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Risk Factors for Depression in Elderly Persons Attending the General Outpatient Clinics of the University of Uyo Teaching Hospital, Uyo

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Abstract

Background: *The growing populations of elderly people in Sub-Saharan Africa are exposed to social changes with potential adverse effects on mental health, one of such effects is depression. Depression is a disabling illness that affects even the most basic everyday task. There is therefore a growing and urgent need for mental care in the elderly.*

Aim and Objective: *The aim of this study was to determine the risk factors for depression in elderly persons attending the General Out- patient Clinics of the University of Uyo Teaching Hospital.*

Materials and Methods: *The study was a cross-sectional descriptive study. Three hundred and ten (310) elderly persons attending the General Out- patient Clinics of the University of Uyo Teaching Hospital for medical conditions between July and September, 2014, who met the inclusion criteria, were consecutively recruited. All respondents were screened for depression using the Geriatric Depression Scale. Details of sociodemographic characteristics of the respondents as well as risk factors for depression were obtained using a semi-structured questionnaire. Data analysis was done using the Statistical Package for Social Sciences (SPSS) version 17.0 and the level of statistical significance was set at $p< 0.05$.*

Results: *A total number of three hundred and ten subjects were recruited for the study. One hundred and seventy-seven subjects (57.1%) were females and one hundred and thirty-three (42.9%) were males. The female to male ratio of subjects recruited was 1.3:1. The age range of respondents were 60 and 90 years and the mean age (±SD) of the study subjects was 67.4 (± 6.6) years. From the study, significant risk factors for depression after logistic regression were loneliness and neglect, having no income, stressful life events, and financial failures. However, marital status and educational level had an association with depression when univariate analysis was done.*

Conclusion: *It was observed that poor income, loneliness and neglect, and stressful life events were risk factors for depression among these elderly respondents.*

Keywords: *risk factors, depression, elderly.*

Introduction

Historical documents written by healers, philosophers, and writers throughout the ages point to the long-standing existence of depression as a health problem[1]. Reports have also shown that advancing age is associated with increased exposure to risk factors and vulnerability to diseases including psychological disorders, and evidence has shown that depression is one of the commonest psychological disorder often reported in the elderly worldwide.[2,3] It is projected that that by 2020, depression will become the second leading cause of disease worldwide, as measured by Disability-Adjusted Life Years (DALY).[4] There is therefore a growing and urgent need for mental health care in the elderly especially in developing countries like ours.

Depression in old age comprises a heterogeneous group of clinical disorders that affect adults over 60 years of age. It is an affective illness characterized by symptoms such as disturbance in mood, cognition and inability to perform physical and mental functions. It has extensive implications for the patients and their families. Besides personal and family suffering, depression in later life leads to an array of medical, psychosocial, and economic consequences including increased morbidity and mortality, increased disability,[5] decreased quality of life,[6] and an increase in both health care costs and health service utilization.[7] Furthermore, depression characteristically complicates the course and outcome of other illnesses among older adults.[8]

The risk factors for depression in the elderly are not so different from those with the young population; however, the impact of these risk factors varies with age and gender. Factors such as female gender, problems related to physical health, recent loss of loved ones, fear of death, a past history of depression and family history of major depressive disorder, lack of social support, loneliness and social isolation are significant risk factors for the development of depression in the elderly.[9] Older persons in developing countries like ours experience many hardships, with few able to access basic services. Traditional support systems are fast fading and the elderlies are either left alone to fend for themselves or left with the responsibility of child care with no formal support. These and many more factors have contributed to the very low ranking of Nigeria among ninety-six (96) countries in the 2015 Global Age watch Index, an index that shows how well the elderly population are faring in various countries.[10]

Given the fact that the world's population is ageing rapidly, Nigeria inclusive, more attention should be given to the mental health and the overall wellbeing of elderly persons. This study seeks to find out the risk factors for depression in elderly persons attending our general out-patient clinics. Results of this study will be useful in policy making, planning and execution of awareness and health education programmes on the health, and social needs of the elderly persons.

Materials and Method

Study Area

This study was carried out at the General Out-patient Clinics of the University of Uyo Teaching Hospital (UUTH), Uyo in AkwaIbom State, Nigeria. The hospital is a tertiary health institution located in Uyo, Akwa -Ibom State, South-South, Nigeria. It is a 400- bed hospital that offers specialty services to indigenes of Akwa-Ibom State and neighbouring states of Cross River, Abia and Rivers.

Study design

The study was a cross-sectional descriptive study designed to determine the risk factors for depression in elderly persons who presented for medical treatment at the General Out-patient Clinics of the University of Uyo Teaching Hospital.

Sample size and selection

The sample size for the study was determined using the formula[11] below:

$n = Z^2Pq/d^2$ where,

n = the desired sample size (when the study population is greater than 10,000)

Z = the normal standard deviate, usually set at 1.96 which corresponds to 95% confidence level.

P = the proportion in the target population estimated to have a particular characteristic (In this study 28%[12] will be used)

Q = 1.0 – P (where q is the probability of an event not occurring)

d = degree of accuracy desired (Set at 0.05 in this study)

Therefore, the desired sample size

$$n = \frac{1.96^2 \times 0.28 \times (1 - 0.28)}{0.05^2}$$

$$= \frac{3.8416 \times 0.28 \times 0.72}{0.0025}$$

$$= 309.78$$

$$= 310$$

The minimum sample size was three hundred and ten (310). Patients who were aged 60 years and above, with no past or present history of psychiatric illness and who gave consent were included in the study. Patients who were on medications for psychiatric illnesses and who were critically ill were not included in the study.

Procedure

All consenting respondents aged 60 and above, who met the inclusion criteria were consecutively recruited daily from Monday to Friday after the morning sorting routine until the desired sample size was obtained. Information was given to each subject in English or the Local language (Ibibio) on the research objectives and informed, written consent obtained. Participation was voluntary and confidentiality ensured. Thereafter, each individual was administered a questionnaire by the researcher to provide the information therein. Respondents who could not fill the questionnaire on their own were assisted by the researcher. The questionnaire, which was semi-structured, sought information on sociodemographic characteristics such as age, sex, marital status etc and the risk factors for depression. The Oyedeji's social classification[13] was used to ascertain the social class of the respondents and the Geriatric Depression Scale[14] was used to screen the respondents for depression.

Data Analysis

Data entry and analysis were done using the Statistical Package for Social Sciences (SPSS) version 17.0. Descriptive statistics such as mean and standard deviation were used to analyse continuous variables while frequency and percentages of categorical variables were also determined. Inferential statistics such as Chi-Square (X^2) test and odd ratios were employed to compare differences in proportions or groups. The level of statistical significance was set at $p< 0.05$.

Ethical Clearance

Approval for the study was sought and obtained from the University of Uyo Teaching Hospital Research and Ethical Committee before commencement of the study.

Results

Sociodemographic Characteristics of the Study Subjects

The demographic characteristics of the study subjects are as shown in table 1. Majority of the subjects were women (57.1%), the female to male ratio of subjects recruited was 1.3:1. The minimum and maximum ages of respondent were 60 and 90 years respectively. The mean age (±SD) of the study subjects was 67.4 (± 6.6) years. 74.8% of the subjects had at least attained primary level of education and most were married (51.9%). The median monthly income was ₦ 25,500.00 with interquartile range of ₦ 10,000.00 – ₦ 50,000.00

Table 1 Sociodemographic characteristics of 310 elderly persons attending the GOP clinics of the UUTH, Uyo.

Characteristics	Frequency	Percentage
Sex		
Male	133	42.9
Female	177	57.1
Total	**310**	**100**
Educational Level		
No Formal Education	78	25.2
Primary Education	130	41.9
Secondary Education	22	7.1
Post-Secondary Education	80	25.8
Total	**310**	**100**
Income Source		
None	136	43.9
Pension	102	32.9
Trading	36	11.6
gifts	14	4.5
Salary	18	5.8
Farming	2	0.6
Driving	1	0.3
Carpentry	1	0.3
Total	**310**	**100**
Average Income grade		
No income	136	43.9
Less than N50,000	128	41.3
N50,000 < N100,000	29	9.3
>N100,000	17	5.5
Total	**310**	**100**
Religion		
Christianity	310	100
Islam	0	0
Others	0	0
Tribe		
Ibibio	224	72.2
Annang	61	19.7
Oron	13	4.2
Igbo	9	2.9
Others	3	1.0
Total	**310**	**100**
Social Class		
1	35	12.3
2	32	10.3
3	44	14.2
4	102	32.9
5	97	31.3
Total	**310**	**100**

Proportion and level of Depression among Study subjects attending the GOP clinics of the UUTH, Uyo

The proportion and level of depression of study subjects are as shown in table 2. Of the 310 subjects recruited for the study, one hundred and forty (45.2%) had depression while more than half, one hundred and seventy (54.8%) were not depressed. Of the one hundred and forty depressed elderly, 127 (90.7%) had mild to moderate depression and 13 (9.3%) had severe depression.

Table 2: Proportion of depression among elderly patients attending GOP clinics of the UUTH, Uyo

Characteristics	Frequency	Percentage
Prevalence of Depression		
Not Depressed	170	54.8
Depressed	140	45.2
Total	**310**	**100**
Levels of Depression		
Mild Depression	127	90.7
Severe Depression	13	9.3
Total	**140**	**100**

Sociodemographic risk factors for depression in elderly persons attending the GOP Clinics of the UUTH, Uyo

The univariate analysis of the sociodemographic risk factors for depression in the study subjects are as shown in table 3.

The proportion of depression in the study subjects was observed to be higher in females than in males (X^2 = 0.499, P = 0.480). There was a significant association between the educational levels of the respondents with depression. Those who had no formal education were in higher proportion than those with formal education (X^2 = 8.757, P = 0.003). Also, the proportion of those having depression was higher in those who had no source of income than those who had an income source (X^2 =12.841, P<0.0001).There was also a significant association between those that had experienced financial failure and those that had not with the proportion of those having depression being higher in the former (X^2 = 9.862, P = 0.002).The proportion of those having depression was also higher in those that were lonely and/or neglected than those that were not and this association was statistically significant (X^2 = 14.967, P <0.0001)

Analysis of the relationship between marital status and depression in the study subjects showed that the proportion of depression was higher in those who had no partners (single, divorced or widowed) than in those who were married with their partner still alive and with them (X^2 = 3.69, P = 0.046).

Table 3: Sociodemographic risk factors for depression in the elderly attending the GOP Clinics of the UUTH, Uyo

Risk Factors	Depression		Chi Square	P value
	Depressed n(%)	Not Depressed n(%)		
Age group (in years)				
60 - 69	83(43.7)	107(56.3)	0.486	0.922
70 – 79	48(47.1)	54(52.9)		
80 – 89	8(50.0)	8(50.0)		
90 - 99	1(50.0)	1(50.0)		
Sex				
Male	57(42.9)	76(57.1)		
Female	83(46.9)	94(53.1)	0.499	0.480
Educational Level				
No formal	41(52.6)	37(47.4))		
Primary	63(48.5)	67(51.5)	8.757	0.033*
Secondary	11(50.0)	11(50.0)		
Post- secondary	25(31.3)	55(68.7)		
Income source				
No Income	77(56.6)	59(43.4)		
Have Income	63(36.2)	111(63.8)	12.841	0.000*
Marital Status				
Single	2(33.3)	4(66.7)		
Married	64(39.8)	97(60.2)	3.96	0.046*
Divorced	2(33.3)	4(66.7)		
Widowed	72(52.6)	65(47.4)		

*Significant P value

Table 3 (contd.): Sociodemographic risk factors for depression in the elderly attending the GOP Clinics of the UUTH, Uyo.

Risk Factors	Depression		Chi Square	P value
	Depressed n(%)	Not Depressed n(%)		
Settlement				
Urban	51(40.5)	75(59.5)	1.881	0.170
Rural	89(48.4)	95(51.6)		
Financial Failure	76(55.1)	62(44.9)	9.865	0.002*
Yes	64(37.2)	108(62.8)		
No				
Lonely/neglected				
Yes	30(73.2)	11(26.8)	14.967	<0.001*
No	110(40.9)	159(59.1)		
Social Class				
1	11(31.4)	24(68.6)	7.263	0.123
2	12(37.5)	20(62.5)		
3	18(40.9)	26(59.1)		
4	46(45.1)	56(54.9)		
5	53(54.6)	44(45.4)		

*Significant P value

Association of the Clinical Factors of the Study Subjects and Depression

The association between clinical factors and elderly depression in study subjects are as shown in table 4.

Clinical factors (History of chronic medical disease, history of a stressful life event, family history of depression and taking regular medications) and their association with depression were analysed. There was no association between depression and the presence of chronic medical illness, family history of depression, patients on regular medications and bereavement. However there was statistically significant association in respondents who has suffered a stressful life event (X^2 = 8.749, P = 0.003).

Table 4: Association between clinical factors and depression in the respondents

Risk Factors	Depression		Chi Square	P value
	Depressed n(%)	Not Depressed n(%)		
History of chronic medical illness				
Yes	71(47.0)	80(53.0)	0.411	0.522
No	69(43.4)	90(56.6)		
Suffer Stressful life events				
Yes	91(52.6)	82(47.4)	8.749	0.003*
No	49(35.8)	88(64.2)		
Family history of depression				
Yes	5(55.6)	4(44.4)	0.404	0.736
No	135(44.9)	166(55.1)		
On Regular medication				
Yes	65(44.5)	81(55.5)		
No	75(45.7)	89(54.3)	0.046	0.909

*** Significant P value**

Predictors of depression among elderly patients attending the GOP Clinics of the UUTH, Uyo

The logistic regression of the predictors of depression among the study subjects are as shown in table 5

Logistic regression analysis of the risk factors for depression in study subjects showed that loneliness/neglect, having financial failures and no source of income and suffering a stressful life event remained strong predictors of depression in the study subjects.

Table 5: Predictors of depression among elderly subjects attending the GOP clinics of the UUTH, Uyo

Factors	Odds Ratio	Standard Error	P value	95% Confidence Interval
Lonely/neglected	3.483	1.377	0.002*	1.604-7.561
Having financial failure	1.748	0.434	0.025*	1.074-2.842
Suffer stressful life events	1.765	0.4406	0.023*	1.082-2.879
No Income	1.995	0.588	0.019*	1.119-3.557
Primary Educational level	1.053	0.322	0.865	0.578-1.918
Secondary Educational level	0.988	0.530	0.983	0.344-2.832
Tertiary Educational level	1.431	0.577	0.374	0.649-3.156

*** Significant P value**

Discussion

This study showed that depression was more prevalent among the female respondents than the males. Several studies have shown that females are more at risk of depression than males. Onya reported that female sex was a risk factor for depression in the elderly.[12] Similar results were also reported in studies conducted over the years by Al- Shammari, Uwakwe and European Longitudinal Study on Ageing (ELSA).[15,16,17] The usual explanations for higher prevalence in females is that females have a higher average number of co- morbid medical conditions, a relatively lower educational background and a higher impact of widowhood than males.

From the study, there was a significant association between the educational level of respondents and depression. Those that had no formal education showed a higher prevalence of depression than those with formal education. This finding is in agreement with those of Onya and Al-shammari.[12,15] It is believed that high level of education protects people from mental disorders and may be associated with higher socioeconomic status. This high socioeconomic status usually translates to more rewarding jobs/financial status than those who are poorly educated or have no formal education.

The study also showed that those that had no partner (widowed, divorced, single) had a higher prevalence of depression than those who had partners. This finding is consistent with those from other studies.[18,19] Loss of a partner is a stressful life event usually associated with psychological and emotional trauma, loneliness as well as lack of support in terms of income. This may ultimately lead to depression.

The study also showed that 43.8% of respondents had no income source while the remaining 56.2% had a source of income ranging from stipends from monthly pensions, trades, gifts and others. Elderly depression was found to be associated with lack of an income source. This finding is in agreement with studies that have shown that deterioration in financial status is among the most frequently endorsed stressful life event experienced by older adults;[20] and older adults who are economically disadvantages are more likely to experience persistent depressive symptoms than those who are not.[9,21]Also, a large

proportion or respondents from the study belonged to the lower socioeconomic Class and recorded the highest depression rates. Findings from this study are in support of those from other studies[12,22]. Studies have also shown that low socioeconomic status reduces capacity to manage stress and increases vulnerability to negative emotions and cognitions[12,22] and that the high prevalence of depressive symptoms seen among lower social strata is due to accumulated exposure to social stressors that have occurred over time.[20]

In this study, there was an association between elderly depression and stressful life events. This is consistent with a meta- analysis of prospective studies of depressive symptom and disorder in adult aged 50 years or older that found that bereavement more than tripled the risk of depression, and this effect was more than any risk factor examined.[23]

Although there was no association of chronic medical illnesses and depression in this study, it is worthy of note that medical condition such as stroke, diabetes mellitus etc. have been found to be associated with high rates of depression. This is in agreement with several studies that have reported a high prevalence of depression in persons with co-morbid medical conditions than those with no co-morbidity.[24-26] Sadly, symptoms of depression may be unrecognized in the elderly as the impact of medical co-morbidity may mask depressive symptoms. Depression further complicates the prognosis of medical illness by increasing physical disability and decreasing motivation and adherence to prescribed medications. In addition, chronic disabling conditions can be a contributory factor to suicide attempts and completions in the elderly, but timely, appropriate treatment of depression can reduce this risk.

In conclusion, it was observed that having no source of income, financial failures, loneliness and neglect as well as stressful life events were risk factors for depression among the elderly respondents in this study. These factors are consistent with the dire situations the elderly are faced with within our communities. There is an increasing need for families to strengthen the support systems especially now when the elderly is often left alone by children who have to leave in search for greener pastures. There is also a need for the government to improve the social welfare of the elderly, provide and sustain free medical and other social services, and with the private sector, put up and/or fund geriatric centers so that the specific needs of the elderly can be addressed.

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