

Pattern of depression among patients in a Nigerian family practice population

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Abstract

Background: This study determines the pattern of depression among patients attending the Family Practice Clinic at Wesley Guild Hospital, Ilesa, Nigeria. Socio-demographic and clinical correlates associated with depression were identified.

Methods: Two hundred and fifty (250) newly registered patients who attended the clinic between June and September 2005 were selected by the systematic random sampling method and studied. Relevant data were collected using a pre-tested interviewer-administered questionnaire that incorporated Zung's Depression Scale.

Results: The age of the study subjects ranged from 16 to 84 years, with a mean age of 49.66 + 14.95 years. One hundred and forty-nine of the 250 subjects (59.6%) were found to have one form of depression or the other. Of these, one hundred and seven (42.8%) had mild depression, forty (16.0%) had moderate depression and only two (0.8%) had severe depression. Depression was found to be commoner in the age groups from 45 years and above, and there was a significant association between age and depression. There were 74 males and 176 females in the sample population, showing a male to female ratio of 1:2.4. Out of 149 depressed subjects, one hundred and four females (69.8%) had depression, while depression was present in 45 males (30.2%). Forty-seven (87.0%) of 54 subjects with no formal education had depression, while depression was found in 102 (52.0%) of the 196 educated subjects. Low educational status was significantly associated with depression in this study. Only two (0.8%) of the 250 subjects gave a positive family history of psychiatric illness, and these two subjects had mild to moderate depression. The proportion of depressed subjects who lived below the poverty level was significantly greater than that of non-depressed subjects. Substance use was also significantly more common among depressed subjects than the non-depressed group.

Conclusion: The proportion of patients with depressive symptoms in family practice clinics is high, and it is highly correlated with socio-demographic factors and low socioeconomic status. Family physicians are hereby enjoined to pay greater attention to patients with these factors, as they are at increased risk of depression. In order to reduce the high proportion of depressive symptoms and its adverse impacts on patients seen in family practice clinics and in the community as a whole, there is a need for effective implementation of poverty-alleviation programmes and universal basic education.

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Introduction

There is a substantial burden of depressive disorders seen in family practice clinics that often are not detected.¹ Depressive disorders constitute a major presentation in family practice clinics.^{1,2,3,4} The prevalence rates range between 11.7% and 34.4% in private general medical practice clinics in Nigeria.¹ Ohaeri et al. reported in 1990 that at least 49% of the patients attending the general outpatient clinic at University College Hospital in Ibadan had a significant number of depressive symptoms, occurring either as the only symptom or as part of their physical illness.² In developing countries like Nigeria, the prevalence rates of depression are higher because environmental factors that contribute to the genesis of depressive disorders are more preponderant.¹ These include high rates of poverty, a lack of social welfare and high rates of endemic infectious diseases, to mention just a few. Also, depression tends to be masked in Africans by somatic symptoms, which may explain why it is underdiagnosed or underrecognised.^{1,2}

More than 90% of persons with depression are treated in family practice clinics; only about 10% of patients are referred to psychiatrists, and about 1% are admitted to hospital.⁵ However, only about one-third of depressed patients who present to family physicians are correctly diagnosed.^{1,5}

The early detection of depression can be enhanced by screening people for the disorder when they attend a hospital for other reasons.⁵ The family practice clinic provides an excellent opportunity for this, as most patients present first at the clinic for all types of illnesses. Furthermore, despite of the high prevalence of depression, there is a paucity of local data among patients seen in family practice clinics in the West African subregion. Therefore, this prospective study was undertaken to provide data on the burden of depression, particularly in the adult population of the Ijesa community of South-Western Nigeria. The study also provides data that may assist in the formulation of the necessary preventive and treatment strategies in this community, and in the subregion as a whole. It may also identify specific groups of "at-risk" patients in whom depression may be anticipated in family practice.

Materials and methods

Study population and setting

The target population for this study consisted of all newly registered patients attending the Family Practice Clinic of the Wesley Guild Hospital (WGH) in Ilesa, Nigeria. The WGH is one of the six constituent units of the Obafemi Awolowo University Teaching Hospital Complex (OAUTHC) in Ile-Ife, Nigeria. The hospital provides primary, secondary and tertiary levels of care for people of all ages within its catchment area. This includes Ilesa, the surrounding towns and villages in Osun state and parts of the Ekiti, Ondo, Oyo and Edo states of Nigeria. Most of the patients, however, come from Ilesa and environs.

A systematic random sampling technique was used to recruit subjects for this study. Two hundred and fifty new patients were registered each week for thirteen weeks (between 13 June and 10 September 2005). This translated into a sample frame of three thousand two hundred and fifty (3 250). Using a systematic random sampling technique, a sampling interval of 13 was obtained ($3250/250 = 13$).

Subjects who were known psychotics or who were receiving treatment for psycho-affective disorders and patients who refused to give consent were excluded from the study.

Ethical considerations

Ethical clearance was obtained from the hospital's research and ethics committee. Informed written consent was obtained from each subject. Confidentiality and privacy were ensured by not indicating the names of the subjects on the questionnaire and only the investigators had access to the data. Subjects were adequately counselled before the interview took place. This was done to forestall the likelihood of traumatic memories (relapse) or discomfort.

Instruments

Data were collected using the following instruments:

- i. Pre-tested, semi-structured questionnaire incorporating Zung's Self Rating Scale.⁶ This rating scale consists of 20-item questions, each with answers in a Likert scale format that are rated from 1 to 4. Items 2, 5, 6, 11, 12, 14, 16, 17, 18, 20 are reverse scored. The questions address the presence of depressive symptoms, such as low mood, anhedonia, hopelessness, helplessness and suicidal behaviour. The raw scores are converted into a 100-point scale giving the index scores. Subjects were categorised into depression levels based on the converted points of the index scores of Zung's Self Rating Depression Scale. A score of less than 50 denotes no depression; a score of 50 to 59 represents mild depression; a score of 60 to 69 represents moderate depression; and a score of 70 and above indicates severe depression. A high composite score has a strong correlation with the diagnosis of depression. A comparison between Zung's Depression Scale and DSM-IV criteria for the diagnosis of depression revealed a sensitivity of 97%, a specificity of 63%, a positive predictive value of 77%, and a negative predictive value of 95%.⁷ Furthermore, a previous study established a morbidity cut-off score as a guide in determining the clinical severity of depressive symptoms (that is, no depression or mild, moderate or severe symptoms).⁸ Both the Yoruba and English versions of Zung's scale have been validated in Nigeria with good psychometric properties, including a high index consistency reliability of 0.64 to 0.79.⁹
- ii. A stadiometer, calibrated in metres, was used to measure the height of the subjects. The height was measured with subjects standing erect against the wall-mounted scale, wearing no shoes and looking straight ahead. Measurements were taken and recorded by a trained research assistant. The height of each subject was taken to calculate the body mass index. This is relevant because weight loss or gain is a key symptom of depression.
- iii. A bathroom scale calibrated in kilograms (Waymaster model, patent pending in England). This was regularly adjusted to reset it to zero (at the beginning of each day). The weight of each subject, to the nearest 500 gram, was measured and recorded by a trained research assistant. Accessories such as purses, cell phones, keys and pocket diaries were removed before weighing. The weight was taken to estimate the body mass index of each subject.
- iv. An Accosson® Mercury sphygmomanometer was used to measure the resting blood pressure of the subjects in a sitting position, using the left arm. The blood pressure was measured and recorded by the investigator. This was done to identify subjects with chronic medical conditions, such as hypertension.

Data collection

Questionnaires were administered after the patients' problems had been diagnosed and management had been instituted. Diagnosis was

reached by taking a history and through a clinical examination of the subjects. The information collected included the age, sex, occupation and marital status of the subjects. The past medical history was taken to establish if the subject was a known diabetic or hypertensive patient or suffered from any chronic medical condition. Subjects were also asked about their family history of psychiatric illnesses, as well as habits such as substance abuse. Substances specifically asked for included kolanut, tobacco, alcohol, cigarettes and coffee. These are the substances commonly abused in the study area. Somatised symptoms that were inquired about included feelings of crawling sensations in the body, internal heat, headache, palpitations and poor sleep.

Total income was calculated by adding the respondent's income from all declared sources. According to the World Bank poverty is defined as living on less than one dollar per day.¹⁰ In one month, this translates to less than thirty dollars. At a conversion rate of one hundred and fifty naira per dollar (N150 = \$1), poverty can be defined as living on less than N4 500 (150 x 30) per month in Nigeria.

Height, weight, pulse rate and respiratory rate were measured and recorded for each subject. Blood pressure was measured in a sitting position, using a mercury sphygmomanometer of the Accosson® brand. Elevated blood pressure was taken as equal to or greater than 140/90 mmHg.

The body mass index [BMI = weight/height²] was calculated for the subjects and classified according to the WHO classification of obesity. Overweight was regarded as a BMI >25 kg/m² and obesity as a BMI ≥30 kg/m².

Urinalysis was done using a glucostix strip and the results were recorded as negative or positive for glucose. Positive results may suggest the presence of diabetes mellitus, a chronic medical condition that may worsen depression.

Statistical analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS) software for Windows version 11.¹¹ Means, modes, medians, standard deviations, proportions and percentages were determined as applicable. The means and standard deviations (SD) were calculated for the continuous variables, while ratios and proportions were calculated for the categorical variables. Means and \pm SD were compared using Student's t-test, while proportions and ratios were compared using Pearson's Chi-squared (χ^2) tests, with Yates' correction applied where applicable. Correlation was determined with Pearson's correlation coefficient, and *p* values of equal to or less than 0.05 were taken as statistically significant.

Results

Age and Gender distribution

Table I shows the age and gender distribution of the study subjects. One hundred and sixty-seven subjects (66.8%) were 45 years and older. The male to female ratio was 1: 2.4.

Table II shows that the majority (69.6%) of the study subjects were currently married and that most of the subjects (57.2%) were self-employed. The majority belonged to the Christian faith (88.4%), and only 0.8% indicated a positive family history of psychiatric illness.

Table III shows that depression is significantly more common in subjects aged 45 years and older. It was also significantly more

Table I: Age and gender distribution of the study subjects

Age group (years)	Female N _i (%)	Male N _i (%)	Total N _i (%)
15-24	7 (4.0)	2 (2.7)	9 (3.6)
25-34	29 (16.5)	12 (16.2)	41 (16.4)
35-44	27 (15.3)	6 (8.1)	33 (13.2)
≥45	113 (64.2)	54 (73.0)	167 (66.8)
Total	176 (100)	74 (100)	250 (100)

Table II: Socio-demographic characteristics of study subjects

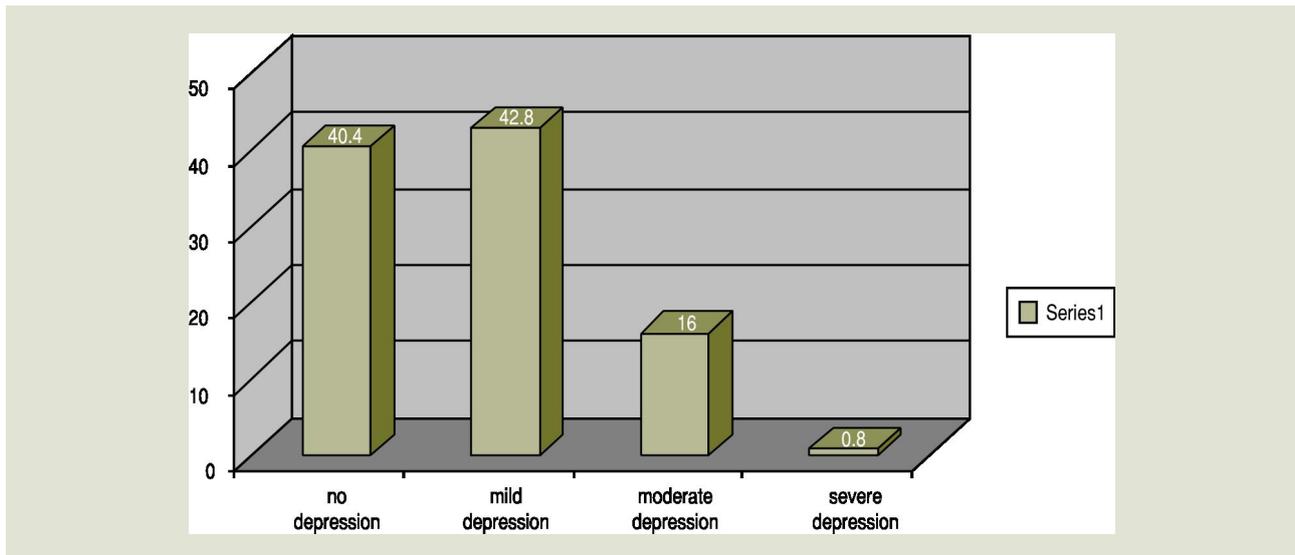
Characteristics	N _i (%)
Marital Status	
Married	174 (69.6)
Single	25 (10.0)
Single	8 (3.2)
Separated	1 (0.4)
Divorced	42 (16.8)
Widowed	
Level of education	
No formal education	54 (21.6)
Primary	53 (21.2)
Secondary	53 (21.2)
Tertiary	90 (36.0)
Occupation	
Unemployed	12 (4.8)
Housewife	1 (0.4)
Self-employed	143 (57.2)
Civil servant	70 (28.0)
Schooling	15 (6.0)
Others e.g. pensioners	9 (3.6)
Religion	
Christianity	221 (88.4)
Islam	29 (11.6)
Family history of mental illness	
Yes	2 (0.8)
No	248 (99.2)

Table III: Distribution of study subjects by depression rating and socio-demographic factors

	Non-depressed subjects n = 101	Depressed subjects n = 149	Significance
Age group			
Younger than 45 years	47 (56.6%)	36 (43.4%)	$\chi^2 = 13.587$ df = 1
45 years and above	54 (32.3%)	113 (67.7%)	p = 0.000
Sex			
Female	72 (40.9%)	104 (59.1%)	$\chi^2 = 0.064$ df = 1
Male	29 (39.2%)	45 (60.8%)	p = 0.800
Marital status			
Married	77 (44.3%)	97 (55.7%)	F = 35.420 t = -3.031
Single	13 (52.0%)	12 (48.0%)	p = 0.003
Separated	3 (37.5%)	5 (62.5%)	
Divorced	0 (0.0%)	1 (100.0%)	
Widowed	8 (19.0%)	34 (81.0%)	
Education status			
No formal education	7 (13.0%)	47 (87.0%)	F = 12.361 t = 6.810
Primary education	13 (24.5%)	40 (75.5%)	p = 0.000
Secondary education	26 (49.1%)	27 (50.9%)	
Tertiary education	55 (61.1%)	35 (38.9%)	
Employment status			
Unemployed	3 (23.1%)	10 (76.9%)	$\chi^2 = 1.011$ df = 1
Employed	98 (41.4%)	140 (58.6%)	p = 0.315*
Level of income			
Below poverty level	31 (29.2%)	75 (70.8%)	$\chi^2 = 9.510$ df = 1
Above poverty level	70 (48.8%)	74 (51.4%)	p = 0.002
Religion			
Christianity	90 (40.7%)	131 (59.3%)	$\chi^2 = 0.830$ df = 1
Islam	11 (37.9%)	18 (62.1%)	p = 0.773

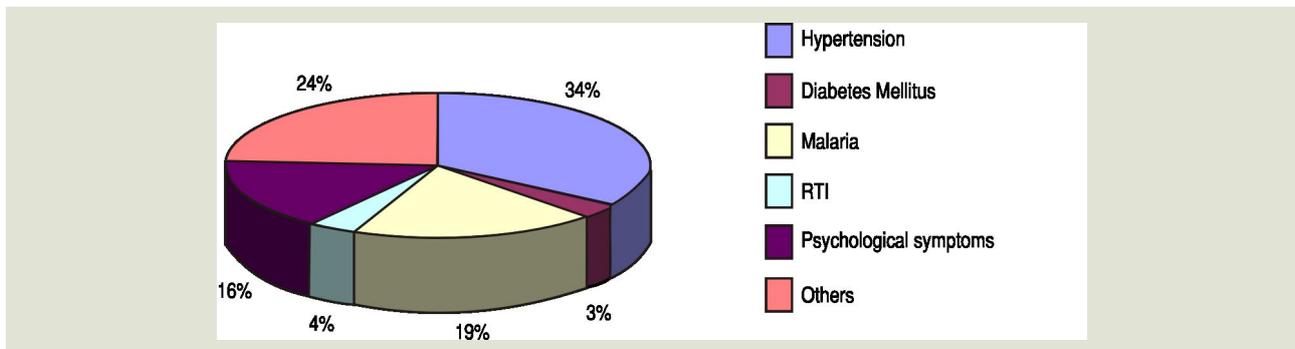
* = Yate's correction applied; χ^2 = Chi square; df = degree of freedom

Figure 1: Bar chart depicting Zung's SDS rating of depression in the study subjects



(The subjects' depression ratings were categorised on the basis of the validated thresholds of Zung's scale).

Figure 2: Pie chart depicting the diagnoses at presentation in the study subjects



Key: RTI = respiratory tract infections, Others include gastroenteritis, refractive errors, hernias and breast lumps.

common among subjects with no formal education and a low level of income. On the other hand, gender, religion and employment status did not show any statistical significance.

Table IV: Relationship between depression rating and somatic symptoms of the study subjects

	Non-depressed (Zung SDS < 50) n = 101	Depressed subjects (Zung SDS = 50-100) n = 149
No somatic symptom	43 (55.8%)	34 (44.2%)
Somatic symptoms	58 (33.5%)	115 (66.5%)

$\chi^2 = 11.023$, $df = 1$, $p = 0.001$

Table V: Relationship between depression rating and substance use in study subjects

	Non-depressed (Zung SDS < 50) n = 101	Depressed subjects (Zung SDS = 50-100) n = 149
No substance use	25 (62.5%)	15 (37.5%)
1-2 substances used (kolanut, coffee)	70 (39.5%)	107 (60.5%)
3 substances used (kolanut, cigarette, alcohol)	6 (18.8%)	26 (81.3%)
> 3 substances used (kolanut, cigarette, alcohol, sleeping tablets)	0 (0%)	1 (100.0%)

$F = 1.332$, $t = -3.985$, $p = 0.000$

Figure 1 shows Zung's SDS rating of depression in the study subjects: 42.8% of the subjects had mild depression and only 0.8% had severe depression.

Figure 2 shows that the majority (34%) of the subjects had hypertension at presentation, 3% had diabetes mellitus, while 16% had psychological symptoms.

Table IV shows the statistical significance of somatic symptoms among the depressed subjects.

Table V shows a significant association between depression and substance use.

Table VI shows a significant association between depression and chronic health problems.

Table VI: Relationship between depression and chronic health problems in the study subjects

	Non-depressed n = 101	Depressed subjects n = 149
No chronic health problem	30 (51.7%)	28 (48.3%)
One chronic health problem (HT or DM)	52 (42.3%)	71 (57.7%)
Two chronic health problems (HT and DM)	16 (26.7%)	44 (73.3%)
More than two health problems (HT, DM and OA)	3 (33.3%)	6 (66.7%)

$F = 1.546$, $t = -2.682$, $p = 0.008$

Key: HT = hypertension, DM = diabetes mellitus, OA = osteoarthritis)

Table VII: Relationship between depression and BMI in study subjects

	Non-depressed n = 101	Depressed subjects n = 149
Underweight (BMI < 18.5 kg/m ²)	2 (25%)	6 (75%)
Normal weight (BMI = 18.5-24.9 kg/m ²)	29 (31.5%)	63 (68.5%)
Overweight (BMI = 25- 29.9 kg/m ²)	39 (44.3%)	49 (55.7%)
Obesity (BMI ≥ 30 kg/m ²)	31 (50.0%)	31 (50.0%)

F = 2.457, t = 2.559, p = 0.011

Table VIII: Linear regression analysis of significant factors associated with depression in the study subjects

	Beta	T	Significance
Age group	0.185	2.960	0.003
Total income	-0.272	-2.703	0.007
Somatic symptoms	0.149	2.556	0.011
Educational status	-0.145	-2.207	0.028
Substance use	0.099	1.677	0.095
Level of social support	-0.191	-1.545	0.124

Table VII shows that a large proportion (75%) of underweight subjects was depressed in comparison to the non-depressed group. Greater proportions of overweight subjects were depressed, while equal proportions of obese subjects had depression and no depression.

Table VIII shows that age group, total income, somatic symptoms and educational status are strong predictors of depression in the study subjects. This also shows that the lower the total income and educational status, the higher the likelihood of being depressed.

Discussion

The demographic distribution of subjects in this study is characteristic of a young population, which is a common phenomenon in most developing countries in the West African subregion. This demographic structure, as well as the social, economic and political environments in the subregion, places great stress on families.¹² The average family size is shrinking due to the dispersal of family members and the adoption of family planning. This affects the rhythm of the family cycle and family-centred socialisation, as well as the care of young children and ageing adults. Other contributing factors include rapid urbanisation, an increasing prevalence of nuclear families, low levels of education and a high prevalence of extreme poverty. The results of this trend are the acquisition of new lifestyles related to urbanisation, a rapid increase in infectious diseases, and an increasing burden of mental illnesses like depression, which is an important cause of disability, particularly among women, adolescents and the youth.¹²

In this study, one hundred and forty-nine subjects (59.6%) were found to have significant depressive symptoms; there was mild depression in 42.8%, moderate depression in 16% and severe depression in 0.8%. This prevalence of 59.6% is high when compared to the 49% reported by Ohaeri and Jegede for Ibadan, South Western Nigeria in 1990,² but lower than the 40% reported by Patel et al. in Zimbabwe, a Southern African country.¹³ More recently, Dolittle and Farrell reported a slightly higher prevalence rate of 62% among urban poor in the United States, the breakdown of which showed that 38% of their subjects were not depressed, 30% had mild depression, 22% had moderate depression and 11% had severe depression.¹⁴ Differences between the observed prevalence in this study and the values cited from the more recent US and Zimbabwe studies may reflect a variation in local rates of predisposing factors for depression in the various communities, as has also been suggested by Judd et al.¹⁵

Plausible reasons for these differences, beyond location and times of study, include the effects of a severely depressed national economy on the psychological state of the populace. There has been a general decline in per capita income from \$1 000 in 1988, the period when Ohaeri et al.² conducted their studies, to \$260 in 1998, and a subsequent reclassification of Nigeria from a middle- to a low-income country.¹⁰ Nigeria's GDP for 2004 was \$64.1 billion, which could make the country one of the richest countries in Africa after South Africa. However, due to Nigeria's large population, this translates to \$390 per capita, making the country one of the poorest on the continent.¹⁰ There are also widespread and increasing levels of poverty in Nigeria. According to Mustapha, "the percentage of people living below the poverty line increased from 41% in 1992 to 80% in 1998".¹⁶ Furthermore, the WHO has cited poverty as a recognised factor in the increasing prevalence of depression worldwide.^{10,17} This may explain the high prevalence rate reported in this study. Similarly, the US study was conducted among people who were exposed to stressors such as increased rates of poverty, crime and chronic illnesses on a daily basis.¹⁸

A significant negative association existed between total income and depression in this study (p = 0.002). On the basis of the regression analysis, total income was also found to be a strong predictor of depression in these subjects. This is consistent with the findings of other studies.^{19,20,21}

In this study, depression was found to be commoner among subjects with no formal education. Forty-seven (87.0%) of 54 subjects with no formal education had depression, while depression was found in 102 (52.0%) of the 196 educated subjects (p = 0.000). This finding agrees with other studies, in which a low level of education was strongly linked with the risk of depression.^{22,23,24,25}

The findings of this study revealed that depression was more common in the age group 45 years and older, and there was a strong association between age and depression (p = 0.000). This is in agreement with the findings of other studies.^{26,27} Gomez-Restrepo et al. reported a higher prevalence of depression in persons older than 45 years.²⁶ Similarly, the risk of depression was reported to be twice in the older age group than in younger adults in a rural community in Butajira, Ethiopia.²⁷

In this study, 173 (69.2%) subjects had somatic symptoms. Somatic symptoms were present in 115 (66.5%) of depressed subjects, with a significant association existing between depression and somatic symptoms (p = 0.001). This finding implies that a large proportion of patients presenting to primary care have somatic symptoms in association with their physical illnesses. This is similar to the findings of Okulate, who reported that 88% of patients referred from general practitioners in Lagos presented with somatisation symptoms, mostly of a chronic nature.²⁸ Gureje also reported that somatisation is a common problem in primary care across cultures and is associated with significant problems and disability.²⁹

There was a positive, significant association between depression and substance use in this study. This association has been documented by various authors. Currie reported that substance use coexists with a high frequency of cases of depressive disorders in Canada, and even independently predicted a higher prevalence of suicidal thoughts and use of mental health treatment.³⁰ Kelder et al. reported that the symptoms of depression were strongly and positively related to substance use in non-Whites in particular.³¹

In this study, there was a significant association between chronic health problems and depression ($p = 0.045$). The majority of the depressed subjects had one or more chronic medical conditions, chief among which were hypertension and/or diabetes. Folsom et al. documented a similar association between depression and rates of several chronic medical problems, including diabetes, arthritis and hypertension.³² Noël and Williams also found that the severity of depression was significantly associated with all four indicators of general health, and with the presence of eleven chronic medical conditions.³³

Employment status was found not to have a significant relationship with depression in this study ($p = 0.265$), with the majority (79.6%) of the unemployed subjects being depressed in comparison to 139 (58.6%) from the employed group. Contrary to this finding, many studies have reported a significant association between employment status and depression.^{34,35,36}

Marital status had a positive significant association with depression in this study ($p = 0.003$). This is contrary to the findings of Brown et al., who established that marital status had no bearing on the experience of depression, but that perceived social support, rather than marital status, had a greater impact on psychological health.³⁷ This study reported that marriage was indeed extremely beneficial, although only for men.

There was no significant association between depression and gender in this study ($p = 0.800$). One hundred and four females (59.1%) had depression, compared to 45 males (60.8%). There were more females than males in this study, with the percentage of depressed subjects across gender being fairly similar. This may explain the lack of association between gender and depression in this study.

Only two (0.8%) subjects indicated a positive family history of psychiatric illness, and these two subjects had mild to moderate depression. This is contrary to the findings of Ohaeri and Otote that a family history was significantly more common in psychotic or severe forms of depression.³⁸ The reasons for this difference may be that the respondents did not have adequate information on their first-degree relatives.

The trend of the relationship between BMI and depression in this study is contrary to those reported in Western cultures. The results from this study showed that 75% of underweight subjects were depressed, compared to 68.5% of patients with a normal weight and 50% of the obese patients. Heo et al. reported an increased risk of depression with increasing BMI in Western cultures.³⁹ A likely reason for this difference may be the differences in socio-economic environments, which greatly influence the types of diet.

Psychological symptoms are common presentations in family practice clinics, and the majority tend to be anxiety-related disorders, as confirmed by 16% of the subjects in this study. This finding is similar to that of other studies.^{40,41} Uwakwe reported that psychological illness, especially anxiety disorders, constituted 10 to 40% of all psychiatric presentations in a rural general practice clinic.^{40,41}

Conclusion

The proportion of patients with depressive symptoms in family practice clinics is high and is highly correlated with socio-demographic factors and low socio-economic status. Coping mechanisms for depression in resource-limited economies, like those of most West African countries,

is an important area that needs to be studied further. Increased awareness, information, advocacy and access to healthcare services, especially for the early detection and preventive care of depression, is of critical importance. The family as a focus for health promotion will require the development of practical approaches that employ social variables in the analysis of health and human development strategies, and the recognition of the power of these social variables in influencing mental health. 🙏

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