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Research Article

Prevalence and Sociodemographic Correlates of Anxiety and Depression in Ogbomoso, Nigeria

Prévalence et facteurs sociodémographiques associés à l'anxiété et à la dépression à Ogbomoso (Nigeria)

Adepeju O Adegoke^{1,2}, Akintayo D OlaOlorun^{1,2}, Stephen A Adesina^{1,2}, Isaac O Amole^{1,2}, Adeola E Idowu², Thomas O Adeleke², Adewumi O Durodola^{1,2}, Olufemi T Awotunde^{1,2}.

ABSTRACT

Introduction. Anxiety and depression are common mental disorders presenting alone or as a co-morbid disease state. Both are frequently encountered among primary care and general practice outpatients. The aim of this study was to determine the prevalence of anxiety, depression and their sociodemographic correlates in a general outpatient clinic in Ogbomoso. **Materials and methods.** A descriptive hospital-based study in which 222 consenting adults were recruited from the general outpatient clinic over a period of 4 months. Data on the sociodemographic characteristics, monthly income and personal history of hypertension and diabetes were obtained. The Generalized Anxiety Disorder Scale and Patient Health Questionnaire were used to assess anxiety, depression and their severity. **Results.** The age group 40 - 60 years had the highest proportion of participants. There was a female preponderance. Majority are married, unskilled workers with monthly incomes less than ₦50,000. About two-thirds had no personal history of hypertension and or diabetes. Prevalence of anxiety and depression were 35.1% and 45.9% respectively. No significant association was found between sociodemographic variables, monthly income, personal history of hypertension and diabetes with anxiety and depression. **Conclusion.** The prevalence of anxiety and depression was 35.1% and 45.9% in this study. There may be a need to develop a screening protocol in the outpatient clinic to screen all patients attending the general outpatient clinic in order to detect and treat any patient found with either anxiety or depression promptly.

1. Bowen University Iwo, Nigeria.
2. Bowen University Teaching Hospital, Ogbomoso, Nigeria.

Correspondance :

Adegoke, Adepeju O.

Tel : 07062377140

P.O.Box 783, Ogbomoso. Oyo State

Email :

adepeju.adegoke@bowen.edu.ng

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Mots clés : anxiété, dépression, prévalence, Ogbomosho, sévérité.

RÉSUMÉ

Introduction. L'anxiété et la dépression sont des troubles mentaux courants, se présentant seuls ou en tant qu'état comorbide. Ils sont fréquemment rencontrés chez les patients des soins de santé primaires et en consultation de médecine générale. L'objectif de cette étude était de déterminer la prévalence de l'anxiété et de la dépression ainsi que leurs corrélats sociodémographiques dans une consultation de médecine générale à Ogbomoso. **Matériels et méthodes.** Étude descriptive hospitalière dans laquelle 222 adultes consentants ont été recrutés à la consultation de médecine générale sur une période de 4 mois. Les caractéristiques sociodémographiques, le revenu mensuel et les antécédents personnels d'hypertension et de diabète étaient nos variables d'étude. L'échelle des troubles anxieux généralisés et le questionnaire de santé du patient ont été utilisés pour évaluer la présence et la sévérité de l'anxiété et de la dépression. **Résultats.** Le groupe d'âge de 40 à 60 ans présentait la plus grande proportion de participants et il y avait une prédominance de femmes. La majorité des patients étaient mariés et travailleurs non qualifiés avec des revenus mensuels inférieurs à ₦50 000. Environ deux tiers des sujets n'avaient pas d'antécédents personnels d'hypertension ou de diabète. Les prévalences de l'anxiété et de la dépression étaient respectivement de 35,1 % et 45,9 %. Aucune association significative n'a été trouvée entre l'anxiété ou la dépression, et les variables sociodémographiques, le revenu mensuel et les antécédents personnels d'hypertension et de diabète. **Conclusion.** La prévalence de l'anxiété était de 35,1 % et celle de la dépression de 45,9 % dans cette étude. Il pourrait être utile de développer un protocole de dépistage en consultation externe afin de détecter et traiter rapidement les patients présentant une anxiété ou une dépression.

INTRODUCTION

Anxiety and depression are common mental disorders presenting alone or in a co-morbid disease state.[1] Both are frequently seen among outpatients in primary care and general practice. Anxiety is an usual reaction to threat, but

it can progress into a pathological condition if it is excessive, lasts for an extended period of time, becomes worse over time, and is accompanied by serious physical symptoms.[2]

HIGHLIGHTS OF THE STUDY**What is already known on this topic?**

Anxiety and depression are common mental disorders presenting alone or as a co-morbid disease state. However, the magnitude of these disorders is poorly known in Nigeria.

What question this study addressed?

Prevalence and sociodemographic correlates of anxiety and depression in Ogbomoso, Nigeria?

What this study adds to our knowledge?

Prevalence of anxiety and depression were 35.1% and 45.9% respectively. No significant correlates were found with these conditions.

How this is relevant to practice, policy or further research?

There is a need to develop a screening protocol in the outpatient clinic in order to detect and treat any patient found with either anxiety or depression promptly

In adults, generalized anxiety disorder (GAD) is a common and debilitating condition that can impede social and occupational functioning.[3]

Depression is a global health problem that causes significant dysfunction in the society and increases the utilisation of health resources, especially when it is undiagnosed and inappropriately treated.[4] Depression is defined as a mood disturbance.[2] It is crucial to stress that anxiety disorders usually precede major depression.[5] Major depression may be difficult to distinguish from generalized anxiety disorder because some symptoms of generalized anxiety disorder such as fatigue and insomnia overlap with those of major depression.[6] Depression and anxiety have a global prevalence of 4.4% and 3.6% respectively while 7 million (3.9%) and 4.9 million (2.7%) Nigerians are suffering from depression and anxiety disorders respectively.[7]

Despite the major effects of anxiety and depression on the quality of people's lives and the cost of inadequate treatment, no studies have been carried out in Ogbomoso to document the prevalence of these disorders locally in the ancient city. Majority of the patients also do not present with classical symptoms of anxiety and depression and there is no routine screening for the disease condition in the general outpatient. Hence, some of those patients were missed and undiagnosed. This study has therefore been designed to find out the proportion of patient with the disorder with the hoped that documenting the prevalence of each disorder would help in early diagnosis, prompt management and possible development of a screening protocol in the outpatient clinic.

MATERIALS AND METHODS**Study Design**

It was a cross-sectional, descriptive, hospital-based study.

Study Area/ Setting

The study was carried out at the General Outpatient Department (GOPD) of the Bowen University Teaching Hospital (BUTH), Ogbomoso from August 2021 to November 2021. Ogbomoso is a major town in Oyo state, South-west of Nigeria which is located at about 86 km north of Ibadan, Oyo state capital. It has a population of

approximately 655,000 according to the 2006 National Population Census. It has five local government areas. Majority of the people belong to the Yoruba ethnic group. The people of Ogbomoso are mostly farmers, traders, artisans and civil servants while the main religious practices are Christianity and Islam. Consenting adult patients, who met the eligibility criteria and presented at the GOPD within the study period were recruited.

Eligibility criteria

Adult patients who attended the GOPD clinic during the study period and voluntarily gave informed consent for participation.

Exclusion criteria

All respondents previously diagnosed with anxiety and depression or mixed anxiety and depression who were receiving treatment, those who were too ill to participate or unwillingness to conform to the study protocol.

Sampling

The sample size for this study was calculated using the formula $n = z^2 pq/d^2$ where z is 1.96, p is 17.5% [8] from the prevalence of respondents with mixed anxiety and depression in a Nigerian study and $q = 1 - p$ while d is set at 0.05. This gives a sample size of 221.76 approximately, 222. The study lasted 4 months.

Ethical considerations

Prior to the start of the study, ethical clearance was obtained from the Research Ethics Committee of the Bowen University Teaching Hospital, Ogbomoso. Informed consent was obtained from participants who were eligible to participate in the study. They were assured of confidentiality and freedom to withdraw from the study at any stage without any negative effect on their care. They were also informed of no financial reward for participating in the study.

Study Instruments

A structured questionnaire consisting of three sections was used in the study as follows:

Section A

This was used to collect data on sociodemographic factors (including age, gender, marital status, occupation and monthly income) and personal history of hypertension and or diabetes.

The occupation of participants was further classified as skilled workers (professionals and managerial staff), unskilled workers (artisans and traders) and dependents (retirees and house wives of unskilled workers, those not on pension and students).

Monthly income was classified as $\leq \text{₦}50,000:00$ which is equivalent to less than 100 US dollar (USD) per month, $\text{₦}51,000-100,000$ equivalent to 100-200USD, $\text{₦}101,000-150,000$ equivalent to 200-300USD, $\text{₦}151,000-200,000$ equivalent to 300-400USD and $> \text{₦}200,000$ equivalent to $> 400\text{USD}$.

Section B

This consisted of GAD Scale, a validated 7-item brief screening instrument used to find potential cases and symptoms of GAD, rather than a diagnosis, in the general population and primary care. Respondents rate the

presence of symptoms on a 4-point scale as occurring “not at all” (0), “several days” (1), “more than half the days” (2), or “nearly every day” (3) during the past 2 weeks. Items are summed to create a symptom severity score ranging from 0 to 21. Scores of 0-4 signifies no anxiety, 5-9 is mild, 10-14 is moderate, 15-21 is severe anxiety.

Section C

This was the Patient Health Questionnaire (PHQ-9) which is a 9-item shortened version of the full Patient Health Questionnaire aimed at detecting DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th edition) depressive disorders. Each item is rated according to how persistent symptoms have been in the past 2 weeks, from 0 (not at all) to 3 (nearly every day), with the total score ranging from 0 to 27. A total score between 0-4 means the patient does not need treatment for depression while scores of 5-9, 10-14, 15-19 and 20-27 suggests mild, moderate, moderately severe and severe depression respectively.

Generalized Anxiety Disorder Scale and Patient Health Questionnaire (PHQ-9) used cut off of greater than or equal to 5 to screen for both anxiety and depression in the two weeks prior to recruitment and has been used by Aika and Odili in a treatment centre in Nigeria.[1]

Data management

Data was collected, coded, and analysed using the Statistical Package for Social Sciences (SPSS) computer software Version 26. It was categorized into sociodemographic variables, personal history of hypertension and or diabetes; and severity scores for both anxiety and depression. This was subjected to descriptive statistical evaluation to yield frequencies, percentages, and proportions. The level of significance was placed at p value of <0.05.

RESULTS

Table 1 shows that age range 40-60 years had highest proportion of respondent which was 46.8%. The mean age was 43.92 ± 15.25 . There was female preponderance of 59.0% with majority being married (71.6%). Unskilled workers made up 45.9% of the study population while majority had a monthly income which was $\leq \text{N}50,000:00$ (49.5%). Majority (66.7%) of the study participants had neither Hypertension nor diabetes mellitus.

Table 2 shows that majority of the study participants (64.9%) had no anxiety while 35.1% has anxiety. The severity of anxiety was 25.7%, 7.7% and 1.7% for mild, moderate and severe anxiety respectively. However, for depression, slightly above half (54.1%) of the study participants had no depression while 45.9% had depression. The severity of depression was 28.4%, 14.0%, 3.5% for mild, moderate and moderately severe depression respectively. Among the study participants, none had severe depression.

Table 3 shows that two-third (64.9%) of participants had no anxiety while majority (25.7%) of those with anxiety had mild anxiety. Highest proportion of the participants with mild anxiety was found among age group >39 years, male, married, unskilled workers, participants with monthly income less than or equal to $\text{N}50,000$ and those

without personal history of hypertension or diabetes. There was no significant association between the sociodemographic variables, monthly income, personal history of hypertension and or diabetes and anxiety in this study.

Table 1: sociodemographic characteristics of respondent.

Variables	Frequency(n=222)	Percentage (%)
Age Range(years)		
<39	85	38.3
40-60	104	46.8
>60	33	14.9
Mean age= 43.92 ± 15.25 years		
Gender		
Male	91	41.0
Female	131	59.0
Marital Status		
Single	46	20.7
Married	159	71.6
Divorced	5	2.3
Widowed	12	5.4
Occupation		
Skilled	61	27.5
Unskilled	102	45.9
Dependent	59	26.6
Monthly Income (₦)		
≤50,000	110	49.5
51-100,000	72	32.4
101-150,000	33	14.9
151-200,000	5	2.3
<200,000	2	0.9
Personal History of Hypertension and or Diabetes		
None	148	66.7
Hypertension	55	24.8
Diabetes	14	6.3
Both	5	2.3

Table 2: generalized anxiety disorder scale (GADS) and patient health questionnaire (PHQ-9) scores (n=222)

Variable	Frequency	%
No Anxiety	144	64.9
Mild Anxiety	57	25.7
Moderate Anxiety	17	7.7
Severe Anxiety	4	1.7
Total	222	100
No or Minimal Depression		
No or Minimal Depression	120	54.1
Mild Depression	63	28.4
Moderate Depression	31	14
Moderately Severe Depression	8	3.5
Severe Depression	0	0
Total	222	100

Table 3: Association between sociodemographic variables, monthly income, personal history of hypertension and or diabetes and anxiety

Variables	No or Minimal Anxiety, n (%)	Mild Anxiety	Moderate Anxiety	Severe Anxiety	Total n (%)	Fisher's Exact Test
Age Range						
<39	54(24.3)	24(10.8)	6(2.7)	1(0.5)	85(38.3)	0.722
40-60	71(32.0)	23(10.4)	7(3.2)	3(1.4)	104(46.8)	
>60	19(8.6)	10(4.5)	4(1.8)	0(0.0)	33(14.9)	
Total	144(64.9)	57(25.7)	17(7.7)	4(1.7)	222(100)	
Gender						
Male	52(23.4)	32(14.4)	6(2.7)	1(0.4)	91(41.0)	0.052
Female	92(41.5)	25(11.3)	11(5.0)	3(1.3)	131(59.0)	
Total	144(64.9)	57(25.7)	17(7.7)	4(1.7)	222(100)	
Marital Status						
single	32(14.4)	12(5.4)	2(0.9)	0(0.0)	46(20.7)	0.813
Married	98(44.2)	43(19.4)	14(6.3)	4(1.7)	159(71.6)	
Divorced	4(1.8)	1(0.5)	0(0.0)	0(0.0)	5(2.3)	
Widow	10(4.5)	1(0.5)	1(0.5)	0(0.0)	12(5.4)	
Total	144(64.9)	57(25.7)	17(7.7)	4(1.7)	222(100)	
Employment						
Skilled	39(17.6)	16(7.2)	4(1.8)	2(0.9)	61(27.5)	0.942
Unskilled	66(29.7)	25(11.3)	9(4.1)	2(0.8)	102(45.9)	
Dependent	39(17.6)	7(2.7)	4(1.8)	0(0.0)	59(26.6)	
Total	144(64.9)	57(25.7)	17(7.7)	4(1.7)	222(100)	
Monthly Income (₦)						
≤50,000	73(32.9)	29(13.1)	6(2.7)	2(0.8)	110(49.5)	0.731
51-100,000	43(19.4)	19(8.6)	10(4.5)	0(0.0)	72(33.5)	
101-150,000	23(10.4)	7(3.2)	1(0.5)	2(0.9)	33(15.0)	
151-200,000	3(1.4)	2(0.9)	0(0.0)	0(0.0)	5(2.3)	
≥200000	2(0.9)	0(0.0)	0(0.0)	0(0.0)	2(0.9)	
Total	144(64.9)	57(25.7)	17(7.7)	4(1.7)	222(100)	
Personal History of Hypertension and or Diabetes						
None	96(43.2)	36(16.2)	12(5.4)	4(1.7)	148(66.5)	0.813
Hypertension	38(17.1)	13(5.9)	4(1.8)	0(0.0)	55(24.8)	
Diabetes	7(3.2)	6(2.7)	1(0.5)	0(0.0)	14(6.4)	
Both Hypertension and Diabetes	3(1.4)	2(0.9)	0(0.0)	0(0.0)	5(2.3)	
Total	144(64.9)	57(25.7)	17(7.7)	4(1.7)	222(100)	

Table 4 shows that just above half (54.1%) of the participants had no depression while majority of those with depression had mild depression. Highest proportion of the participants with mild depression was found among age group 40-60 years, female, married, unskilled workers, participants with monthly income less than or equal to ₦50,000 and those without personal history of hypertension or diabetes. There was no significant association between the sociodemographic variables, monthly income, personal history of hypertension and or diabetes and depression in this study.

DISCUSSION

This study investigated the prevalence of generalized anxiety and depressive disorders individually among the general outpatients attending care at the Bowen University Teaching Hospital in Ogbomoso with the hope that documenting the prevalence of each disorder would help in developing a protocol to screen all the patients at the general outpatient department and prompt management of any one found to have either anxiety and or depression. This study used Generalized Anxiety Disorder Scale and Patient Health Questionnaire (PHQ-9) score to determine the prevalence and severity of patient symptoms.

The study demonstrated that age group 40-60 years had highest proportion of participants with mean age of 43.92±15.25. This may be because majority of the study participants were in their middle age, most of them are not

on treatment for any chronic disease and the study was done in the General outpatient clinic. This mean age was similar to that of a case control study by Adeoti *et al*[9] among HIV patients where cases and control had mean ages of 42.4 and 43.4 years respectively. However, a lower mean ages of 31, 36.4, 40.6 were found by Zhou *et al* in China[10] among depressed patients, Risal *et al* in Nepal[11] during unannounced home visit and Camara *et al* in Conakry[12] among HIV patients respectively. In contrast to this, a similar study among the elderly[13] found a mean age of 70.1±9.2.

There was female preponderance of 59% in this study which was similar to findings by Zhou *et al*[10] with 54.9%. This may be because females have a more positive health seeking behaviour than males. Despite this high preponderance reported, other researchers have reported even higher proportion of 65.1%, 65.4% and 73.8% in Akwa Ibom,[8] Afghanistan[14] and Conakry.[12] The married respondents represented the highest proportion in this study (71.6%). This may be because a marital relationship provides a kind of support for spouses which makes the ill partner to present for hospital care. Unskilled worker constituted 45.9% of the study participants. This could be explained by the location of the study in which majority are artisans and traders. About half of the study participants (49.5%) had a monthly income less than ₦50,000.

Table 4: Association between sociodemographic variables, monthly income, personal history of hypertension and or diabetes and depression

Variables	No or Minimal Depression n (%)	Mild Depression	Moderate Depression	Moderately Severe Depression	Total n (%)	Fisher's Exact Test
Age Range						
<39	46(20.7)	28(12.6)	9(4.1)	2(0.9)	85(38.3)	0.185
40-60	55(24.8)	31(14.0)	14(6.3)	4(1.8)	104(46.8)	
>60	19(8.6)	4(1.8)	8(3.6)	2(0.9)	33(14.9)	
Total	120(54.1)	63(28.4)	31(14.0)	8(3.5)	222(100)	
Gender						
Male	45(20.3)	25(11.2)	18(8.1)	3(1.4)	91(41.0)	0.219
Female	75(33.8)	38(17.2)	13(5.9)	5(2.1)	131(59.0)	
Total	120(54.1)	63(28.4)	31(14.0)	8(3.5)	222(100)	
Marital Status						
Single	27(12.2)	14(6.3)	5(2.3)	0(0.0)	46(20.8)	0.371
Married	81(36.4)	45(20.3)	26(11.7)	7(3.0)	159(71.4)	
Divorced	5(2.3)	0(0.0)	0(0.0)	0(0.0)	5(2.3)	
Widowed	7(3.2)	4(1.8)	0(0.0)	1(0.5)	12(5.5)	
Total	120(54.1)	63(28.4)	31(14.0)	8(3.5)	222(100)	
Employment						
Skilled	32(14.4)	15(6.8)	13(5.8)	1(0.3)	61(27.3)	0.397
Unskilled	53(23.9)	32(14.4)	11(5.0)	6(2.7)	102(45.8)	
Dependent	35(15.8)	16(7.2)	7(3.2)	1(0.5)	59(26.7)	
Total	120(54.1)	63(28.4)	31(14.0)	8(3.5)	222(100)	
Monthly Income (₦)						
≤50,000	64(28.9)	34(15.3)	9(4.1)	3(1.2)	110(49.5)	0.315
51-100,000	35(15.8)	18(8.1)	14(6.2)	5(2.3)	72(32.4)	
101-150,000	16(7.2)	10(4.5)	7(3.2)	0(0.0)	33(14.9)	
151-200,000	3(1.3)	1(0.5)	1(0.5)	0(0.0)	5(2.3)	
≥200,000	2(0.9)	0(0.0)	0(0.0)	0(0.0)	2(0.9)	
Total	120(54.1)	63(28.4)	31(14.0)	8(3.5)	222(100)	
Personal History of Hypertension and or Diabetes						
None	76(34.2)	47(21.2)	20(9.0)	5(2.1)	148(66.5)	0.091
Hypertension	36(16.2)	12(5.4)	6(2.7)	1(0.5)	55(24.8)	
Diabetes	5(2.3)	2(0.9)	5(2.3)	2(0.9)	14(6.4)	
Both Hypertension and Diabetes	3(1.4)	2(0.9)	0(0.0)	0(0.0)	5(2.3)	
Total	120(54.1)	63(28.4)	31(14.0)	8(3.5)	222(100)	

This is expected because the type of occupation one engages in is believed to determine the amount of income one should expect. Two thirds of the study participants (66.7%) had no personal history of hypertension and or diabetes. This could be because the proportion of the elderly among the study participants was small and increasing age could be a risk factor for developing a chronic medical condition.

The prevalence of anxiety in this study was 35.1%. This agrees with Albert and Effiong[8] in a similar study done in Akwa Ibom with prevalence of 36.7%. This may be because the participants were recruited from a similar study setting although different tools were used for data collection. However, a lower prevalence of 16.1% and 19.9% respectively was found in community-based studies by Risal *et al*[11] in Nepal and Akinsulore[13] in South West Nigeria. Conversely, Hamrah *et al*[14] in Afganistan found a higher prevalence of 42.3% in a study conducted among hypertensive patients.

The prevalence of depression in this study was 45.9%. This high prevalence is surprising because majority of study participants had no comorbid medical condition which could be the reason for increased expenses and risk for depression. However, Hamrah *et al*[14] found higher prevalence of 58.1% among hypertensives in Afganistan while another researcher found a prevalence as low as 4.2% in Nepal where Nepalese adults were interviewed during unannounced home visit by Risal *et al*[11] The

prevalence found by others were 10.5%, 13%, 16.9%, 24.5% in South East Nigeria,[15] South West Nigeria,[13] Guinea[12] and Akwa Ibom.[8]

In this study, anxiety and depression were most prevalent among married, unskilled workers and those with monthly income less than ₦50,000. A known risk factor for the development of many mental diseases is diabetes mellitus and also, patients with hypertension go through a variety of intense emotions that raise their risk of developing health disorders, especially anxiety and depression[16] but this study shows that participants without personal history of hypertension and or diabetes reported higher proportion with anxiety and depression.

Also, age group less than 39 years and male participants had higher proportion with anxiety whereas, age group 40-60 and females had higher proportion with depression. This agrees with Albert and Effiong in a similar study done in Akwa Ibom State[8] where participants with less than ₦10,000 per month had more anxiety and depression. This could be because one of the risk factors for mental disorder is poverty and that can be as a result of low income. However, there was no significant association between monthly income and either anxiety or depression. In contrast to this finding, Adeoti *et al*[9] found a significant association between monthly income and anxiety and depression in a study among people living with HIV/AIDS where most respondent earn less than two dollar per day.

It is worthy of note that in this study, male gender had highest proportion of participants with anxiety while female gender had highest proportion with depression but there was no significant association between gender and anxiety and depression. The high proportion of anxiety among male gender may be as a result of high demand by the family on the male in the face of the present economic challenge. Also, high proportion of females with depression in this study agrees with Obadeji *et al*[17] who assessed depression in primary care setting and found that majority with depression were females. This was attributed to the possibility of sexual abuse and stress at work and home.

Also, anxiety had highest proportion among age group less than 39 while depression was highest among age group 40-60 but there was no significant association. This may be because the younger age group are anxious of so many things and they fear the unknown but the middle age group are likely to be depressed because of realities of life, presence of chronic medical conditions and increasing responsibilities to the family and society at large. In contrast to this finding, Adewuya *et al*[18] in a mental health survey done in Lagos State found that increasing age was associated with depression while the female gender, being single and unemployment were associated with the presence of either depression or generalised anxiety symptoms.

Limitation of the study

The study was done in the general outpatient clinic alone and the sample size was small. Therefore, the result obtained from this study may not be generalized.

CONCLUSION

The prevalence of anxiety and depression found in this study were 35.1% and 45.9% respectively. These high figures suggest that it important to screen patients attending general outpatient clinic in order to detect, treat and refer any patient found to need specialist care promptly. The absence of significant association between anxiety, depression and sociodemographic variables, monthly income and personal history of hypertension and diabetes suggest that other factors not covered in this study might be responsible for high prevalence found. Hence further studies are needed.

Conflicts of interest

The authors declare no conflict of interest.

Authors' contribution

This manuscript has been read and approved by all the authors, and the requirements for authorship as stated earlier in this document have been met, and each author believes that the manuscript represents honest work.

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