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Prevalence, Presentation and Co-Morbidity Pattern Associated with Depression among Geriatric Patients Attending the GOPD of UPTH

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Abstract

The study was done to determine the prevalence of depressive illness among the elderly patients attending the General Outpatient Department of the University of Port Harcourt Teaching Hospital (UPTH). This was done against the background of increased morbidity of depressive illness among the elderly culminating in disability and suicidal risk. A descriptive cross-sectional study of one hundred and fifty randomly selected elderly patients attending the GOPD was carried out. A structured questionnaire containing the Geriatric Depression Scale was administered to the patients that had satisfied the inclusion and exclusion criteria. Data was entered into the computer using the Epi-info version 3.2.2 software, and analysed. 28% of the patients were found to be mildly, moderately and severely depressed. The commonest modes of presentation were internal heat, multiple somatic complaints and delusions and/or hallucinations. Most of the depressed respondents had at least one co-morbid condition and these were more frequently found to be stroke and diabetes mellitus.

Keywords: Geriatric, depression, prevalence.

Introduction

The increase in life expectancy in the 20th Century has resulted in a major increase in the prevalence of age-related diseases and conditions. This is especially true in the industrialized nations, and some other developing countries[1]. Although the average life expectancy in Nigeria is declining due to the infectious disease burden and especially the HIV/AIDS pandemic, the life expectancy of the elderly is on the increase[2-4]. This implies that an increasing number of people are prone to the present wave of a rapidly emerging epidemic of chronic, non-communicable, lifestyle based diseases and disabilities. In this vain, mental disorders have become increasingly important health problems in both the developed and the developing world[5]. Depressive illness is the most prevalent mental disorder in the elderly [1]. It has been found to be the third most common reason for consultation in primary care[1,6]. It is second only to hypertension as the most chronic condition encountered in general medical practice[7]. Depressive illness in the elderly is ultimately disabling, mostly under-diagnosed and frequently fatal[8]. Hence, most times it remains untreated by primary care providers[8,9]. One of the reasons it is under-diagnosed in our environment is that more often than not, both the patients and the physicians erroneously believe that depression is a natural result of ageing[8,10]. Globally, the prevalence of depression is 10-15%[1]. In an Ibadan-based study done by Sokoya a prevalence of 7.4% was found among elderly primary care attendees[11]. Even though depression is more common in younger age-groups, 20% of all suicides occur in older depressed patients.[10] About 50-70%of all medical visits by the elderly can be largely attributed to emotional distress or dysfunction[8].

The exact prevalence of depression in our environment cannot be ascertained mainly because of poor index of suspicion, inadequate hospital records, misdiagnosis and poor utilization of health care facilities by these patients. Nevertheless, going by results of hospital-based studies, it can be safely concluded that this condition is quite prevalent among the elderly in our environment[10,12,13,14].

Depressive illness in the elderly may be complicated by co-morbid general medical conditions which frequently plague them and they present with an array of somatic symptoms that may be attributable to the co-existing conditions individually or collectively[15]. In addition, these coexisting medical conditions have been shown to worsen the morbidity accounted for by depression and vice versa[15]. Gazmararian et al found an association between increasing numbers of (at least two) chronic conditions and increased depressive symptomatology[16].

Furthermore, cultural factors immensely contribute to the symptomatology of depressive illness.[17]

It is chiefly due to this masking of depressive symptoms by somatic complaints which in some cases could be attributed to somatization disorder, or cognitive impairment that the diagnosis of depressive illness in the elderly patients attending the General Outpatient Department very often eludes the Family Physician. Yet the majority of elderly depressed patients are seen by Family Physicians[18].

Ultimately, this leads to increased consultation rates which may be an indicator to the presence of under-diagnosed or misdiagnosed clinical conditions including depression[1].

Identifying Depression in Older Patients: A thorough medical history and physical examination are essential in ruling out physiologic and pharmacologic causes of depressive symptoms. This is especially important in blacks 64 and in the elderly whose depression is frequently expressed in multiple somatic complaints. Nakasujja et al in a Ugandan study, concluded that 48% of elderly patients admitted to non-psychiatric wards actually suffered from psychiatric illness, the most prevalent of which was depression. They concluded that somatisation was largely responsible for the missed diagnoses[19]. Pain is one of the most common chief complaints and is typically exaggerated and involves multiple systems (gastro-intestinal, neurological, musculoskeletal).

It can not be overemphasised that elderly patients frequently do not present with the classic criteria for unipolar depression as described in the DSM-IV-TR. Depression is one of the most common causes of weight loss in the elderly. Other common symptoms of depression in the elderly include memory loss, agitation, insomnia, fatigue, and decreased appetite and decreased libido[12].

A good family and social history is essential for identifying possible risk factors. It should be borne in mind that diurnal variation of symptoms which become worse in the morning is more common with clinical depression and a prior history of a similar episode is strong evidence for clinical depression. Performing a complete physical and a thorough mental status examination to assess cognitive function and mood is essential for diagnosis although in a primary care setting the use of the GDS as a screening tool is advocated for its high sensitivity and ease of administration[6,20]. Also, the Centre for Epidemiologic Studies Depression Scale (CES-D) can be used for community dwelling and medically ill older adults[21]. The laboratory workup should be done where necessary to exclude co-morbidities especially those that mimic or are associated with depressive symptoms, and to further lend support to making a diagnosis of depression in difficult circumstances (as a diagnosis of exclusion). This will ensure early diagnosis and treatment of depression and/or co-morbid condition/s if present. Investigations include thyroid function tests where necessary, a full blood count with differential panel. Electrolytes and fasting blood glucose should be done and if possible, B12 and folate levels. A chest radiograph and an ECG can also be done[21].

Common Diagnostic Pitfalls: There are certain conditions or factors that may hinder the diagnosis of depressive illness in a primary care setting. These include:

Somatisation: This is defined as the tendency to experience and communicate somatic distress and somatic symptoms unaccounted for by relevant pathological findings, attributing them to physical illness and seeking medical help for them. Alternatively, it could be defined as the experiencing of physical symptoms in response to emotional distress[22]. It could herald an underlying depressive illness. DSM- IV allows somatic symptoms to be counted towards the diagnosis of depression if there is any possibility of psychological causation[12]. Cultural differences in the presentation of somatic symptoms could account for the variability in the prevalence of somatisation disorder that could be a mode of presentation of depressive illness[23]. Furthermore, somatic symptoms have been proved to serve as cultural idioms of distress in man[24].

Hypochondriasis: This is a recognised symptom of depression in the elderly population and is often associated with anxiety disorder. In this case, normal bodily sensations are attributed to illness, with the patient actively seeking medical investigations and reassurance. It is a diagnosis of exclusion[12].

Suicidal Ideation: This is common in the elderly especially those who are ill or disabled, unmarried, or in great pain and can occur in the absence of depression[12]. There is evidence to show that older patients who are contemplating suicide are three times more likely to consult a Family Physician in the month preceding death than others without such thoughts[10,25,26].

The GDS may be used to screen older patients at risk for suicide through questions that examine feelings of hopelessness, worthlessness, emptiness, absence of happiness and absence of the perception that it is wonderful to be alive[27].

Cultural Context: When the patient is from a different ethnic group from that of the clinician, clinical features must be seen in the context of the patient's cultural inclinations as this can affect the way the patient expresses distress. It could be useful to obtain further information from the patient's relations and care givers to avoid misdiagnosis or missed diagnosis[12]. Tomilson et al concluded from their study that the manifestations of depression in sub-Saharan Africa were largely somatic or spiritual in nature. Thus, they may obscure the detection of depression[28]. Lavender, Khandoker and Jones who conducted a comparative study on perception of depression by Yoruba, Bangladeshi and White British people, concluded that magic had a role in both causation and cure in the Yoruba, religion was important for most people in all 3 groups and family factors were dominant in the Bangladeshi[29].

It is important to note that the DSM IV- TR provides a lengthy list of culture-based disorders one of which is "ode-ori" among the Yoruba in which the chief complaints are crawling sensation in the head and body, noise in the ears, anxiety and depressive symptoms, palpitations and various other somatic complaints.[30]

However, Ohaeri stressed that even though depression is heterogeneous, there are core clinical features which are stable across cultures and time[31].

Dementia: The presentation often mimics that of depressive illness but is resistant to treatment. It has already been highlighted that dementia may present as depression or may co-exist with it. As earlier mentioned, depression may produce

cognitive impairment known as "depressive pseudo dementia" or "dementia syndrome of depression" which is usually reversed by treatment of the depressive disorder. However, some of the latter develop dementia in the following few years. Depression may be a risk factor for Alzheimer's disease[32].

The Cornell Scale for Depression in Dementia is specially designed for assessing depression in the elderly with dementia. This is a 19-item questionnaire with ratings of "absent", "mild/intermittent", and "severe" corresponding to scores of "0","1" and "2".a total score of 8 or more suggests significant depressive symptoms[33].

The General Practitioner Assessment of Cognition (GPCOG), mini-cog and MIS screening tools have been adjudged to be one of the dementia screening instruments for Family Physicians to use. In their absence, a Mini- Mental State Examination (MMSE) can be used. A score of 11 or less would exclude those patients with severe cognitive dysfunction[13,34].

However, the sensitivity of the GDS diminishes with MMSE scores of less than 24[10]. Uwakwe in 2004, conducted a study on "identifying dementia and depression by indirect screening tests" and came up with interesting results that led to a justifiable conclusion that both the Family Questionnaire (FQ) and the Functional Activities Questionnaire (FAQ) may be used to indirectly screen elderly subjects who have cognitive deficits and dementia through their family co-residents. This will likely yield an increase in the detection of dementia/depression in elderly subjects who have limited access to direct contact with health care services[35].

Non- Specific Symptoms: These are symptoms that may be hard to interpret as they could be accounted for by both depression and co morbid conditions, or both. They include: Anorexia, weight loss and reduced energy[6]. The use of the physician's clinical judgement based on consideration of other clinical findings is therefore imperative to be able to arrive at a diagnosis of depression with or without the presence of co-morbidities.

Depression and Co-morbidities: A major factor in the context of evaluating depression in the elderly is the role of medical co-morbidities[10]. As many as 46% of elderly depressed patients have co-morbid physical diagnoses. Conversely, elderly physically ill patients frequently show symptoms of depression. This may be transient but in some cases can persist interfering with social functioning and impairing recovery from the physical illness itself[12,26].

The general medical illnesses associated with depression are as follows: Diabetes Mellitus: Holley et al and Miller et al are among the researchers that found an association between vascular brain lesions (chiefly accounted for by systemic hypertension and diabetes mellitus)and the prevalence of depression[36,37]. The aetiology of depression in diabetes is still poorly understood, but results from several, predominantly cross-sectional studies suggest the onset of depression in diabetes is associated with not only socio-demographic factors such as female sex, living alone and low income, but also with diabetes related- factors such as poor glycaemic control and the presence of diabetic complications. Research suggests not only a higher prevalence but also a higher recurrence rate of depression among diabetics[38].

Cancer especially pancreatic cancer: The concepts of psycho-oncology and psycho-neuro-immunology have been used to explain the role of depression in the aetiopathogenesis of cancer and vice versa[39]. Depression has been found to trigger off changes in immune response that predispose the sufferer to cancer. Conversely, cancer can be regarded as one of the psychosocial risk factors for depression.

Stroke: Over the years, medical literature has supported a relationship between stroke and depression. It also plays a role in the aetiology of vascular depression characterized by excessive psychomotor retardation, poor insight, increased disability and absence of a family history of depression[37].

Coronary artery disease: It has been shown that depression is more prevalent among those with coronary artery disease[6,37].

Alzheimer's disease: It has been shown that there is a higher prevalence of depression among patients with dementia[40]. It has also been shown that the likelihood of some patients to develop cognitive impairment during a depressive episode is not related to an increase in dementia even though depression is a risk factor for and may be an early manifestation of dementia[40].

Parkinson's disease: Myocardial Infarction; especially on the third day of infarction[6].

Alcohol abuse: Remission of alcohol abuse increases the likelihood of depression remission[5,41]. Alcohol abuse may give rise to depressive symptoms as earlier pointed out.

Huntington's disease[6]: Heart failure: Depression has been shown to be an independent risk factor for heart failure among elderly women but not among elderly men[42].

Chronic Obstructive Pulmonary Disease (COPD)[6]: Severe anaemia, thyroid disease and malignancies could mimic depressive illness. Symptoms such as lack of energy, poor concentration and weight loss may be due to physical illness or ageing, not depression and this poses a challenge even to the most experienced clinicians. In order to circumvent these difficulties, rating scales can be used.

Rating Scales: The "gold standard" for diagnosis of depression continues to be the Mental Status Examination. Its major disadvantage is that it is laborious and time- consuming, hence the search for more convenient screening tools so as to reduce

the total number of patients who will eventually undergo screening using the Mental Status Examination[18,12].

Screening scales are of most use where a condition would otherwise be at risk of being missed. It is worthy of note that because elderly patients may deny sadness or loss of pleasure, clinical judgement may in some cases prove more helpful than screening measures[13].

Geriatric Depression Scale (GDS)[43,44]: The Geriatric Depression Scale (GDS) is a screening scales and not a diagnostic instrument, but will identify those elderly requiring more detailed interview and appropriate treatment. It was first created by Yesavage et al., has been tested and used extensively with the older population. The GDS has been recommended by the Royal College of Physicians, British Geriatric Society and the Royal College of General Practitioners as a suitable scale to screen for depression. It has been extensively validated in both 15 and 30-item formats.

The use of the longer variety of screening measures is most appropriate in targeted adult population at high risk for depression (in this case, the elderly). 23 It is a self –rating scale that can be given by interview. Participants are required to answer "yes" or "no" in reference to how they felt on the day of administration. Scores of 0-9 are considered normal, 15±6 are mildly depressed, and 23±5 are very depressed. Those items with an "*" sign should have "yes" as an appropriate (non-depressed) answer, while all the other answers should have "no". "Depressed" answers attract a score of 1, while the "non depressed or appropriate" answers attract a score of 0.23,89,90

Material and Methods

A cross-sectional study was conducted at the General Outpatient Department, (GOPD) of the University of Port Harcourt Teaching Hospital (UPTH) located in Choba, near Port Harcourt, the capital of Rivers State, Nigeria between July and September 2007. This is situated in the South-South geo-political zone of Nigeria. Port Harcourt has a population of 3.9 million people.

The General Outpatient Department (GOPD) of the hospital provides primary and secondary health services. It is involved in the management of health problems, pre-employment and pre-admission comprehensive medical tests and acts as a referring point for patients that need other specialist care. All new patients are assessed, treated or referred to appropriate specialties where necessary or are managed in the clinic. The different specialties offer the tertiary health care services.

The geriatric patients are seen by both the Consultant Family Physicians and the Family Medicine Residents. An average of about five hundred geriatric patients are seen every month (20 working days) and approximately six thousand annually. This represents roughly 25% of the total number of patients seen.

A total of 150 men and women 65 years and older were recruited into the study by the systematic random sampling technique using a sampling ratio of 1:5; every 5th elderly patient was recruited into the study, clerked, physically examined and eventually administered a questionnaire that included the Geriatric Depression Scale, until the required number was attained. Where necessary, relevant laboratory investigations were requested for to ascertain the significance of somatic complaints and detect the presence of co-morbid medical conditions. The Geriatric Depression Scale is a self-rating scale tht can be given by interview. Participants are required to answer "yes" or "no" in reference of how they felt on the day of administration. Scores of 0-9 are considered normal, 15±6 are mildly depressed, and 23±5 are very depressed. "Depressed" answers attract a score of 1 while the "non depressed or appropriate" answers attract a score of 30.

Ethical approval was obtained from the hospital ethical committee. Informed consent from the subjects was obtained as well and the latter were assured that they were free to opt out of the study at any stage and that if the did, they would not be victimised in any way.

Data analysis was done using the EPI-INFO version 3.2.2 software package.

Results and Discussion

A total of 150 questionnaires were retrieved and analysed giving a response rate of 100%. Scores ranged from 2-20. The mean score was 8.6±4.2; the median was 8.0 and the mode was 5.0. 33 (22%) patients scored 10 and above (i.e. mildly to moderately depressed) on the Geriatric Depression Scale while 9 (6%) scored 18 and above (i.e. severely depressed). This gives a total depression prevalence of 28%.

Relationship between the Main Presenting Complaints and Prevalence of Depression: Table-1 shows that the subjects with multiple somatic complaints, internal heat, delusions/hallucinations and other complaints (including " heaviness of the head", "vibrations in the body", "a feeling of something stuck in the throat") were significantly more depressed.(p=0.000, 0.040, 0.028, 0.051 respectively).

Relationship between Co-morbid Conditions of the Respondents Prevalence of Depression: Table-2 illustrates the relationship between the most commonly encountered co-morbid conditions and the prevalence of depression. Only those with diabetes mellitus (p=0.000) and stroke (p=0.000) had a statistically significant association with depression.

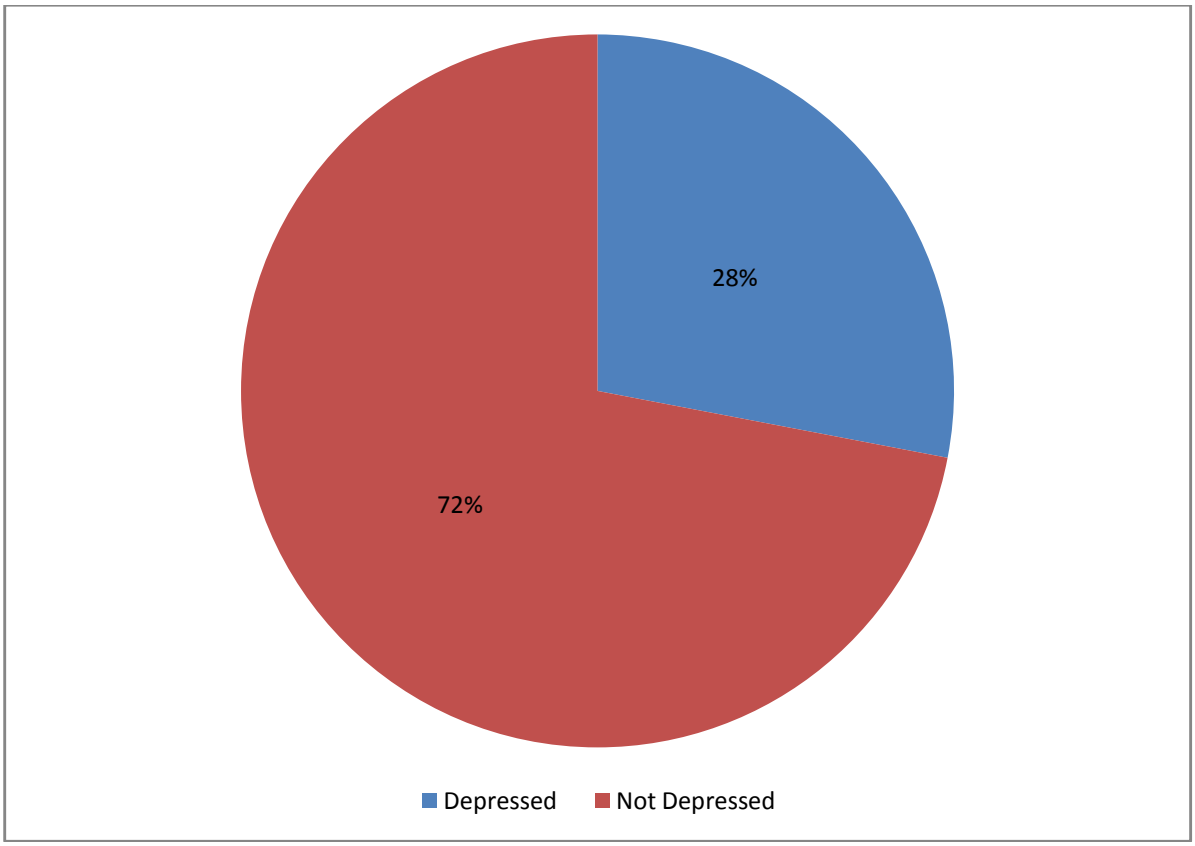

Figure-1
Prevalence of Depression among the Respondents

Table-1
Relationship between the Main Presenting Complaints and Prevalence of Depression

Main Presenting Complaint	Prevalence of Depression			Total	X^2	P -Value
	Not Depressed%	Mildly to Moderately Depressed%	Severely Depressed %			
Multiple Somatic	15(53.6)	7(25.0)	6(21.4)	**28**	**15.423**	***0.000**
Weight loss	7(87.5)	1(12.5)	0(0.0)	**8**	**1.136**	**0.567**
Anorexia	3(100.0)	0(0.0)	0(0.0)	**3**	**1.190**	**0.551**
Fatigue	12(85.7)	2(14.2)	0(0.0)	**14**	**1.748**	**0.417**
Insomnia	9(81.8)	2(18.2)	0(0.0)	**11**	**0.950**	**0.622**
Internal Heat	8(53.3)	4(26.7)	3(20.0)	**15**	**6.416**	***0.040**
Crawling sensation	5(55.6)	4(44.4)	0(0.0)	**9**	**3.126**	**0.209**
Delusions/Hallucinations	0(0.0)	2(100.0)	0(0.0)	**2**	**7.187**	***0.028**
Chest pain or Abdominal pain	12(66.7)	6(33.3)	0(0.0)	**18**	**2.502**	**0.286**
Burning/Pepperish sensation	0(0.0)	1(100.0)	0(0.0)	**1**	**3.569**	**0.168**
Joint Pain	11(91.7)	1(8.3)	0(0.0)	**12**	**2.591**	**0.274**
Other	26(89.7)	3(10.3)	0(0.0)	**29**	**5.933**	***0.051**
Total	**108**	**33**	**9**	**150**		

Table-2
Relationship between Co-morbid Conditions of the Respondents and Prevalence of Depression

Co morbid conditions	Prevalence of Depression			X^2	P-Value
	Not Depressed N=108(%)	Mildly to Moderately Depressed N=33(%)	Severely Depressed N=9(%)		
Hypertension	55 (50.9)	13 (39.4)	3 (33.3)	2.101	0.350
Arthritis	30 (27.8)	7 (21.2)	3 (33.3)	0.775	0.679
Diabetes Mellitus	8 (7.4)	26 (78.8)	2 (22.2)	70.624	*0.000
PUD	12 (11.1)	6 (18.2)	3 (33.3)	4.022	0.134
Infection	11 (10.2)	6 (18.2)	0.0	2.832	0.243
COAD	7 (6.5)	1 (3.1)	0.0	0.534	0.766
BPH	6 (5.6)	0.0	0.0	2.431	0.297
Stroke	0.0	0.0	1 (11.1)	15.775	*0.000
Others	12.0	21.4	0.0	2.110	0.348

NB: Some of the respondents had more than one co-morbid condition.

Papadopoulos et al in Greece documented an overall prevalence of 39% (27% for mild depression and 12% for moderate to severe depression). However, the cut off points for mild and moderate/severe depression on the GDS were 7 and 11 respectively while in this study, the cut off points were 9 and 18 for mild/moderate and severe depression respectively[45]. This could account for the relatively higher prevalence. Similarly, Al-Shamari et al[20] in Saudi Arabia documented a much higher prevalence (39%). Unfavourable socio-demographic characteristics like poor educational and social status, inadequate family and social support, widowhood, poor living conditions, and loneliness were implicated.

Wilson et al and Cervilla et al in England, documented a slightly lower overall prevalence (21% and 17% respectively)[14,46] More favourable socio-demographic characteristics could be responsible for the difference in the former (i.e. greater income, better housing, marital stability and good family and social support) while the fact that the latter did a community based study could account for the lower prevalence obtained by them.

This contrasts with Sokoya and Baiyewu's Ibadan-based study that recorded an overall prevalence of 7.4%. The fact that this was a two-stage study could be responsible for this difference[11]. The first stage entailed screening with the GDS, then those respondents with scores above the cut-off, were further evaluated using the ICD-10 criteria to arrive at the final diagnosis.

In this study, the overall prevalence of depression in the elderly was found to be 28% out of which 22% were mildly to moderately depressed while 6% were severely depressed.

Judging by the findings of other investigators, the geriatric depression prevalence in this study was relatively high and hence there is every need to identify and correct the risk factors and deleterious consequences of depressive illness among the elderly patients in our environment.

It is pertinent to note that the modes of presentation vary across cultures and they therefore need to be ascertained in our environment for ease of identification in a primary care setting.

Those whose main complaints were internal heat, multiple somatic complaints and those with delusions and/or hallucinations were significantly more depressed (p=0.040, 0.000, 0.028, respectively). These can thus be considered as the modes of presentation of depressive illness in the study environment. These modes of presentation simulate those of the Yoruba ("ode-ori")[30] although crawling sensation was not found to be a major mode of presentation in this study. Studies done by Okulate et al and Denninger et al[47,48] suggest that the most common complaints are related to alimentary and musculoskeletal systems. In addition, a significant association between an increasing number of somatic complaints and the prevalence of depression has been documented[30].

At least one co-morbid condition occurred in 93.3% of the patients. This is much higher than the 46% co-morbidity prevalence as documented by Evans et al.[12] This could be accounted for by the fact that this study site was a tertiary institution and therefore a good number of the patients seen had been referred from primary or secondary health care facilities. In addition, patients in the study environment, tend to present mostly when their medical conditions persist, become severe or when churches, chemists and herbalists have failed to heal them. It should be borne in mind that most of these patients are indigent and poorly educated and these factors contribute considerably to poor health care facility utilization and drug compliance when they eventually present; these factors

subsequently contribute to the high co-morbidity burden seen in the study site.

Among the most commonly encountered co-morbid conditions of the elderly in this study, those with stroke (p=0.000) and diabetes mellitus (p=0.000) had a significantly higher prevalence of depression than the rest. This finding concurs with those of Holley et al and Pouwer with regard to the association of diabetes mellitus and other cardiovascular risk factors in the prevalence of depression in the elderly[37,38]. However, increase in the number of co-morbid conditions showed no statistically significant increase in the prevalence of depression; a possible explanation for this is that other independent risk factors such as the level of social and family support could have had a greater influence than co morbid conditions on the prevalence of depression.

Conclusion

The result of this study suggests that the prevalence of depression was much higher than has been documented by most other investigators, the presentation of the disorder atypical and often associated with at least one comorbid condition among this cohort of patients.

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