

The Burden of Geriatric Depression on the Family Caregiver

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Abstract: The study was done to determine the influence of geriatric depression among the General Outpatient Department of the University of Port Harcourt Teaching Hospital (UPTH) attendees on the family caregiver. It is a well known fact that the illness of any member of the family has tremendous impact on other family members in several ways and for several reasons and could actually change the previously existing family dynamics, which in turn could affect the functioning of its members thereby, impacting (most often negatively) on both the recipients of care and the larger society to which the family belongs. Geriatric depression is a chronic debilitating illness often coexisting with other chronic conditions. The family caregivers are therefore saddled with tremendous responsibilities which are expected to take a toll on them. It is against this background that this study was done. A descriptive cross-sectional study of one hundred and fifty randomly selected elderly patients attending the GOPD was carried out along with their family caregivers who were either spouses or older children. A structured questionnaire containing the Geriatric Depression Scale and the Zarit Caregiver Burden Scale (ZCBS) was administered to the patients that had satisfied the inclusion criteria, and their family caregivers respectively. Data was entered into the computer using the Epi-info version 6.04 software, and analysed. The care of depressed patients took a toll on the family caregivers making them react adversely thereby worsening the condition of the recipients of care. The result of this study suggests that the depressed elderly respondents had a significant negative influence on the family caregivers.

Keywords: Burden, Geriatrics, Family Caregiver, Depression

1. Introduction

1.1. Statement

The effect of geriatric depression on family caregivers is important as it may have negative financial and health implications for both the caregivers and the depressed elderly patients. In the latter, it could further aggravate the morbidity pattern. Thus, ultimately leading to an increased risk of placing the family member in a long-term care facility

1.2. Literature Review

'Burden' as perceived by family caregivers is an all-encompassing word used to describe tension, anxiety (strain burden), relationship burden, objective burden (time infringement) and financial burden all of which impair their ability to provide care [1]. The Zarit Caregiver Burden Scale

is one of the most widely used scales in order to determine the degree of burden in caregivers [2].

Studies have shown that higher levels of burden may correlate with increased morbidity and mortality in the family caregivers [4, 5, 6]. The incidence of depression in burdened caregivers ranges from 18 to 47%. Conversely, depressed caregivers experienced high levels of burden [7].

The prevalence of anxiety has also been found to be higher in the burdened family caregivers and the overall physical wellbeing was found to be relatively lower than in those caregivers who were not burdened [8].

Sewitch et al. [9] studied the impact of frail elders on family caregivers and arrived at the conclusion that caregivers (mostly spouses and adult children) of depressed elderly patients suffered from poor mental health and this in turn was associated with depression in the elderly people they were caring for. This fact was further buttressed by the

study done by Martire et al who showed that family caregiver burden was associated with greater depression severity and poor response to antidepressants among the elderly depressed recipients of care [10].

Studies have shown that socio-demographic characteristics affect the prevalence of family caregiver burden [10, 11, 12, 13].

Most significant of these factors is age, gender [14, 15], occupation, educational level, social status [16, 17] and marital status [18, 19].

1.3. Relevance

It is pertinent to explore the effect of depression suffered by elderly patients on their family caregivers in our environment. Knowledge of the family member’s perception of the depressive illness, care-giving stressors, their coping mechanisms, the effect on their mental health and overall well-being is paramount to the management of geriatric depression [19].

1.4. Objectives

Against this background, the purpose of this study is to elicit the prevalence, magnitude and socio-demographic influences on perceived burden by family caregivers (of depressed elderly patients) that may affect social, financial, personal and physical wellbeing.

2. Materials and Methods

2.1. Study Design

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 [20].

Caregiver's name: _____ Date: _____

The following questions reflect how people sometimes feel when they are taking care of another person. After each question, circle how often you feel that way: never, rarely, sometimes, frequently, or nearly always. There are no right or wrong answers.

	Never	Rarely	Sometimes	Frequently	Nearly always
1. Do you feel that your relative asks for more help than he or she needs?	0	1	2	3	4
2. Do you feel that because of the time you spend with your relative, you do not have enough time for yourself?	0	1	2	3	4
3. Do you feel stressed between caring for your relative and trying to meet other responsibilities for your family or work?	0	1	2	3	4
4. Do you feel embarrassed over your relative's behavior?	0	1	2	3	4
5. Do you feel angry when you are around your relative?	0	1	2	3	4
6. Do you feel that your relative currently affects your relationship with other family members or friends in a negative way?	0	1	2	3	4
7. Are you afraid about what the future holds for your relative?	0	1	2	3	4
8. Do you feel your relative is dependent on you?	0	1	2	3	4
9. Do you feel strained when you are around your relative?	0	1	2	3	4
10. Do you feel your health has suffered because of your involvement with your relative?	0	1	2	3	4
11. Do you feel that you do not have as much privacy as you would like, because of your relative?	0	1	2	3	4
12. Do you feel that your social life has suffered because you are caring for your relative?	0	1	2	3	4
13. Do you feel uncomfortable about having friends over, because of your relative?	0	1	2	3	4
14. Do you feel that your relative seems to expect you to take care of him or her, as if you were the only one he or she could depend on?	0	1	2	3	4
15. Do you feel that you do not have enough money to care for your relative, in addition to the rest of your expenses?	0	1	2	3	4
16. Do you feel that you will be unable to take care of your relative much longer?	0	1	2	3	4
17. Do you feel you have lost control of your life since your relative's illness?	0	1	2	3	4
18. Do you wish you could just leave the care of your relative to someone else?	0	1	2	3	4
19. Do you feel uncertain about what to do about your relative?	0	1	2	3	4
20. Do you feel you should be doing more for your relative?	0	1	2	3	4
21. Do you feel you could do a better job in caring for your relative?	0	1	2	3	4
22. Overall, how burdened do you feel in caring for your relative?	0	1	2	3	4

Total score: _____

SCORING KEY:
0 to 20 = little or no burden; 21 to 40 = mild to moderate burden; 41 to 60 = moderate to severe burden; 61 to 88 = severe burden.

Figure 1. Shows the Zarit Caregiver Burden Scale.

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 at the clinics. The different specialties offered 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 of 65 years and above along with their family caregivers (spouses or children) 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. For each respondent, one caregiver (either a spouse or a child) was administered the Zarit Caregiver Burden Scale (see figure 1). This is a 22-item standardized rating scale for assessing the level of stress or burden one experiences. Scores allotted for each item range from 0 to 4. Those with 0 to 20 points had little or no burden; 21 to 24 points had mild to moderate burden; 41 to 60 were moderately to severely burdened and 61 to 88 were severely burdened.

2.2. Study Population

Spouses and adult children of the elderly patients were recruited into the study.

2.3. Inclusion and Exclusion Criteria

The inclusion criterion of the study was men and women (spouses/adult children) who came along and were caring for elderly depressed respondents presenting at the GOPD of UPTH

Excluded were those who:

- Were too ill to be included in the study.
- Did not give their consent

2.4. Sample Size

Araoye's formula [21] in a descriptive study was used.

$$N = \frac{z^2 pq}{d^2}$$

N= the desired sample size when the population is greater than 10,000

d= desired precision at 5% (0.05). It is the degree of accuracy desired.

z= confidence limits. A consent at 95% confidence level= 1.96

p= prevalence of depression in the elderly =11%= 0.11 in the elderly [31]

q= 1-p (proportion of the elderly not suffering from depression); 1-0.11= 0.89

$$N = \frac{(1.96)^2 (0.11 \times 0.89)}{0.05^2} = 150$$

One caregiver was chosen for each of the elderly patients. Therefore, 150 subjects were recruited for the study.

2.5. Data Analysis

All the data were entered into the computer using the EPI-INFO version 6.0 software package. Epi-info is a software program for data collection and analysis, including common statistical tests. The programme was created and maintained by the Centre for Disease Control. It was designed particularly for epidemiological studies. After data entry, the frequencies of all variables were generated and checked for confounding variables. All errors found were corrected before data analysis.

Frequencies of categorical data were determined and the mean and standard deviation of some continuous variables computed. Bivariate analysis was used to explore the relationship between the independent variables, which included sex, age group, socioeconomic class etc and dependent variables, which included those that scored 21 to 88 points on the Zarit Caregiver Burden Scale. Association between categorical variables such as age and sex was determined using the chi-square. Chi-square (χ^2) test was used to determine significance of association between the groups. The outcome of the test of significance was expressed in terms of probability (P). The P-value of 0.05 or less was the criterion for significance. Significance indicates that an observed result represents a real difference and it could not have occurred by chance or due to sampling error.

2.6. Ethical Considerations/ Approval of the Study

Ethical approval was sought and obtained from the hospital ethical committee. Informed consent was obtained from the subjects (in accordance with ethical principles for the guidance of physicians in medical research) [4]. The consent form is attached in Appendix 2. Caregivers were assured that they were free to opt out of the study at any stage, and that if they did, they would not be denied medical treatment or victimised in any other way.

3. Results

The Geriatric Depression Scale was the tool used for diagnosing depression in the recipients of care. The prevalence of depression among them was calculated based on the G. D. S. scores obtained. figure 2 shows the prevalence of depression among the elderly recipients of care attending the GOPD of UPTH.

Scores ranged from 2-20. The mean score was 8.6±4.2; the

median was 8.0 and the mode was 5.0. Thirty three (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% (figure 2).

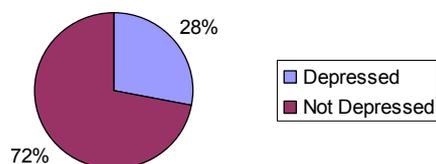


Figure 2. Prevalence of Depression among the Respondents.

The Zarit Caregiver Burden Scale was the tool used to categorise the family caregivers into those who were burdened and those who were not. Scores ranged from 4 to 78. Caregivers that had scores more than 20 numbered 21. Therefore the prevalence of caregiver burden was 12%. Those that were mildly burdened numbered 12 (8%), moderately burdened-7 (4.7%), and severely burdened-2 (1.3%).

Table 1. Relationship between caregiver burden and depression amongst recipients of care.

Depression	Burdened	Not Burdened	Total	X ²	P	OR
Depressed	18 (42.9)	24 (55.1)	42			
No Depressed	3 (2.8)	105 (97.2)	108	40.73	0.000	26.786
Total	21	129	150			

Table 2. Distribution of some socio-demographic characteristics of the caregivers by gender.

Factors	Total	Gender N (%)	
		Male	Female
Age Distribution (age group in years)			
25-34	12	2 (15.7)	10 (83.3)
35-44	36	12 (33.3)	24 (66.7)
45-54	52	10 (19.2)	42 (80.8)
>55	50	5 (10.0)	45 (90.0)
Relationship to patient			
Spouse	55	19 (34.5)	36 (55.58)
Child	95	10 (10.5)	85 (89.5)
Marital Status			
Married	94	20 (21.3)	74 (78.7)
Widowed	56	9 (16.1)	47 (83.9)

Table 1 shows the relationship between caregiver burden and depression among the elderly patients who were the recipients of care from the caregivers. Out of the 42 caregivers catering for depressed elderly relatives, 18 were burdened. Conversely, the remaining 108 caregivers catering for elderly patients not found to be depressed, only 3 were

burdened. This was statistically significant ($X^2=40.73$, $p=0.000$). The Odds Ratio was 26.786 meaning that caregivers of depressed elderly patients were about 27 times more likely to be burdened than caregivers of non-depressed elderly patients.

Table 2 shows the distribution of some socio-demographic characteristics of the family caregivers; namely: age, relationship to the elderly recipients of care and marital status by their gender.

It is clear from this table that majority of the caregivers were females (121 females, 29 males). Their ages ranged from 25 to 68. Most (102) of the caregiver (15male and 87 female) were 45years and more.

The majority of the caregivers were the adult children of the recipients of care totalling 95 (10 males, 85 females) 55 out of the total of 150 caregivers were spouses (19 male, 36 female). The table also clearly shows that most of the caregivers were married: Out of 94 that were married, 20 were males, 74 were females. Those that were widowed numbered 56 and only 9 of them were males.

Table 3 shows the relationship between socio-demographic characteristics of the family caregivers of elderly depressed patients and the burden they experience.

Females were shown to be more likely to be burdened than their male counterparts ($x^2=3.86$, $p=0.049$).

Out of the 50 caregivers that were above 55 years, 16 were burdened and this was statistically significant ($x^2=8.59$, $d.f.=3$, $p=0.035$).

Those that were widowed were more likely to be burdened: the widowed caregivers numbered 56, 16 of them were catering for depressed elderly patients and a total of 12 widowed family caregivers were burdened. This was also found to be statistically significant ($x^2=6.46$, $d.f.=1$, $p=0.011$).

The ethnic group of the caregiver did not influence burden outcomes ($x^2=2.18$, $d.f.=4$, $p=0.703$).

Occupation played a role in caregiver burden outcomes: 16 of the caregivers that were either unemployed or self-employed were burdened and this was statistically significant ($x^2=11.52$, $d.f.=3$, $p=0.009$).

Neither educational levels, nor social class had a significant bearing on family caregiver burden outcomes ($x^2=5.48$, $d.f.=3$, $p=0.139$ and $x^2=7.57$, $d.f.=4$, $p=0.108$ respectively).

Though the duration of care was not found to be statistically significant ($x^2=1.73$, $d.f.=3$, $p=0.630$), most of the burdened family caregivers 16 out of 21 i.e 76% of the burdened caregivers had been taking care of their elderly family members for 1-9 years.

The relationship of the family caregivers to the recipients of care had no statistically significant relationship with burden outcomes.

Table 3. The Relationship of Socio-Demographic Characteristics of Family Caregivers of Elderly Depressed Patients and the Burden they Experience.

Factors	N	%	Depression		Care Giver Burdened n=42		X ²	Df	P-value (OR)
			Depressed	Not Depressed	Burdened	Not Burdened			
Gender Distribution of caregiver									
Female	121	80.7	34 (28.1)	87 (71.9)	20 (76.5)	14 (23.5)	3.86	1	0.049 (9.993)
Male	29	19.3	8 (26.7)	21 (73.1)	1 (25.0)	7 (75.0)			
Ethnic Group of caregiver									
Igbo	64	42.7	11 (17.2)	53 (82.8)	8 (57.1)	6 (42.9)	2.18	4	0.703
Ikwerre/Etche	33	22	13 (39.4)	20 (60.6)	6 (46.2)	7 (53.8)			
Ijaw	17	11.3	5 (29.4)	12 (70.6)	2 (28.6)	5 (71.4)			
Ogoni	11	7.3	4 (36.4)	7 (63.6)	2 (66.7)	1 (33.3)			
Other ethnic groups	25	16.7	10 (40.0)	15 (60.0)	3 (60.0)	2 (40.0)			
Occupation									
Civil Servants	54	36	17 (31.5)	37 (68.5)	4 (28.6)	11 (71.4)	11.52	3	0.009
Pensioners	19	12.7	9 (10.5)	10 (89.5)	1 (25.5)	3 (75.0)			
Self-employed	41	27.3	14 (34.1)	27 (65.9)	12 (80.0)	2 (20.0)			
Unemployed	36	24	9 (25.0)	27 (75.0)	4 (44.4)	5 (55.6)			
Residential area									
Urban	98	65.3	33 (33.7)	65 (66.3)	19 (22.2)	14 (77.8)	2.26		0.133
Rural	52	34.7	9 (17.3)	43 (82.7)	2 (57.6)	7 (42.4)			
Educational Level of caregiver (Oyediji's class.)									
Class 4 (No formal edu.)	60	40.0	10 (16.7)	50 (83.3)	7 (70.0)	3 (30.0)	5.48	5	0.139
Class 3 (Primary edu.)	45	30.0	12 (26.7)	33 (73.3)	7 (58.3)	5 (41.7)			
Class 2 (Secondary edu.)	33	22.0	12 (36.4)	21 (63.6)	6 (50.0)	6 (50.0)			
Class 1 (Tertiary edu.)	12	8.0	8 (66.7)	4 (33.3)	1 (12.5)	7 (87.5)			
Social Class of caregiver (Oyediji's class.)									
Class 5	64	42.7	11 (17.2)	53 (82.8)	8 (72.7)	3 (27.3)	7.57	4	0.108
Class 4	45	30	13 (28.9)	32 (71.1)	8 (61.5)	5 (38.5)			
Class 3	24	16	7 (29.2)	17 (70.8)	3 (42.9)	4 (57.1)			
Class 2	9	6	6 (66.7)	3 (33.3)	1 (16.7)	5 (83.3)			
Class 1	8	5.3	5 (62.5)	3 (37.5)	1 (20.0)	4 (80.0)			
Duration of care									
1-5 years	77	51.3	16 (20.8)	61 (79.2)	10 (62.5)	6 (37.5)	1.73	3	0.630
5-9 years	42	28	14 (33.3)	28 (66.7)	6 (42.9)	8 (57.1)			
10-14 years	21	14	9 (42.9)	12 (57.1)	4 (44.4)	5 (55.6)			
>15 years	10	6.7	3 (30.0)	7 (70.0)	1 (33.3)	2 (66.7)			
Age Distribution (age group in years)									
25-34	12	8.0	4 (25.0)	8 (75.0)	1 (33.3)	3 (66.7)	8.59	3	0.035
35-44	36	24.0	7 (14.3)	29 (85.7)	1 (19.4)	6 (80.6)			
45-54	52	34.7	8 (50.0)	44 (50.0)	3 (15.4)	5 (84.6)			
>55	50	33.3	23 (65.2)	27 (34.8)	16 (46.0)	7 (54.0)			
Relationship to patient									
Spouse	55	36.7	12 (21.8)	43 (78.2)	4 (33.3)	8 (66.7)	1.87	1	0.172
Child	95	63.3	30 (31.6)	65 (68.4)	17 (56.7)	13 (43.3)			
Marital Status									
Widowed	56	37.3	16 (28.6)	40 (71.4)	12 (34.6)	4 (65.4)	6.46	1	0.011 (4.745)
Married	94	62.7	26 (27.7)	68 (72.3)	9 (75.0)	17 (25.0)			

4. Discussion

This hospital-based study was conducted at the University of Port Harcourt Teaching Hospital in Choba near Port Harcourt which is a cosmopolitan city in the South- South geo-political zone of Nigeria. The objectives of the study were to determine the influence of geriatric depression and the socio-demographic characteristics of the family caregivers on their perception of being burdened. The Zarit Caregiver Burden Scale was the tool used to categorise the family caregivers into those who were burdened and those who were not. Scores ranged from 4 to 78. Caregivers that had scores more than 20 numbered 21. Those that were mildly burdened numbered 12, moderately burdened-7, and

severely burdened-2.

Table 1 shows the relationship between caregiver burden and depression among the elderly patients who were the recipients of care from the caregivers. Out of the 42 caregivers catering for depressed elderly relatives, 18 were burdened. Conversely, the remaining 108 caregivers catering for elderly patients not found to be depressed, only 3 were burdened. This was statistically significant ($X^2=40.73$, $p=0.000$). The Odds Ratio was 26.786 meaning that caregivers of depressed elderly patients were about 27 times more likely to be burdened than caregivers of non-depressed elderly patients.

Table 2 shows the distribution of some socio-demographic characteristics of the family caregivers namely age, relationship to the elderly recipients of care and marital status

by their gender. It is clear from this table that majority of the caregivers were females (121 females, 29 males). Their ages ranged from 25 to 68. Most (102) of the caregiver (15 males and 87 females) were 45 years and more. The majority of the caregivers were the adult children of the recipients of care totalling 95 (10 males, 85 females) 55 out of the total of 150 caregivers were spouses (19 males, 36 females). The table also clearly shows that most of the caregivers were married: Out of 94 that were married, 20 were males, 74 were females. Those that were widowed numbered 56 and only 9 of them were males.

Table 3 shows the relationship between socio-demographic characteristics of the family caregivers of elderly depressed patients and the burden they experience. Females were shown to be more likely to be burdened than their male counterparts ($\chi^2=3.86$, p -value-0.049). Out of the 50 caregivers that were above 55 years, 16 were burdened and this was statistically significant ($\chi^2=8.59$, $d.f.=3$, p -value-0.035). The odds ratio is:

Those that were widowed were more likely to be burdened: the widowed caregivers numbered 56, 16 of them were catering for depressed elderly patients and a total of 12 widowed family caregivers were burdened. This was also found to be statistically significant ($\chi^2=6.46$, $d.f.=1$, p -value-0.011).

The ethnic group of the caregiver did not influence burden outcomes ($\chi^2=2.18$, $d.f.=4$, $p=0.703$). Occupation played a role in caregiver burden outcomes: 16 of the caregivers that were either unemployed or self-employed were burdened and this was statistically significant ($\chi^2=11.52$, $d.f.=3$, $p=0.009$). Neither educational levels, nor social class had a significant bearing on family caregiver burden outcomes ($\chi^2=5.48$, $d.f.=3$, $p=0.139$ and $\chi^2=7.57$, $d.f.=4$, $p=0.108$ respectively).

Though the relationship between the duration of care and family caregiver burden was not found to be statistically significant ($\chi^2=1.73$, $d.f.=3$, $p=0.630$), most of the burdened family caregivers 16 out of 21 i.e 76% of the burdened caregivers had been taking care of their elderly family members for 1-9 years. Surprisingly, finding is, in keeping with previous studies [4].

The relationship of the family caregivers to the recipients of care had no statistically significant relationship with burden outcomes.

References

- [1] Marie Y et al. A Dimensional Analysis of Caregiver Burden Among Spouses and Adult Children. *The Gerontologist* 2010; 51 (3): 321-331. <http://gerontologist.oxfordjournals.org>
- [2] Kevorkian R. Depression in the elderly. Division of Geriatric Medicine, St. Louis School of Medicine. 2005 May (Cited 2007 December 12): (screen 1). Available from: www.thedoctorwillseeyounow.com/articles/behaviour/depression
- [3] Bruce ML. Psychosocial risk factors for depressive disorders in late life. *Biol Psychiatry*, 2002 (52): 175-184.
- [4] Parks S. M, Novielli KD. A practical Guide to Caring for Caregivers. *American Family Physician*. Dec 2000.
- [5] Kraaij V, Arensman E, Spinhoven P. Negative life events and depression in elderly persons. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 2002; 57: 87-94.
- [6] Heun R, Hein S. Risk factors for major depression in the elderly. *European Psychiatry* 2005; 20 (3): 199-204.
- [7] Akanji, B. O., A. Ogunniyi and O. Baiyewu, 2002. Healthcare for older persons, a country profile: Nigeria. *J. Am. Geriatr. Soc.*, 50: 1289-1292.
- [8] Abe, K., T. Kashiwagi and S. Tsuneto, 2003. Coping strategies and its effects on depression among caregivers of impaired elders in Japan. *Ageing Ment. Health*, 7: 207-211.
- [9] Sewitch, M. J., J. McCusker, N. Dendukuri and M. J. Yaffe, 2004. Depression in frail elders: Impact on family caregivers. *Int. J. Geriatr. Psychiatry*, 19: 655-665.
- [10] Martire LM, Schultz R, Reynolds C et al. Impact of Close Family Members on Older Adults' Early Response to Depression Treatment. *Psychology and Aging*, 23 (2), Jun 2008, 447-445.
- [11] Gazmararian J., Baker D., Parker R. and Blazer D. G., A multivariate analysis of factors associated with depression, *Archives of Internal Medicine*, 160 (21), 3307-14 (2000).
- [12] Coyne J. C. and Schwenk T. L., Diagnosis of late life depression: The View from Primary Care, *Biol. Psychiatry* 52 (3), 157-163 (2002).
- [13] Al-Shammari S. A., Prevalence and correlates of depression among Saudi elderly, *Wiley Interscience J*; (Abstract) (1999).
- [14] Baldwin R. and Wild R., Management of depression in late life, *Advances in Psychiatric Treatment*, 10 131-139, (2004).
- [15] Kevorkian R., Depression in the elderly, Division of Geriatric Medicine, St. Louis School of Medicine, Available from: www.thedoctorwillseeyounow.com/articles/behaviour/depression (2005).
- [16] Baldwin R. C., Poor prognosis of depression in elderly people: causes and actions, *Ann Med*, 32 (4), 252-6 (2000).
- [17] Sokoya O. O. and Baiyewu O., Geriatric depression in Nigerian Primary care attendees, *Int Geriatr Psychiatry*, 18, 506-510 (2003).
- [18] Tomilson, M., L. Swartz, L. Kruger and O. Gureje, 2007. Manifestations of affective disturbance in sub-Saharan Africa: Key themes. *J. Affect. Disorders*, 102: 191-198.
- [19] Wilson, K., P. Mottram and A. Sixsmith, 2006. Depressive symptoms in the very old living alone: Prevalence, incidence and risk factors. *Int. J. Geriatr. Psychiatry*, 22: 361-366.
- [20] National Population Census, Port Harcourt (2006).
- [21] Araoye, O. A., 2003. Research methodology with statistics for health and social sciences. *Revista De Biologia Tropical*, pp: 118.