressive disorder as it forms part of the prodromal phase of the disorder [4]. An individual is considered to have depressive symptoms when he or she has clinically relevant depressive symptoms, without

meeting criteria for a major depressive disorder [4]. The depressive symptoms are usually assessed using self-reported frequencies of feeling sad, hopelessness, and worthlessness in addition to other features and operationalized as scoring above a cut-off point on a self-rating depression scale (SDS).

Depressive symptoms have been reported in the developed countries to be prevalent with associated considerable economic costs [5]. At the individual level, disability from depressive symptoms is lower than for depressive disorders. However, the burden of disability for the population as a whole is substantial for depressive symptoms because of its greater prevalence [6]. Given that depressive disorders were the leading cause of burden globally [2]; depressive symptoms falling short of a disorder are also of major public health significance. The clinical relevance and public health significance of

depressive symptoms not meeting diagnostic criteria have been demonstrated in the developed countries [5]. Individuals with elevated depressive symptoms are at risk of several health-related and social problems such as poor health status and quality of life (QoL) [7,8]; financial strains, perceived stress, social irritability, limitations in occupational, and physical functioning [9-11].

Nigeria is a multi-ethnic country with diverse culture and the Yoruba population is located in the South-Western region of the country. The Yoruba is a major ethnic group that constitutes about 21% (about 30 million) of the total Nigerian population [12]. The Yoruba culture has a strong family orientation, which is said to be patho-protective. However, the western culture of individualism has diffused into the Yoruba culture thereby changing the family values. Furthermore, in the past three decades, Nigeria has experienced socioeconomic changes which might have influenced the health of the general population and accordingly the prevalence of depression. Previous cross-cultural and mono-cultural studies have found that the prevalence of depressive symptoms varies across different populations and ethnic groups [13]. However, research on the prevalence and factors associated with depressive symptoms among adults living in the different geopolitical regions of Nigeria is sparse. In a recent community-based study by Amoran *et al.* conducted in the South-Western part of Nigeria with mixed ethnic group using Patient Health Questionnaire (PHQ-9), the prevalence of depressive symptom was reported to be 35.5% [14]. If the cultural differences in the expression of depression between different ethnic groups may affect its recognition, identifying these differences may be a critical step in developing specific management plans that will be culturally acceptable to members of the community [15]. The comparison of depressive symptoms among different ethnic groups in Nigeria would be ideal. However, the initial step toward this will be the assessment of depressive symptoms among an ethnic group in Nigeria like the Yoruba people, and this will also provide useful information. Thus, the aim of this study is to assess the prevalence and factors associated with depressive symptoms among Yoruba adults living in Ile-Ife, South-Western Nigeria.

METHODS

Setting

The study was conducted in Ife Central Local Government of Ile-Ife, an ancient Yoruba city in South-Western Nigeria. Ile-Ife is located between latitudes 7°28′N and 7°45′N and longitudes 4°30′E and 4°34′E. Historically, the Yoruba people believe that Ile-Ife was the first place on earth from which all creation began. Hence, Ile-Ife is referred to as the ancestral home of the Yoruba people. The city is situated within two local government areas (LGA); Ife Central LGA and Ife East LGA with a population of about 200,000 [16]. Ife central LGA is made up of eleven wards. The major occupation of the inhabitants of the city is farming, trading, artisan, and public service.

Subjects

This study was a descriptive cross-sectional survey. The study was conducted among adults in Ife Central LGA who met the inclusion criteria. Inclusion criteria were individuals must be Yoruba between the age 18 and 64 years. Exclusion criteria were those below the age of 18 years or above 64 years and are not Yoruba. Ife Central LGA consists of eleven wards and six wards were randomly selected using balloting. Thirty-five adults were randomly selected from each ward. The first house in each ward was selected from the list of streets within the ward through a random sampling technique, and every other third house was selected. In the houses, only one individual who met the inclusion criteria were randomly selected.

Assessment

The respondents completed the following questionnaires which consist of three sections.

Section A: Contain socio-demographic characteristics which consist age, sex, marital status, highest level of formal education, religion, current employment status, and if respondents take alcohol or smoke tobacco.

Section B: Assessed respondents' QoL, overall health, and perceived stress.

Self-rated QoL was measured by the question: "How do you rate your QoL?" Interviewers scored the answers on a 5-point scale from 1 (very poor) to 5 (very good).

Self-rated overall health was measured by the question: "How do you rate your overall health?" Interviewers scored the answers on a 5-point scale from 1 (very poor) to 5 (very good).

Perceived stress was measured using the 4-item perceived stress scale (PSS) [17]. The PSS is a self-report questionnaire that measures persons' evaluation of the stressfulness of the situations in the past month of their lives. The PSS measures the degree to which situations in one's life are appraised as stressful. PSS - 4 scores are obtained by reversing the scores on the two positive items (question 2 and 3), e.g. 0 = 4, 1 = 3, 2 = 2, etc., and then summing across all 4 items. Items 1 and 4 are the positively stated items. Scores can range from 0 to 16, with higher scores indicating greater stress.

Section C: Assessed depressive symptoms using the Zung's SDS [18] which is a 20-item self-administered questionnaire with 4-fold likert's scale (Never, occasionally, sometimes, mostly) response alternatives each question. The sum of scores (raw scores) for each respondent was converted to a 100 point scale with a score of less than 50 points classified as normal, 50-59 points classified as mild depression, 60-69 points classified as moderate depression, and 70 and above points classified as severe depression. The instrument and its back translated Yoruba version has been validated for use in Nigeria [19].

Data Collection

The questionnaire was administered to respondents in either English or Yoruba language. They were instructed on how to complete the questionnaire.

Ethical Clearance

Ethical approval for the study was requested and granted by the Ethical and Research Committee of the Obafemi Awolowo University Teaching Hospitals, Complex, Ile-Ife, Osun State, and permission were also obtained from the Ife Central LGA. Verbal consent was obtained from the subjects after the aim and objectives of the study had been explained to them. Ethical issues like confidentiality, opportunity to decline interview at any stage, and non-exposure to risk were also discussed with each respondents.

Statistical Method: Data entry and analysis were done using the Statistical Package for Social Sciences software, version 18. The data were described in terms frequency, percentage, mean, and standard deviation. Chi-square and Student's *t*-test were used to compare the respondent with and without depressive symptoms. Multiple logistic regression analysis of significant factors associated with depression was also done. All tests were 2-tailed, and the level of statistical significance was set at $P < 0.05$.

RESULTS

Table 1 shows the characteristics of the respondents. A total of 210 respondents were recruited, 10 had incomplete data thus 200 were analyzed giving a response rate of 95.2%. One hundred and thirty-six respondents (68.0%) were less than 40 years old and the male to female ratio was 1:0.77. Most of the respondents (53.0%) were married and the majority (55.0%) had tertiary education. A large percentage of respondents (79.5%) are Christians and most (60.5%) were employed. Current alcohol and tobacco use were indicated by 30.5% and 4.5% of the respondents, respectively. The severity of depression among respondents using Zung's SDS shows that the prevalence of depressive symptoms were 17.0% (male = 15.9%, female = 18.3%) in which 13.5% had mild depression (male = 12.4%, female = 14.9%), 3.5% had moderate depression (male = 3.5%, female = 3.4%), and none was categorized as severe depression.

Table 2 shows the Zung's SDS mean item score between depressed and non-depressed respondents. The depressed respondents reported higher mean scores on all items of Zung's SDS compared to the non-depressed with the exception of suicidal rumination. Furthermore, there were statistical significant differences between depressed and non-depressed respondents in most of the item scores ($P < 0.002$) except in the following items: Diurnal variation, constipation, psychomotor agitation, and suicidal ideation. Table 3 shows that only smoking of tobacco was significantly associated with the presence of depressive symptoms ($P < 0.025$). In

Table 1: Characteristics of the respondents

Variable	Male *n*=113 (56.5%)	Female *n*=87 (43.5%)	Total *n*=200 (100%)
Age group (years)			
20-29	44 (38.9)	43 (49.4)	87 (43.5)
30-39	26 (23.0)	23 (26.4)	49 (24.5)
40-49	26 (23.0)	9 (10.3)	35 (17.5)
≥50	17 (15.1)	12 (13.8)	29 (14.5)
Marital status			
Single	48 (42.5)	36 (41.4)	84 (42.0)
Married	60 (53.1)	46 (52.9)	106 (53.0)
Separated/divorced/ Widowed	5 (4.4)	5 (5.7)	10 (5.0)
Educational level			
Primary	14 (12.4)	8 (9.2)	22 (11.0)
Secondary	44 (38.9)	24 (27.6)	68 (34.0)
Tertiary	55 (48.7)	55 (63.2)	110 (55.0)
Religion			
Christianity	86 (76.1)	73 (83.9)	159 (79.5)
Islam	27 (23.9)	14 (16.1)	41 (20.5)
Employment status			
Employed	76 (67.3)	45 (51.7)	121 (60.5)
Unemployed	37 (32.7)	42 (48.3)	79 (39.5)
Alcohol use			
Yes	51 (45.1)	10 (11.5)	61 (30.5)
No	62 (54.9)	77 (88.5)	139 (69.5)
Tobacco use			
Yes	9 (8.0)	0 (0.0)	9 (4.5)
No	104 (92.0)	87 (100.0)	191 (95.5)
Severity of depression			
None	95 (84.1)	71 (81.6)	166 (83.0)
Mild depression	14 (12.4)	13 (14.9)	27 (13.5)
Moderate depression	4 (3.5)	3 (3.4)	7 (3.5)

Table 2: Zung's SDS item scores between depressed and non-depressed respondents

Zung's SDS items	Mean (SD)		*t*	*P* value
	Not depressed (SDS<50)	Depressed (SDS≥50)		
	n=166	*n*=34		
Depressed affect	1.43 (0.61)	2.03 (0.58)	−5.27	<0.001
Diurnal variation	2.37 (1.22)	2.79 (0.81)	−1.92	0.056
Crying spells	1.19 (0.41)	1.79 (0.73)	−6.66	<0.001
Sleeping disturbance	1.49 (0.86)	2.11 (0.84)	−3.84	<0.001
Decrease appetite	1.99 (1.00)	2.94 (0.85)	−5.17	<0.001
Decrease libido	2.18 (1.19)	3.18 (0.67)	−4.74	<0.001
Weight loss	1.35 (0.63)	2.11 (0.73)	−6.23	<0.001
Constipation	1.36 (0.86)	1.59 (0.70)	−1.46	0.145
Tachycardia	1.27 (0.48)	1.59 (0.70)	−3.25	0.001
Fatigue	1.41 (0.58)	1.97 (0.87)	−4.67	<0.001
Confusion	1.61 (0.99)	3.00 (0.85)	−7.63	<0.001
Psychomotor retardation	1.63 (0.96)	3.11 (0.80)	−8.41	<0.001
Psychomotor agitation	1.21 (0.67)	1.23 (0.50)	−0.16	0.869
Hopelessness	1.25 (0.49)	1.91 (0.71)	−6.58	<0.001
Irritability	1.36 (0.62)	1.88 (0.64)	−4.43	<0.001
Indecisiveness	1.65 (0.75)	2.97 (0.67)	−9.51	<0.001
Personal devaluation	1.40 (1.17)	2.24 (0.85)	−3.97	<0.001
Emptiness	2.09 (0.77)	2.56 (0.89)	−3.16	0.002
Suicidal rumination	1.63 (1.11)	1.26 (0.75)	1.86	0.065
Dissatisfaction	1.51 (0.69)	2.62 (1.13)	−7.55	<0.001

SDS: Self-rating depression scale, SD: Standard deviation

Table 4, the non-depressed respondents reported significant higher mean scores on overall QoL and overall health than the depressed ($P < 0.001$). On the other hand, depressed

Table 3: Association between depression and socio-demographic characteristics of respondents

Variable	Not depressed (SDS<50) n=166	Depressed (SDS≥50) n=34	Statistics
Age group (years)			
20-29	69 (79.3)	18 (20.7)	χ^2=1.866*
30-39	42 (85.7)	7 (14.3)	df=3
40-49	31 (88.6)	4 (11.4)	P=0.601
≥50	24 (88.8)	5 (17.2)	
Sex			
Male	95 (84.1)	18 (15.9)	χ^2=0.211
Female	71 (81.7)	16 (18.3)	df=1
			P=0.646
Marital status			
Single	73 (86.9)	11 (13.1)	χ^2=4.721*
Married	87 (82.1)	19 (17.9)	df=2
Separated/divorced/widowed	6 (60.0)	4 (40.0)	P=0.094
Educational level			
Primary	19 (86.4)	3 (13.6)	χ^2=1.879*
Secondary	53 (77.9)	15 (22.1)	df=2
Tertiary	94 (84.5)	16 (14.5)	P=0.391
Religion			
Christianity	132 (83.0)	27 (17.0)	χ^2=0.000
Islam	34 (82.9)	7 (17.1)	df=1
			P=0.989
Employment status			
Employed	100 (82.6)	21 (17.4)	χ^2=0.027
Unemployed	66 (83.5)	13 (16.5)	df=1
			P=0.868
Alcohol use			
Yes	49 (80.3)	12 (19.7)	χ^2=0.444
No	117 (84.2)	22 (15.8)	df=1
			P=0.505
Tobacco use			
Yes	5 (55.6)	4 (44.4)	χ^2=5.031*
No	161 (84.3)	30 (15.7)	df=1
			P=0.025

*Yates correction applied; df: Degree of freedom, SDS: Self-rating depression scale

Table 4: Association between depression, overall quality of life, overall health satisfaction, and perceived stress among respondents

Variable	Mean (SD)			Statistics	
	Total n=200	Not depressed (SDS<50) n=166	Depressed (SDS≥50) n=166	t	P value
Overall QoL	3.86 (0.72)	3.97 (0.57)	3.32 (1.07)	5.09	<0.001
Overall Health	4.05 (0.65)	4.16 (0.50)	3.53 (0.96)	5.51	<0.001
Perceived stress	8.38 (2.66)	8.02 (2.53)	10.09 (2.64)	−4.31	<0.001

SDS: Self-rating depression scale, SD: Standard deviation, QoL: Quality of life

Table 5: Logistic regression analysis of significant factors associated with depression in the respondents

Variable	B	SE	Wald	P value	OR	95% CI
Tobacco use	−0.770	0.862	0.797	0.372	0.463	0.085-2.510
Perceived stress	0.343	0.096	12.743	<0.001	1.409	1.167-1.702
Overall QoL	−0.609	0.359	2.878	0.090	0.544	0.269-1.099
Overall health	−1.246	0.406	9.398	0.002	0.288	0.130-0.638

SE: Standard error, OR: Odds ratio, CI: Confidence interval

respondents reported significant higher perceived stress than non-depressed ($P < 0.001$). Table 5 shows that perceived stress and overall health were significantly associated with the presence of depressive symptoms.

DISCUSSION

This study assessed the prevalence of depressive symptoms among a sample of Yoruba adults living in a semi-urban community setting in Nigeria and further compared individuals with and without depressive symptoms. The study further identified the factors that significantly predicted the presence of depressive symptoms among Yoruba adult population in Nigeria. The prevalence of depressive symptoms (Zung SDS ≥ 50) in this study was 17.0% (15.9% and 18.3% in men and women, respectively), which is comparable to 20.5% reported in a community-based studies among Zay adults in Ethiopia using the Composite International Diagnostic Interview [20], and 18.0% reported among South African adults using the Self Reporting Questionnaire [21]. In a multiethnic study conducted in South-Western Nigeria using the PHQ-9, the prevalence of depressive symptoms was reported as 35.5% [14], while another study in South-Eastern Nigeria using Zung SDS reported a prevalence of 25.0% [22]. However, the prevalence of depressive symptoms in this study is higher than 11.1% reported among Estonian adult using the Emotional State Questionnaire [23] and 5.9% reported in a rural Chinese population using the PHQ-9 [24]. The plausible reasons for the wide range of prevalence rates of depressive symptoms across the different studies may be attributed to the differences in the methodology with respect to study population, instruments, and setting. In addition, the variation observed in the prevalence rate of depression may be a reflection of the influence of predisposing factors intrinsic or specific to the different environment where the studies have been conducted. In this study, the female respondents reported a higher prevalence of depressive symptoms (18.3%) when compared with the males (15.9%), an observation similar to the findings of previous studies [23,24]. However, there was no statistical significant association between depressive symptoms and gender ($P = 0.646$). This is in agreement with the findings of other Nigerian studies [25,26]. The lack of significant difference in the rates of depressive symptoms across gender in this study could be attributed to the fact that there were more male respondents than female, thereby making the percentage of the depressed respondents across gender to be fairly close. We found that the symptom profile of individuals with depressive symptoms differ significantly from that of individuals without depressive symptoms except in the diurnal variation, constipation, psychomotor agitation, and suicidal rumination. Interestingly, the mean score for suicidal rumination was higher among respondents without depressive symptoms than those with depressive symptoms, but this difference was not statistically significant. Hence, there is the need for further exploration of suicidal rumination and behavior among Yoruba people in future studies. Contrary to the findings in previous studies [14,20,26], none of the socio-demographic factors in this study was associated with depressive symptom with the exception of tobacco smoking. Comparatively, this study showed that there were significantly

more tobacco smokers among respondents with depressive symptoms (44.4%) than the non-smokers (15.5%) and this is in agreement with previous studies [27,28]. The use of tobacco has been found to increase positive affect and/or decrease negative affect [29]. However, tobacco smoking has also been shown to trigger the first depressive episode [30]. The multivariate analysis in this study showed that depressive symptoms were not associated with smoking of tobacco. Therefore, a longitudinal research looking into more details about smoking behavior would be helpful in the future to determine the different relationships between depression and smoking of tobacco in this environment. A surprising finding in this study contrary to what has been previously reported [31,32] was that alcohol use was not significantly associated with depressive symptoms. The reason for this may be that the amount and frequency of alcohol consumption was not assessed in this study and further exploration in future studies will be needed. In agreement with other studies, this study found that poor self-rated overall health [7,33] and perceived stress [10,11] were significantly associated with depressive symptoms. The low subjective rating of health is a frequent indicator of impairment associated with depression [9]. Furthermore, self-rated health negatively predicted depressive symptoms score among the respondents in this study. Therefore, the lower the self-rated overall health reported by respondents, the higher the depressive symptoms. Perceived stress positively predicted depressive symptoms; the higher the perceived stress, the higher depressive symptoms reported by respondents. The Nigerian environment presents great stress on the family which has led to the gradual breakdown in the family-oriented cultural values of the Yoruba people and as a result, there is reduction in the levels of protective factors for depressive symptoms such as family support, cultural identity, and cohesion [26,34].

This study has some limitations. First, it was conducted in one ethnic group in Nigeria and thereby decreases its generalizability to other ethnic groups. Second, the effect of cultural perception and believe could not be ascertained in this study and this may affect respondents interpretation of the questionnaire. Third, depression measure depends on respondents self-report. However, Zung SDS has been validated for use in this environment, and we believe that it gave a fairly accurate gauge of respondents feeling state. Fourth, our sample size was relatively small.

In conclusion, this study has provided relevant information on depressive symptoms among Yoruba people in Nigeria. The study has revealed that the prevalence of depressive symptoms is high among Yoruba people and factors that significantly predicted it includes high perceived stress and poor self-rated overall health. The high prevalence of depressive symptoms presents a serious public health problem as depressive symptoms have been shown to predispose to the future development of major depression [35]. Therefore, the findings of this study support the development of interventional strategies targeted specifically at ameliorating stress levels and improving the general health of the community, which will help in preventing or reducing the prevalence of depression among the Yoruba adults in South-Western Nigeria.

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