DEPRESSION IN OLD AGE: PREVALENCE, QUALITY OF LIFE AND IMPACT ON INFORMAL CAREGIVERS IN LAGOS NIGERIA.

A PROPOSAL SUBMITTED TO THE NATIONAL POSTGRADUATE MEDICAL COLLEGE IN PART FULFILLMENT OF THE AWARD OF FELLOWSHIP

BY

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DECLARATION

I hereby declare that this work is original and will be conducted by me. It has not been earlier submitted to any college for award of fellowship or sent elsewhere for publication.

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CERTIFICATION

The study reported in this dissertation will be conducted by Dr Olajumoke Adelayi under our supervision.

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This work is dedicated to God Almighty
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My lovely children, this is for you.
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INTRODUCTION

1.0 Aging

Ageing is a natural process for humans; and the chronological age of between 60 and 65 years is widely accepted as a defining point for an older person. It has been observed that due to reduction in infant mortality rates, better control of infectious diseases and improved health care delivery worldwide there has been an increase in life expectancy after birth and subsequently an increase in the geriatric population since the late 90s. This growth has brought to the fore the increasing need of health care policies, plans and programmes for the elderly to target their various healths needs to reduce disabilities and improve quality of life in old age. It is estimated that about 60% of the 580 million older people in the world live in developing countries and a growth estimate of about 70% of this population is expected by the year 2020. Due to this ‘population ageing’ it has been projected that the prevalence of mental illness especially in the elderly will increase significantly in the years ahead globally.

Depression is the most common and prevalent mental illness worldwide and reported to be the 4th leading cause of global burden of disease in all ages. However in the older population, depression is the leading cause of disease burdens and leading contributor to Disability Adjusted Life Years. Its presence has been shown to significantly affect the quality of life of those affected and worsens the prognosis in those with comorbid physical health problems.

1.1 Nigerian Aging Population

The expected population growth in developing countries is of great concern considering the economic strength and preparedness of these nations for the elderly who are often regarded as the unproductive (dependent) age group in these countries. Nigeria is the most populous
country in Africa (170 million) and average life expectancy is at 52 years and only about 3.1% (5.2 million) of the population are above 65 years of age according to recent surveys. Lagos state is the most populated state in Nigeria with about 17 million dwellers, which gives an estimate of about 527,000 of those above 65 years in the state. Majority of the people that survive into old age are faced with diverse physical and psychosocial problems and the available health service delivery in Nigeria is poor.

1.2 Geriatric Depression

The global prevalence of geriatric depression was reported to range between 10 and 20%. However, the prevalence of those with identifiable depressive symptoms not meeting the strict clinical criteria for depression diagnosis is higher in most studies and ranges between 5% and 37.3%. While studies in community settings report high prevalence of between 13 and 16%, studies from primary care showed a slightly lower prevalence of 10 to 17% for major depression. And a much higher prevalence (12% to 45%) had been reported in hospitalized and nursing home patients.

In Nigeria, available studies are majorly from the community and primary care settings. A prevalence of between 12.3% and 19.8% in the community was reported by Baiyewu et al in 2007 and was found to be comparable to that from developed countries. Depression was also found to be the commonest mental illness amongst elderly community dwellers in 22 states of Nigeria with a prevalence of between 19.8% and 26.2%. In primary care setting, an overall rate of 7.4% with only 1.5% having severe depression was reported. Depression is also the commonest psychiatric disorder in the hospitalized elderly in non psychiatric wards in a teaching hospital.
hospital in Nigeria, though a study conducted in nursing home in Lagos showed a lower prevalence.

Globally, prevalence of geriatric depression was consistently found to be associated with being female, single, widowed, divorced, staying in nuclear families and having a chronic physical illness. Other less commonly associated factors were low socio-economic status, low educational level and history of prior depression. In Nigeria, geriatric depression has been found to have significant association with low socio-economic status, rural dwelling, and subjective report of poor health.

There is increasing evidence that late life depression may lead to disability which affects the individual’s quality of life, activities of daily living and is associated with increased rates of hospital admissions, morbidity and mortality. The Ibadan Study of Ageing further reinforces the association of depression with increased disability in the geriatric population. This underlines the importance of regularly assessing elderly depressed patients for disabilities and its effects on their quality of life.

In developed countries, the care of the elderly is a priority of the government. There are medical policies, guidelines and support for their care. On the other hand majority of old people in Nigeria are catered for by their family members who mostly are overwhelmed with the other issues of daily living. This is largely due to lack of government involvement in the care of the elderly, high level of poverty and out of pocket mode of payment for health care needs for this age group; even with these observed difficulties and limitations, support from the family is still regarded as much better than what is seen in developed countries. Nonetheless, studies have shown that informal caregivers of old patients irrespective of the Illness being
catered for are at higher risk of developing mental illnesses themselves, the common ones being depression and anxiety related problems and are also affected significantly in other areas of their lives and functioning 39-41. Factors of high significance are numbers of hours of care, educational level 42-43, illness related behavior and greater functional disability in care recipient 40. It has also been noted that the presence of care burden in these carers affects the continuing treatment of depressed elderly patients as they are often lost to follow up due to carer strain 44.

1.3 Justification for the study

Available studies in Nigeria have examined geriatric depression in different settings, but emphasis has been more on the prevalence and correlates, none so far has studied how the illness impacts the lives of the caregivers compared with the magnitude of research work among caregivers of those with dementia 174, 176. The population of Lagos state and the GOPD of LASUTH attendees will be a fair representation of this population and will allow for the inclusion of their caregivers who often accompany them for clinic visits and follow-ups.

These identified issues show the importance of assessing functioning and quality of life of the depressed elderly and that of their informal caregivers. This is to assist in identifying the depressed elderly and those with disabilities to enable proper and prompt treatment which will at the end reduce the burden on the caregivers and improve quality of life of both patients and caregivers.
LITERATURE REVIEW

2.1 Aging and mental health

Old age is associated with changes which are varied between individuals depending on different biological, psychological and social factors that each individual is exposed to during the lifetime. In most studies, the age range 60 to 65 years was used as the cut-off for old age.

According to the World Health Organization (1998), ‘population ageing’ is now a part of the developed world and is gradually becoming noticeable in developing nations around the world. This is largely due to the overall improved health care delivery from preconception through childbirth and infancy period, better control of infectious diseases worldwide and increasing life expectancy due to improved medical interventions for most illnesses. In 1999, it was reported that there are 580 million older people in the world and this number is expected to rise by about 70% by the year 2020 particularly in the developing nations. Poverty is however a factor to consider in these developing countries as it still impacts greatly on the delivery of adequate and effective health care to the old people as their earning capacity is reduced.

Nigeria’s population has also experienced the projected growth of the population of its citizens with an estimated growth rate of 3.25% annually since 2006. The Nigerian population is currently about 170 million with 3.1% above 65 years and average life expectancy of 52 years.

Many people live well into old age without any mental health issues but there are several myths that surround old age, an example is the belief that persistent low mood is part of the decline expected with chronic physical illnesses in old age. There is also the wrong view that the elderly have little or nothing to contribute to the society thus contributing to their neglect. However several reasons have been documented to be associated with the development of mental illness in the elderly, these include biological (aging brain and loss of neurons), social
(retirement, children leaving home, death of close relatives) and psychological changes that may result from isolation and a feeling of lack of accomplishment \(^3, 22, 55\). They serve as predisposing, precipitating and sometimes maintaining factors in old age mental illnesses.

WHO defines health as ‘a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity’\(^56\). From this definition, mental health is essential to the overall health and wellbeing, it must be recognized and its problems treated in all age groups. On the other hand, mental health is defined as ‘a state of well being in which every individual realizes his or her own potential, can cope with the normal stresses of life, work productively and fruitfully, and able to make a contribution to his or her community’ \(^57\). This definition brings forward the significance of mental health, it is very essential for an individual so that he may be able to appreciate his physical and social wellbeing.

According to Erik Erikson (1948), failure of proper negotiation of early stages of human psychosocial development can lead to ‘despair’ in old age (65 to death), due to loss of ‘integrity’ which is the normal expectation at this stage characterized by acceptance of life and its past failures and achievements \(^59\). Failure to reach this stage of integrity successfully has been reported to be associated with development of severe depressive disorders \(^59\). Such individuals from the stage of ‘generativity’ (40 to 65 years) can be significantly depressed because of earlier disappointments and failed expectations and as they get much older tend to develop depression or anxiety disorders and have high suicidal thoughts and suicide rates \(^60\).

Various studies globally have reported the overall prevalence of mental illness in the elderly; it is estimated in a range between 20% and 26.7% \(^22, 61\). The common ones are anxiety, cognitive impairment (dementia), depression and alcohol dependence. However, geriatric depression remained the most prevalent in these studies \(^61-64\).
For older people, mental health problems are implicated in increased morbidity and mortality. It contributes to increased hospital visits, frequent admissions, need for residential care and greater demands on caregivers. It has also been found to impact negatively on the individual’s ability to perform basic activities of daily living; these include bathing, washing and dressing adding to disabilities experienced by the patients and increasing the burden of care experienced by the caregivers.

To this end, the need for early detection, proper diagnosis and management in this population of elderly of any form of mental ill health at every level of health care delivery cannot be overemphasized as this population is increasing the world over.

2.2 Depression, an overview

Depression is defined as ‘a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration’ (2004). It contributes significantly to the global burden of disease affecting about 350 million people worldwide and ranked 4th in 2004 but is projected to become the leading cause of disease burden by year 2030.

2.2.1 Classification of Depression

Depression has been classified using two major diagnostic criteria, the International Classification of Diseases 10th revision developed by the WHO and the Diagnostic and Statistical Manual of the American Psychiatric Association. According to the ICD-10, a minimum of 2 weeks is required to be able to make the diagnosis and at least 2 of persistent low mood, loss of interest in usual pleasurable activities and reduced energy is required. Other criteria are excessive or inappropriate guilt feelings, feelings of worthlessness, difficulty concentrating, disturbed sleep, diminished appetite (+/- significant weight loss), ideas or acts of
self harm/suicide. It is classified according to level of severity into mild, moderate or severe and presence of psychotic symptoms is also recognized when present. The diagnosis is made in the absence of identifiable substance use disorder or an organic problem that could account for the symptoms observed.

### 2.2.2 Prevalence

Depression is recognized as a non-communicable disease of significant interest in public health and with a great impact on economic burden of nations around the world. This can be attributed to its high prevalence in different age groups, its association with other co morbid health problems and the significant disability in those affected. Reports on prevalence are however affected by ways of translation of study questions, lack of standard diagnostic screening criteria, cultural differences and different risk factors in study populations.

A survey by the WHO in 2012 shows lifetime prevalence in the range of 3% (Japan) and 16.9% (USA), with most countries between 8 to 12%. Another recent WHO publication in 2012 to mark the annual world mental health day (DEPRESSION: A GLOBAL CRISIS) noted that depression will be the leading cause of world disability by 2020. Depression is also expected to be the largest contributor to disease burden by 2030. This further stresses the public health importance of depression and its impact on patients and the world at large.

And going further is the observation that the world mental health day theme for year 2013 (MENTAL HEALTH AND OLDER ADULTS) is again focusing on the mental health of the elderly and depression is one of the major disorders to be addressed.

Prevalence of depression in Africa from studies available gives a wide range of values. A 2 year household survey conducted in South Africa involving 4351 adults reported lifetime and 12 months prevalence of 9.7% and 4.9% respectively. However studies in Nigeria have results...
based on the type of population studied, Gureje et al.\textsuperscript{73} from a survey of mental health and well being of adult Nigerians reported a lifetime and 12 months prevalence of 3.1\% and 1.1\% respectively. Another Nigerian study from Ibadan that compared the prevalence in rural and urban areas reported an overall prevalence of 5.2\% with higher prevalence in the rural areas\textsuperscript{32}. Other studies that assessed prevalence in special groups such as adolescents\textsuperscript{47}, university undergraduates\textsuperscript{74} and pregnant women\textsuperscript{47} reported 6.9\%, 8.3\%, and 8.3\% rates respectively.

It is important to note however that the wide variations in the prevalence can be attributed to the different populations studied, and the different screening and diagnostic instruments in the various studies and other cultural differences\textsuperscript{75}. Other studies have assessed prevalence of depression in those with various physical illnesses and values are consistently higher than that of the normal adult population without co morbidities. Some of the available studies also examined prevalence of depression in those with HIV\textsuperscript{76} and recorded a prevalence of 28.7\%, 13\% in post stroke patients\textsuperscript{77, 78} and as high as 40.3\% in breast cancer patients\textsuperscript{79}. These results are comparable with those of most developed countries.

2.2.3 Factors associated with prevalence of Depression

a) Gender.

Several studies have shown consistently the increased prevalence of major depression in females, as much as twofold greater (1.7 to 2.7) than in men\textsuperscript{60, 72, 80, 81}. These studies identified factors such as onset of puberty, premenstrual periods, dysphoric symptoms, postpartum and pregnancy related issues, and menopause\textsuperscript{80} as being important reasons why women tend to have more depressive symptoms and diagnosis. Earlier onset of depression women is also contributory to higher prevalence in them\textsuperscript{81}. Other psychosocial stressors experienced by women were found to also contribute significantly as women tend to internalize their conflicts unlike men\textsuperscript{60}. 
b) Age.

The mean age of onset is widely reported as between 20 to 30 years of age \(^{72, 82, 83}\). There is a report of another peak of incidence in those between 50 and 60 years \(^{84}\) and more women were found in this age group and this supports other research works done in old age that reports higher prevalence of depression in elderly females \(^{81}\). Of significance is the increasing prevalence in the younger age group which is associated with the increasing prevalence of alcohol and drug abuse in them \(^{85}\).

c) Marital Status

Being single, divorced, separated or widowed or not having any close interpersonal relationship is a recognized factor in the incidence and prevalence of depression \(^{82, 83}\).

d) Socioeconomic Factors

Depression is reported to be more prevalent in the rural areas \(^{32, 83}\). Other socioeconomic factors include low level of education \(^{72}\), and low income \(^{83}\).

e) Co-morbidities

Depression is the number one illness that has been found to be highly co-morbid with several other physical and psychiatric illnesses \(^{86}\). Studies abound with statistics comparable in developed and developing countries on the prevalence of depression with other mental disorders, cardiac illnesses \(^{77}\), neurologic problems \(^{87}\), autoimmune diseases \(^{76}\), etc.
2.3 Depression in Old Age

2.3.1 Overview

Depression in one of the commonest psychiatric disorders among elderly patients\textsuperscript{20,61,88}, though reported to be more common in the younger age groups, the increasing population of the older age groups has led to a rise in its incidence and prevalence in elderly\textsuperscript{89}. However, presenting symptoms may not readily meet the criteria for major depression because of the atypical features which are commonly seen in old age and the greater presentation with co morbid illnesses which masks the illness itself and leads to its under diagnosis and inadequate treatment\textsuperscript{90,91}.

Depression is of great public health concern because of the expected rise in elderly population and its associated disabilities, co morbidities and significant effects on quality of life of those affected in old age. Currently, it is the leading cause of disability worldwide in terms of total years lost due to disability\textsuperscript{71}. When left untreated or poorly treated it is associated with increased incidence of suicide in older age group\textsuperscript{66}. It has also been proven to increase the economic burden of care in old age\textsuperscript{92} in terms of direct family-borne cost on hospital visits, admissions and drugs and impacts on the national health budget by increasing utilization of medical services and healthcare costs\textsuperscript{93,119}.

2.3.2 Epidemiology

Geriatric depression has been widely studied in several countries in different settings with results consistently showing a high prevalence. In Nigeria it is recognized as the leading contributor disability adjusted life years which is expressed as the number of years lost due to ill health, disability or early death\textsuperscript{179}. One study in Sao Paulo reported that the impact of depressive symptoms contributes as much as the actual diagnosis of depression to the population burden of functional disability in the elderly\textsuperscript{19}.
Rates of depression in old age vary widely in different settings (community, primary care, hospitalized) and areas of civilization/urbanization, but there were no significant difference in its prevalence in terms of race or ethnicity. A consistent finding is the fact that the rate of significant depressive symptoms is higher than the rate of diagnosable symptoms in old age. Several studies have identified the female older age group as the most affected by depression in every population with factors ranging from the fact that they tend to internalize their symptoms to issues of hormones and the fact that women tend to have a higher life expectancy when compared with males of same age group.

2.3.3 Prevalence of depression in old age

Most cases of depression in old age are first seen at primary care and several studies have been conducted in primary care settings with reported prevalence between 10% and 55%. In a primary care setting in Ibadan Nigeria, the rate of geriatric depression was reported as 7.4% with only 1.5% of them meeting the criteria for severe depression. This rate is comparable to that in most developed countries. In community studies however prevalence is slightly lower with higher number of those with depressive symptomatology than those meeting the criteria for depression. The reported prevalence is between 8% and 20% in communities. In a large scale community study conducted in Ibadan and Indianapolis, the report of total prevalence in both sites were comparable with 12.3% with mild depression in Indianapolis and 19.8% in Ibadan. Those severely depressed were 2.3% in Indianapolis and 1.6% in Ibadan. This study result further shows the similarity in different countries with comparatively low income earners and high income earners and the need for adequate recognition of its impact on the health burden of developing countries.
Geriatric depression has been further studied among those with co morbid illnesses, those in hospitals and nursing homes. Rates as high as 40% has been reported in the hospitalized\(^{105}\), but lower rates of 12%\(^{106}\), 22%\(^{101}\) had been earlier reported. This can be attributed to the increasing population of the elderly; better screening methods and improved ability of doctors to identify and diagnose patients with depression. In a recent study in Nigeria by Uwakwe (2000b)\(^{61}\), the overall prevalence of psychiatric morbidity was studied in elderly patients admitted to the non psychiatric wards. A total prevalence of 45.3% of psychiatric morbidity was found with depression being the commonest disorder of all. However the only study available in Nigeria that was conducted among nursing home residents\(^30\) found dementia to be more prevalent than depression and this may be explained by the fact that more patients with cognitive deficits in old age are institutionalized in Nigeria and the under diagnosis of depression and its subtle symptoms which are regarded as normal aspects of development in old age in this environment.

2.3.4 Factors associated with depression in old age

Some factors have been consistently identified to be associated with the prevalence of geriatric depression across different cultures and economies, these include

**Socioeconomic factors:** low income, poverty\(^{21,28,107}\), rural living\(^{21,32,100}\). These factors either singly or acting together have been found to be a common denominator in many communities and the impact of low socioeconomic status affects even the prognosis in those with significant depression.

**Living arrangement:** the loss of loved ones with advancing age results in loss of companionship. And the disintegration of extended family living the world over has greatly affected our aged population as most children are migrating to source for better livelihood. This has been shown to impact greatly on the complaints of depressive symptoms in the elderly\(^{107}\). A
study conducted in 2009 also reports clearly that the presence of more than one confidant is a protective factor against developing depression in old age \(^{21}\).

**Chronic health conditions:** presence of co morbid physical illnesses is a strong contributory factor in the development of depression in old age. Most of these illnesses are disabling in those affected already and this gives room for the development of symptoms of depression and adding to this is the under recognition of the early symptoms of depression in patients with comorbid illnesses \(^{21,100}\). A poor assessment of personal health is another important factor that has been seen in old age to be associated with depression \(^{28}\).

**Functional disability and poor quality of life:** disability in old age is becoming an important factor in assessment of health with advancing age. Disability in the elderly usually results in reduced self esteem and increased dependency and this is often associated with subjective report of poor quality of life in them. A recent report in 2013 was able to establish the association between disability, quality of life and depression in elderly individuals \(^{102}\) as against an earlier study in 2009 by Rajkumar et al \(^{21}\) in which the relationship was found to be insignificant.

### 2.3.5 Etiology of depression in old age

First onset depressive illness in old age (after age 65 years) is not as common as early onset (before age 65 years). There are some identified etiological factors that have been clearly linked with its incidence and they are similar to causes of depression in the younger age group. However in discussing etiology of depression in old age, it is important to note the complementary effects of biological, psychological and social factors. For example, the vulnerability to stressors in the environment may be due to interactions with underlying biological mechanisms which are less functional with advancing age.

a) **Biological factors**
Genetics: The role of genetics in geriatric depression is slightly less than that in early onset. This was supported by a recent study by Johnson et al in 2002\textsuperscript{108}; he observed 2169 Danish twins for evidence of depression in the second half of their lives and reports that though the frequency of self-reported depressive symptoms increased with age in them, their heritability did not.

Neurotransmitters: low levels of cerebrovascular 5-hydroxyindoleacetic acid have also been found in elderly depressed patients who commit suicide\textsuperscript{109}.

Vascular factors: According to Alexopoulos\textsuperscript{110}, cerebrovascular disease may predispose to, precipitate or perpetuate geriatric depressive disorder and is associated with their presenting with symptoms of apathy, motor retardation and significant cognitive impairment. This is due to disruption of the prefrontal systems and their pathways by single lesions or accumulation of lesions seen as white matter hyper intensities on MRI scan, a result of ischemia and infarctions\textsuperscript{111}. In recent studies\textsuperscript{112, 113}, the association of white matter abnormalities with polygenic contribution in major depressive disorders irrespective of the age of the individual is further shown. These findings further support an earlier theory of a bidirectional relationship between onset of late life depression and vascular diseases\textsuperscript{111}.

b) Psychosocial factors

Personality – in a study by Morse & Lynch\textsuperscript{117}, it was reported that older patients with a personality disorder were four times more likely to experience depressive symptoms compared to those without a personality disorder. Some particular personality traits have been identified as having association with depression; these are neuroticism, hopelessness and ambivalence regarding emotional problems\textsuperscript{114}. The interaction of personality with other stressful life events and cognitive styles has also been found to increase the risk of depression in late life\textsuperscript{115}. 
Socioeconomic status – a study among community dwelling adults above the age of 50 years reported that low socioeconomic status was associated with the incidence and persistence of depression \(^{116}\). Rural dwelling, poverty, low income, and poor access to health services have been identified as factors in the developing nations as important risk factors in development of depression in old age \(^{28,32,100}\).

Poor social support – loss of loved ones, living alone, divorce/separation or widowhood all contribute to the incidence of depression in old age \(^{21,118}\).

2.3.5 Clinical features of depression in old age

Symptoms of depression in the younger age group are not very distinct from those seen in old age \(^{120}\). There are however some striking symptoms in the elderly, these can be with respect to mode of presentation, severity of symptoms and frequency of relapses \(^{34,121}\). The core symptoms of depression include: persistent low mood, reduced energy and loss of interest in usual pleasurable activities are often times regarded as part of normal aging and thus most patients do not present or the diagnosis is missed by practitioners \(^{120}\).

Somatic complaints are quite common in old age and often may be the presenting symptoms seen in a depressed elderly \(^{122,123}\). These symptoms are also associated with misdiagnosis and increased use of health care services. Common examples of such complaints include sleep disturbances, reduced libido, poor appetite, crawling sensations or other bodily preoccupations.

The presentation of psychotic symptoms in geriatric depression is also sometimes different with patients having delusions of poverty or impoverishment, delusions of physical illness with decay of body organs (nihilistic delusions), delusions of guilt \(^{124}\). These psychotic symptoms also often predict a worse prognosis in such patients \(^{125,126}\).
Depressive pseudodementia which describes the cognitive difficulties seen in geriatric depression has been reported in about 20 to 50% of geriatric patients. It presents as conspicuous difficulty with remembering and concentrating on things and careful examination is often needed to differentiate it from early dementia. Studies have shown the relationship that exists between depression and dementia. It is seen as a heterogeneous disorder in which patients can have it as a risk factor for dementia or they may coexist. In the study done by Lee & Lyketos in 2003, 50% of those with dementia had clear depressive symptoms.

Psychomotor retardation is also a common symptom in the elderly and may present as reduced interest in usual activities and problems with activities of daily living, it sometimes may manifest as psychomotor agitation. Its presence is associated with a greater severity of depression and it indicates a poor prognosis for the patient. Suicidality is another form of presentation in elderly depressed individuals and a study by Raue et al reported that late onset depression is a significant risk factor for suicidal ideation.

### 2.4 Quality of life in old age

Growing old is an expected process in every living organism. The process is however associated with reduction in biological system functions and reduced ability to adapt to changing environmental factors and a poor capacity for stress management. Advancing age is also associated with higher prevalence of chronic physical illnesses leading to various disabilities and concomitant limitations in social activities, all of these may result in an observable reduction in overall quality of life in this population. The World Health Organization defines Quality of Life (QOL) as “an individual’s perception of his or her position in life in the context of the culture and value systems in which he or she lives and in relation to his or her goals, expectations, standards and concerns”. This definition takes into perspective the psychological state,
dependence level, social relationships and features in the environment of the individual. Clearly several factors contribute to a person’s sense of wellbeing such include physical health status, a secure social environment, financial security, spirituality, strong and supportive relationships and all of these factors are interrelated. Most people in old age are lacking in one of these factors or another and this affects their interpretation of quality of life in terms of its richness, or the sense of contentedness/fulfillment that they may feel.

And according to Erik Erikson, this stage of late adulthood (65 and beyond) is when productivity reduces and thoughts dwell on past achievements and the individual is able to bring forth feelings of ‘integrity’. However, feelings of dissatisfaction will result in ‘despair’ which is associated with depression in old age and reduced quality of life. This is again summed up by Kimmel in the book Adulthood and Aging, 1990\textsuperscript{135} by the statement “if the elderly subject manages to build a secure sense of the ego and a perception of his/her legacy, be it through the children or the work, he/she maintain an ego integrity, whereas the incapability to provide for a solution to this conflicts results simultaneously in disappointments with his/her own self and therefore, despair”.

Health related quality of life on the other hand refers to a subjective multidimensional assessment of the physical, mental, emotional, and social domains of life. It focuses on the impact of health status on the QoL of the individual and assesses the well being. It has been studied in geriatric populations with different physical illnesses and some psychiatric disorders also especially dementia\textsuperscript{136, 137}. And several of the studies showed the increased reports of reduced quality of life particularly in those with physical illnesses with co morbid depressive symptoms than in those without any physical illness\textsuperscript{136,138}. This therefore shows that presence of
depressive symptoms in old age affects the physical health of these patients and also their psychosocial health.

Quality of life affects mortality rate in the elderly population\textsuperscript{139} because it informs how an elderly person views his life both in the past and present, how he views the impact of his health on his functioning and productivity in old age and how he addresses these issues. A poor assessment of quality of life may lead to thoughts of suicide which is shown to be common in depressed elderly patients. Efforts at identifying factors that influence quality of life in elderly are important to help improve delivery of health care services to this population so as to ensure that ageing is a fulfilling period for these individuals.\textsuperscript{139}

### 2.4.1 Measuring quality of life in old age

This can be done either objectively (instrument ratings) or subjectively (patients’ report). Subjective measures are very important as they assess the individuals experience or response to survey questions such as “how happy are you with your life?” the responses are numerically scored (e.g. very satisfied to very dissatisfied). However because individuals are allowed to rate their own assessment of their situations, it is affected by the possibility that the results may not be readily comparable between 2 individuals thus making its interpretation difficult\textsuperscript{140}. Objective measures however do not accurately report patients experience or feelings and are regarded as better indicators of overall wellbeing and QOL of patients\textsuperscript{141}.

Each of these approaches has its strength and weaknesses and may be suitable for different circumstances. Studies have shown that using subjective measures is necessary to complete the QOL picture and to help with the interpretation of objective data\textsuperscript{142} and that objective measures are better at detecting effects of treatment. A review of several literatures\textsuperscript{143} reports that most studies are conducted using generic based instruments and they report that a relationship exists
between QoL and disability or disease severity. The QoL has been found to be quite dynamic from one person to another and often times the need for third party information may also affect the report for those who may be unable to communicate adequately.

### 2.4.2. Factors determining QOL in old age

Old age should be an enjoyable and fulfilling period for individuals and efforts at making this possible is the goal of ‘active ageing’ that is being propagated by the WHO and efforts to achieve this are in place in most developed countries. Several factors including demography, culture, health and social support have been identified as important in assessing the quality of life of elderly individuals. The expression of quality of life is subjective; this explains why individuals in the same environment may give varied reports on their quality of life. The age of the patient, financial status, self perception of health status, presence of social support, presence of physical illness, level of functioning, have been variously identified as important determinants of QoL. It was however noted that no single factor can be adjudged as being the most important determinant. It is clearly multifactorial and differs from one to another depending on the population being studied and parameters used as references in such studies as presence of an illness in a depressed elderly individual will affect his or her interpretation of QoL which may be further dependent on the type of social and financial support available.

In Nigeria, the poor economy has impacted greatly on the population (both young and old) and the lack of government participation and input in health care delivery for the older population is a significant factor in assessing QoL. Adding to this is the disintegration of family support systems in our society as more children leave home and their aged parents to source for a better livelihood. Health status and its perception is also an important factor in Nigeria, this is
because of the increased prevalence of chronic illnesses in old age such as hypertension, diabetes mellitus, and arthritis. The presence of these illnesses and poor access to health care services and the out-of-pocket mode of payment for health services all combine together to affect the QoL of the aged. Retirement from active service is at age 60 years in Nigeria and the perception that the elderly as unproductive further affects their social participation in the communities as their roles becomes passive with advancing age 146.

Depression is however a very significant health related factor in determining QoL of elderly individuals and it has been widely reported in several countries and among the medically ill, institutionalized or hospitalized patients as being associated with an overall poorer functioning in affected individuals 147, 148.

2.5 Depression, Disability and Quality of Life in old age

Many studies have looked at the relationship between depression and quality of life in old age. There is a noticeable bidirectional relationship between both; depressed elderly individuals with symptoms of low mood and loss of interest in pleasurable activities may report a poor QoL 149. Thus, having a health related poor QoL may predispose to developing a depressive illness in old age. Studies by da Silva Lima et al 150 and Chachamorich et al 151 respectively reported that even subsyndromal depression (i.e. those who do not meet the criteria for diagnosis of major depression) is associated with significant reduction in all QoL domains and functional disability 152, 153.

Yu-san Chang et al 154 conducted a cross sectional study among elderly patients with depression and compared them with those without depression but with similar demographic characteristics. It reported that a greater number of those with physical diseases (p< 0.001), or more severe depression had lower QoL scores than the controls. The severity of the depression correlated
negatively with 4 domains (physical health, psychological health, social relationships and environment) of the WHOQOL-BREF (p< 0.005, p< 0.001, p< 0.05, p< 0.001) in those with depression. This study was able to establish that the degree of severity of depression is associated with QoL in old age. It has been reported also that appropriate treatment of depression in old age resulted in improvement of symptoms and an accompanying improvement in QoL in several domains\textsuperscript{155} thus emphasizing the need for proper diagnosis and treatment in affected individuals. Other significant associations with QoL in depressed elderly are advancing age, female sex\textsuperscript{155}, low educational status, pain, and presence of chronic physical illnesses\textsuperscript{181}.

Disability refers to ‘any restriction or lack resulting from any impairment of ability to perform an activity in the manner or within the range considered as normal for the individual’\textsuperscript{162}.

Depression is reported to be significantly associated with disability irrespective of the age of affected individual; it is the leading cause of disability worldwide\textsuperscript{34, 89, 179}. Of particular significance is the effect of depression in the older age group and its impact on their level of functioning in different domains. In Nigeria available studies report that its impact is more in females, those in urban areas (because of reduced social support), those who might already be disabled due to physical ill health such as stroke survivors and those with chronic painful conditions as these co-morbid conditions greatly affect the individuals’ abilities independent of depressive symptoms in them\textsuperscript{146} and those with cognitive difficulties. Most studies reviewed were able to identify these risk factors but results varied because of the populations studied and screening instruments used. Of note however is the fact that the disability in old age is worse in those with depression than in those diagnosed with several other chronic physical illnesses\textsuperscript{156}.

Impairment in activities of daily living is significantly associated with depression in all ages but global disability (communication, self-care, relationships, society participation, and activities of
daily living) is seen more in those with late onset depression. Old age depression and associated disability is also important because of its association with increased morbidity and mortality and poorer quality of life and increased need for care.

### 2.6 Burden of Care and quality of life of caregivers of depressed elderly patients

Care giving means providing care. This usually involves the physical, psychological, emotional and financial support of those with chronic illnesses by family members and close relatives (informal caregivers). These individuals are not particularly trained in care giving and are mostly unpaid and these caring duties are added onto their normal daily work routine. Also of note is the fact that most care recipients’ are old people with disabilities which may vary from dealing with basic activities of daily living to attending to their financial matters often due to a chronic physical or mental illness.

In developed countries, it is reported that more old people are now receiving home based care from their relatives and the number is growing annually due to the increased life expectancy. This growth in number of old people is becoming noticeable in sub-Saharan Africa and support for this age group has been mostly by the extended family system over the years and this is expected to continue in the years ahead. However, urbanization and the need to source for a better life has led to the disintegration of this family system and care of the elderly is left in the hands of aged spouses or relatives or children who may have other physical or financial or emotional problems which makes care giving stressful and adds to the burden of care in these individuals.

Burden of care in care givers can be defined as the presence of problems, difficulties and adverse effects which affects the lives of caregivers. It can be assessed as factors related to the patient and those related to the care giver themselves. Some factors that relate to the patient include
significant cognitive deficit, disability in areas of activities of daily living, and behavioral problems such as violence or undue aggression or night disturbance. For the carer however identified factors include age, female gender, educational level, financial status, presence of any illness, lack of social support.

The effects of burden of care can be psychological/emotional, psychosocial or physical and can be assessed either objectively or subjectively. The objective assessments relate more with the physical effects of burden of care which may include loss of source of income, stress at home, inability to participate fully in extra social activities. The subjective reports are those admitted to by the carers and may include guilt feelings, anxiety, and feelings of embarrassment in social situations involving the patient.

Studies have shown that care giving has positive (personal fulfillment and satisfaction), negative (physical, psychological, and financial) burden and an increase in risk of mortality. Greater emphasis has been on the negative aspects and it has been shown that there is an urgent need for informal carers in our environment to be catered for appropriately and community participation is to be encouraged.

Of note also is that most work done on the carers of elderly is on those with diagnosis of dementia and this has shown that with time and worsening symptoms in the patient the burden experienced by the carer increases.

However looking at care giving of psychiatric patients in general, 2 studies from Lagos Nigeria reports the presence of significant psychological distress, psychopathologies and more than average presence of burden of care in the participants. Majority of care givers were found to be females with low educational background and unemployed and these are factors associated with a subjective report of poor quality of life.
and increased burden in them $^{167}$. A particular study in Nigeria reported that higher number of years of education is correlated with increased carer burden $^{166}$. This is explained as an educated person being unable to fully apply himself in his job because of the increased demand by the care recipient. The increased burden has been associated with the high incidence and prevalence of psychiatric morbidities in them with depression and anxiety being the commonest $^{54}$.

Subjective reports on QoL of care givers of those with cognitive deficits (dementia) have been studied and it highly correlated with depression in them with majority reporting a poor overall QoL $^{171, 172}$. A study on depression in old age to assess its impact on caregivers reported in line with most other studies that females were more involved in care giving roles than males and comparing them with those caring for elderly patients without depression, they reported poorer quality of life and a poor mental state $^{173}$.

2.7 Relevance of the study.

Depression in old age is significantly associated with morbidity and mortality and affects functioning in terms of disability and reporting a poor quality of life. And it has been reported that the prevalence of depressive symptoms not meeting the criteria for diagnosis is quite high and has a comparable impact on quality of life in old age. The preparedness of developing countries like Nigeria for old age is of great concern, particularly in the area of depression and its impact on carers. Studies in Nigeria abound in community, primary care settings, hospitals on the prevalence and factors associated with old age depression but none has examined its impact on the quality of life on the care givers $^{27, 32}$.

This study will attempt to identify factors associated with disability and quality of life in this population in Lagos Nigeria and how this impacts on the burden of care giving and quality of life
of the carers. This will help in raising awareness for increased attention to depressed elderly and their carers and will aid in planning care for the depressed elderly in our communities.
AIM AND OBJECTIVES

3.1 General Aim

The general aim is to assess the prevalence of geriatric depression in a general outpatient department (GOPD) of a teaching hospital in Lagos and determine the quality of life of the affected individuals and that of their informal caregivers.

3.2 Specific Objectives

The specific objectives are:

1. To determine the prevalence of depression and its correlates in the elderly presenting at the GOPD
2. To assess the subjective quality of life (QoL) of these patients and its association with disabilities in them
3. To assess the burden of care and quality of life of carers of those with depression in old age
METHODOLOGY

4.1 Study Location

This study will be conducted in Lagos State. Lagos State is the most populous state in Nigeria with an estimate of about 17 million dwellers and an estimated older population of about 3.1% (570,000)\(^{15}\). The outpatient department of the Lagos State University Teaching Hospital (LASUTH), the centre for the study, receives an average of about 10,000 patients per day of all age groups because of its central location and being the recipient tertiary hospital for the general hospitals in the state. An average of about 250 patients above 65 years of age is seen in the out-patient unit per month.

4.2 Participants

4.2.1 The Index Subject

The participants that will be recruited for the study will be those above 65 years attending the general outpatient clinic of LASUTH

Inclusion criteria will be

- Patients above age 65 reporting at the GOPD
- Patients who are not too ill, who will be able to complete the questionnaires (to be assessed after a brief physical examination)

4.2.2 The Primary Caregivers

If the patient is accompanied by a primary caregiver, he/she will be recruited for the study. If patient is however alone, he will be asked to mention his primary caregiver and he/she will be invited to the hospital within 2 weeks (or visited at home) for participation in the study. The
primary caregiver is defined as someone who is directly involved in the care of the index patient (financially, physically, and psychologically).

4.3 Study Design

The study is a cross-sectional descriptive survey

4.4 Sample Size

This is determined using the formula by Daniels, 1999 45

\[ N = \frac{Z^2 \times P(1-P)}{d^2} \]

\( N = \) Sample size

\( Z = \) Statistics for a level of confidence (95%)

\( P = \) Expected prevalence or proportion

\( d = \) Level of precision

For this study, prevalence is calculated as 14% an average of values available from 2 studies in the country on the prevalence of geriatric depression in primary care 7.4% 28 and 19.8% in community sample 27.

\[ N = 1.96^2 \times 0.14(1-0.14)/0.05^2 \]

\[ N = 3.8416 \times 0.14 \times 0.86/0.0025 \]

\[ N = 185 \]
A sample size of 185 was calculated and a 10% attrition rate will be added to make up for those questionnaires that may be lost and patients that may not complete the interviews. This gives a total of 205 participants.

4.5 Ethical Approval

The study proposal will be presented for approval by the Health Research and Ethics Committee of the Lagos State University Teaching Hospital.

4.6 Data Collection

A pretested interviewer administered structured questionnaire will be administered by the researcher with some trained assistant researchers at the LASUTH general outpatient department.

4.7 Instruments

Different sets of questionnaires will be used for the recruited elderly patients and their primary caregivers with confidentiality maintained.

4.7.1 Elderly patients (INDEX PATIENTS)

A) Sociodemographic details

This will include information on the

1) Age
2) Sex
3) Marital status
4) Highest level of education
5) Former occupation/present occupation
6) Source of income and amount per month
7) Present living conditions (duration of stay, address, living alone/with relatives)
8) Availability and relationship with carers
9) Bereavement in the past 6 months
10) Reasons for hospital visit in the past 1 month/6 months/1 year
11) Any painful chronic illness already diagnosed?
12) Any routine medications being used?
13) Past history of psychiatric illness
14) Overall assessment of health in the past 12 months (good, fair, poor)

The above factors have been variously identified in studies as being related to prevalence of old age depression in Nigeria 16, 32, 36.

b. **Mini International Neuropsychiatric Interview (MINI)**

The MINI is a short diagnostic structured (requiring YES/NO answers) clinical interview which enables researchers to make diagnosis of psychiatric disorders according to DSM-IV. It focuses on the existence of current disorders and has been validated by comparing it with SCID (Structured Clinical Interview for DSM-III-R) and CIDI (Composite International Diagnostic Interview) and found to have high validity and reliability scores 46. Another advantage over the other 2 is that it can be administered in a shorter period of about 15 minutes 46. It however requires brief training before use and the researcher will be adequately trained by the supervisors for the use of this instrument. The MINI has been used in various studies in Nigeria 48-49.
c. Geriatric Depression Scale

The scale was initially developed with 30 questions in 1982 but was later revised to a shorter version with 15 questions in 1986 by Yesavage et al. It is a self-report assessment questionnaire that is used to identify depression in the elderly. Of the 15 questions on the scale, 10 indicate depression when answered positively while questions 1, 5, 7, 11, and 13 indicate depression when answered negatively. The scores are interpreted as normal (0-4), mild (5-8), moderate (9-11), and severe (12-15) depending on age, education and complaints of the patient. The scale can be used with healthy, medically ill and mild to moderately demented patients who have short attention span and/or feel easily fatigued. It takes about 5 to 7 minutes to complete. It has been validated for use in Nigeria.

d. WHO Quality of life scale – Brief Version (WHOQOL-BREF)

This is a 26 item generic questionnaire; a shorter version of the WHOQOL-100 scale. It is available in several languages and useful in different cultural settings. It is made up of domains/dimensions and facets/sub-domains. It has 4 domains: physical health, psychological health, social relationships and environment. Each domain has sets of questions that make a total of 24 at the end but there are 2 items that are examined separately; the first item assess an individual’s overall perception of quality of life while the second determines an individual’s overall perception of his/her health. Each item is scored between 1 and 5 and a high total score indicates better quality of life for the patient. It has been used in several studies and also validated in Nigeria.
e. **WHO Disability Scale II (WHODAS II)**

It is a 12-item instrument designed to measure disability irrespective of health related etiology. It assesses functioning in 6 domains; understanding and communicating; getting around; self-care; getting along with people; life activities; and participation in society. These domains reflect 2 dimensions of the International Classification of Functioning, Disability and Health model: activity limitation (understanding and communicating, getting around, and self care) and participation (getting along, life activities, and participation in society). Studies have shown that it is an effective and reliable instrument to assess disability, individual functioning and participation levels. It consists of 12 Likert formatted questions that asks about the individuals difficulties over the past 30 days. The final score is calculated using a standardized SPSS algorithm and ranges from 0 to 100 with higher scores indicating greater disability.

It has been validated for use in Nigeria \(^\text{36}\).

### 4.7.2 Caregivers

**a) Sociodemographic Details**

This will include questions on

1. Age
2. Sex
3. Occupation
4. Marital status
5. Level of education
6. Average monthly income
7. Number of dependants

8. Relationship with elderly (index) patient

9. Average number of hours spent with patient daily/weekly

10. Other support for care

11. Own health status/ medical health problems

12. Perceived quality of life in the past 12 months (fair, good or poor)

b) General Health Questionnaire 12

A self administered questionnaire developed by Goldberg and Williams, ideal for identifying non-psychotic and minor psychotic disorders to help inform further intervention. It is a measure of current mental health and sensitive to short term psychiatric disorders.

It focuses on 2 major areas- the inability to carry out normal functions and the appearance of new and distressing experiences. It was originally designed as a 60 item questionnaire but shorter versions (GHQ-30, GHQ-28, GHQ-20 and GHQ-12) are now available. The 12 item version has been shown to be as effective as the 30 item version. Each item is rated on a 4 point scale and it takes an average of 5 minutes to complete. Scoring is done based on the 4 possible answers for each item. This can either be bi-modally (i.e. 0-0-1-1) or as a Likert scale (i.e. 0-1-2-3), items 2, 5, 6, 9, 10 and 11 are reversed scored (i.e. 1-1-0-0 or 3-2-1-0). Bimodal scoring gives a range of 0 to 12 while the Likert scoring is between 0 and 36. A high score indicates there is a health related problem. The GHQ-12 has been validated as a good screening tool in Nigeria in various clinical settings and a cut-off score of 3 and above is indicative of probable psychiatric morbidity.
c) WHO Quality of life – Brief Version (WHOQOL-BREF)

Details of this instrument have been noted above.

d) Zarit care givers burden scale

A self report questionnaire used to measure the subjective burden among caregivers of elderly patients with chronic illnesses. It is a 22-item questionnaire that measures burden associated with functional and behavioral impairments and home care situation. The item focuses on affective response of the care giver. Each question is scored on a 5 point Likert scale ranging from never to nearly always present. The total obtainable score is between 0 and 88; 0 to 20 has little or no burden, 21 to 40 has mild to moderate burden, 41 to 60 moderate to severe and 61 to 88 has severe burden. The Zarit Burden Scale addresses factors such as physical and psychological health of the individual, finances, social life, and relationship with the patient. The scale has been shown to have good construct validity and an excellent internal consistency. It has been used previously in Nigeria \textsuperscript{54,58}.

4.8 Procedure

All participants will be informed about the aim and objectives of the study and verbal and written consents will be properly taken and documented. The questionnaire may need to be translated (by back translation method) to Yoruba. Consenting elderly patients will be administered the sociodemographic questionnaire first. Then they will be administered the GDS, WHOQOL-Bref and the WHODAS-II scales by recruited research assistants (who would have had training in the administration of the instruments with good inter-rater reliability).
The researcher (who will be blind to the scores of the patients on GDS) will now administer the MINI to the patients.

For the carers, research assistants will also administer the sociodemographic questionnaires. Presence of psychopathology will be assessed with the GHQ-12, the quality of life with the WHOQOL-Bref and the overall care giving burden with the Zarit burden scale.

The patients and the caregivers will be separately interviewed.

Patients found to have high scores of depression with the MINI among the elderly and those with identified psychopathology among the carers will be invited to the psychiatric department of the hospital and will be offered treatment.

### 4.9 Statistical Analysis

Data will be analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Data will be coded and entered and will be cleaned before analysis. The Dependent variable will be Diagnosis of Depression (as indicated by MINI). Frequencies (%), mean (SD) and median will be used to describe data. Independent sample t-test, Fisher’s exact test and Pearson’s Chi square will all be used in calculating differences between groups. To evaluate for independently significant variables, a Logistic regression analysis will be done with Odds ratio (OR) and 95% confidence interval (95% CI) calculated. All the tests will be two-tailed and the level of significance will be set at 0.05.
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**APPENDIX 1**

**RESEARCH INFORMATION (Patient)**

**Study title:** Depression in Old Age: Prevalence, Quality of Life and Impact on Informal Caregivers in Lagos Nigeria.

**Invitation:** I would like you to take part in a research study. This leaflet summarizes the key points you need to be aware of. Please take time to read this information carefully and feel free to ask the Researcher (details below) for more information if you are not clear.

**Purpose of Study:** This study aims to assess the presence of depression in the elderly patients in the outpatient unit of the hospital and to examine the effect it has on their quality of life and that of their care givers.

**Why have I been invited?** Old age is an important part of life. A lot of health issues are worrisome at this age and old age depression is particularly associated with several other illnesses in old age. This is why the study is designed to target the elderly so as to be able to identify those who may be depressive symptoms and help at early identification and proper treatment to ensure a good quality of life for both the patient and those involved in their care.

**Do I have to take part?** No, it is up to you to decide. It is entirely optional and deciding not to participate or to withdraw from the study will not affect your healthcare in any way.

**What will happen if I agree to take part?** 1. The study involves completing a questionnaire before your clinic consultation with the doctor. It may also involve a detailed history taking and relevant physical examination.

2. The study will not change your current healthcare. The results of the study will be analysed by the Research team but will not influence the treatment you receive.

3. As this is a new study, the results and clinical data will be used for analysis and publication. Your anonymity is of course assured.

**What are the possible benefits, disadvantages and risks I should know about before taking part?** You need to complete a short questionnaire before your consultation and this may/may not
result in a delay.

**Duration & cost of participation.** The interview will take about 20 minutes and is at no added cost to you if you decide to participate.

**Will my taking part in the study be kept confidential?** All information that is collected about you for the study will be kept confidential. Any results from the study that are published will be completely anonymous.

**Who has approved the study?** The Lagos State University Teaching Hospital (LASUTH) Research Ethical Committee has approved this study.

Thank you for your participation and cooperation.

Dr Olajumoke B Adelayi

Department of Psychiatry, LASUTH, Ikeja.

olajumokemi@yahoo.com
RESEARCH CONSENT FORM (Patient)

Research Study Approval Body: The Lagos State University Teaching Hospital (LASUTH) Research Ethical Committee.

Patient Identification Number for this study: .........................

Title of Project: Depression in Old Age: Prevalence, Quality of Life and Impact on Informal Caregivers in Lagos Nigeria.

Contact Person: Dr Olajumoke Adelayi (Department of Psychiatry, LASUTH Ikeja)

Please write in the box 1 if you give your consent and 0 if you don’t.

1. I confirm that I have read and understand the information sheet dated version ................ for the above study. I have had the time and opportunity to consider the Information, ask questions and have had these answered satisfactorily. □

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. □

3. I understand that relevant sections of any of my medical notes and data collected during the study may be looked at by individuals from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. □

4. I confirm I am fully aware that the research associated with this study is newly performed at General out Patient Department of LASUTH and the results will not affect clinical care by my doctor. □

5. Having been assured of total anonymity, I consent to the collected data being used for analysis, presentation and publication. □

6. Knowing all the facts, I agree to take part in the above study. □

Name of Patient___________________________________________________________
Date_________ Signature______________________________________________

Name of Doctor___________________________________________________________
Date_________ Signature______________________________________________
APPENDIX 3

RESEARCH INFORMATION (Caregiver)

Study title: Depression in Old Age: Prevalence, Quality of Life and Impact on Informal Caregivers in Lagos Nigeria.

Invitation: I would like you to take part in a research study. This leaflet summarizes the key points you need to be aware of. Please take time to read this information carefully and feel free to ask the Researcher (details below) for more information if you are not clear.

Purpose of Study: This study aims to assess the presence of depression in the elderly patients in the outpatient unit of the hospital and to examine the effect it has on their quality of life and that of their caregivers.

Why have I been invited? Old age is an important part of life. A lot of health issues are worrisome at this age and old age depression is particularly associated with several other illnesses in old age. This is why the study is designed to target the elderly so as to be able to identify those who may be depressive symptoms and help at early identification and proper treatment to ensure a good quality of life for both the patient and those involved in their care.

Do I have to take part? No, it is up to you to decide. It is entirely optional and deciding not to participate or to withdraw from the study will not affect your healthcare in any way.

What will happen if I agree to take part? 1. The study involves completing a questionnaire before your clinic consultation with the doctor. It may also involve a detailed history taking and relevant physical examination.

2. The study will not change your current healthcare. The results of the study will be analysed by the Research team but will not influence the treatment you receive.

3. As this is a new study, the results and clinical data will be used for analysis and publication. Your anonymity is of course assured.

What are the possible benefits, disadvantages and risks I should know about before taking part? You need to complete a short questionnaire before your consultation and this may/may not
result in a delay.

**Duration & cost of participation.** The interview will take about 20 minutes and is at no added cost to you if you decide to participate.

**Will my taking part in the study be kept confidential?** All information that is collected about you for the study will be kept confidential. Any results from the study that are published will be completely anonymous.

**Who has approved the study?** The Lagos State University Teaching Hospital (LASUTH) Research Ethical Committee has approved this study.

Thank you for your participation and cooperation.

Dr Olajumoke B Adelayi

Department of Psychiatry, LASUTH, Ikeja.

olajumokemi@yahoo.com
APPENDIX 4

RESEARCH CONSENT FORM (Caregiver)

Research Study Approval Body: The Lagos State University Teaching Hospital (LASUTH) Research Ethical Committee.

Caregiver Identification Number for this study (as for the patient’s): ......................

Title of Project: Depression in Old Age: Prevalence, Quality of Life and Impact on Informal Caregivers in Lagos Nigeria.

Contact Person: Dr Olajumoke Adelayi (Department of Psychiatry, LASUTH Ikeja)

Please write in the box 1 if you give your consent and 0 if you don’t.

1. I confirm that I have read and understand the information sheet dated version ................ for the above study. I have had the time and opportunity to consider the Information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

3. I understand that relevant sections of any of my medical notes and data collected during the study may be looked at by individuals from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.

4. I confirm I am fully aware that the research associated with this study is newly performed at General out Patient Department of LASUTH and the results will not affect clinical care by my doctor.

5. Having been assured of total anonymity, I consent to the collected data being used for analysis, presentation and publication.

6. Knowing all the facts, I agree to take part in the above study.

Name of Patient__________________________________________________________
Date__________ Signature__________________________________________

Name of Doctor________________________________________________________
Date__________ Signature______________________________________________
### APPENDIX 5

#### SOCIO-DEMOGRAPHIC DATA (PATIENT)

**Study Title:** Depression in old age: Prevalence, Quality of Life and Impact on Informal Caregivers in Lagos Nigeria.

**Patient Study number** ........................................

**Date** ........................................

1. **Age in years**  
   a) 65 – 75  
   b) 75 – 85  
   c) > 86  

2. **Sex**  
   a) Male  
   b) Female  

3. **Marital status**  
   a) Married  
   b) Widow/Widower  
   c) Separated  
   d) Divorced  
   e) Never married  

4. **Highest level of education**  
   a) Non  
   b) Primary  
   c) Secondary  
   d) Tertiary  

5. **Former occupation** ........................................

6. **Present occupation** ........................................

7. **Source of income**  
   a) Pension  
   b) Children  
   c) Self  
   d) Relatives  

8. **Average income per month** ...............  

9. **Present living condition**  
   a) Living alone  
   b) With children  
   c) With relatives  
   d) Duration of stay in present accommodation (years)  
   e) Address (rural/urban)  
   f) Is the accommodation satisfactory?  

10. **Availability of carers**  
    YES/NO  

11. If **yes** to 10, what is the relationship with the carer?  

12. **Bereavements in the past 6 months?**  
    YES/NO  

13. **Reasons for hospital visit?**  

14. **Any medical illness already diagnosed?**  
    YES/NO  

15. **Past history of mental illness**  
    YES/NO  

16. **Overall assessment of health in the past 12 months:**  
    FAIR/GOOD/POOR
APPENDIX 6

SOCIO-DEMOGRAPHIC DATA (CAREGIVER)

Study Title: Depression in old age: Prevalence, Quality of Life and Impact on Informal Caregivers in Lagos Nigeria.

Caregiver’s Study number .............................................

Date ..............................................................

1) Age .............................................................................

2) Sex  a) Male                                   b) Female

3) Occupation ......................................................................

4) Marital status  a) Married b) Single c) Separated/ Divorced

5) Highest level of education  a) None a) Primary c) Secondary d) Tertiary

6) Average monthly income ..................................................

7) Number of other dependants .............................................

8) Average number of hours spent with patient daily/weekly .................

9) Other support for care of patient

10) Own health status  a) Good  b) Fair  c) Poor

11) Perceived quality of life in past 12 months  GOOD/FAIR/POOR
APPENDIX  7
MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW

Patient no.......................... Date....................

1. Have you been consistently depressed or down, most of the day, nearly every day, for the past two weeks?  YES  NO

2. In the past two weeks, have you been much less interested in most things or much less able to enjoy the things you used to enjoy most of the time?  YES  NO

*If YES to either B1 and B2 (or both) then continue to B3. If no to both B1 and B2 then stop here.*

3. Over the past two weeks, when you felt depressed or uninterested:
   
   Ai) was your appetite decreased or increased nearly every day?  YES  NO
   
   Aii) Did your weight decrease or increase without trying intentionally (i.e., by ±5% of body weight or ±8 lbs. or ±3.5 kgs., for a 160 lb./70 kg. person in a month)?  YES  NO
   
   B) Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?  YES  NO
   
   C) Did you talk or move more slowly than normal or were you fidgety, restless or having trouble sitting still almost every day?  YES  NO
   
   D) Did you feel tired or without energy almost every day?  YES  NO
   
   E) Did you feel worthless or guilty almost every day?  YES  NO
   
   F) Did you have difficulty concentrating or making decisions almost every day?  YES  NO

   G) Did you repeatedly consider hurting yourself, feel suicidal, or wish that you were dead?  YES  NO
APPENDIX 8

GERIATRIC DEPRESSION SCALE

INTERVIEWER ...........................................

DATE ...........................................

INSTRUCTION: CHOOSE THE BEST ANSWER FOR HOW YOU FELT OVER THE PAST WEEK.

1. Are you basically satisfied with your life? Yes/no
2. Have you dropped many of your activities and interests? Yes/no
3. Do you feel that your life is empty? Yes/no
4. Do you often get bored? Yes/no
5. Are you in good spirits most of the time? Yes/no
6. Are you afraid that something bad is going to happen to you? Yes/no
7. Do you feel happy most of the time? Yes/no
8. Do you often feel helpless? Yes/no
9. Do you prefer to stay at home, rather than going out and doing new things? Yes/no
10. Do you feel you have more problems with memory than most? Yes/no
11. Do you think it is wonderful to be alive now? Yes/no
12. Do you feel pretty worthless the way you are now? Yes/no
13. Do you feel full of energy? Yes/no
14. Do you feel your situation is hopeless? Yes/no
15. Do you think that most people are better than you are? Yes/no
APPENDIX 9

WHODAS 2.0 (WHO DISABILITY RATING SCALE 2.0)

<table>
<thead>
<tr>
<th>Patient no</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In the past 30 days, how much difficulty did you have in:</th>
<th>none</th>
<th>mild</th>
<th>moderate</th>
<th>severe</th>
<th>Extreme or cannot do</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Standing for long periods such as 30 minutes?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S2 Taking care of your household responsibilities?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3 Learning a new task, for example, for example, learning how to get to a new place?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S4 How much of a problem did you have joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S5 How much have you been emotionally affected by your health problems?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S6 Concentrating on doing something for ten minutes?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S7 Walking a long distance such as a kilometer (or equivalent)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S8 Washing your whole body?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S9 Getting dressed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S10 Dealing with people you do not know?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S11 Maintaining a friendship?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S12 Your day to day work/school?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| H1 Overall, in the past 30 days, how many days were these difficulties present? | Record number of days |
|                                                                             |                      |
| H2 In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition? | Record number of days |
| H3 In the past 30 days, not counting the days that you were unable, for how many days did you cut back or reduce your usual activities or work because of any health condition? | Record number of days |
APPENDIX 10.

WHOQOL-BREF (WHO QUALITY OF LIFE – BREF)

Patient’s no........................ Date.............................

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question, along with the response options. Please choose the answer that appears most appropriate. If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last 4 weeks.

<table>
<thead>
<tr>
<th>1. How would you rate your quality of life?</th>
<th>Very poor</th>
<th>poor</th>
<th>Neither poor nor good</th>
<th>good</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. How satisfied are you with your health?</th>
<th>Very dissatisfied</th>
<th>dissatisfied</th>
<th>Neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

The following questions ask about how much you have experienced certain things in the last 4 weeks.

<table>
<thead>
<tr>
<th>3. To what extent do you feel that physical pain prevents you from doing what you need to do?</th>
<th>Not at all</th>
<th>A little</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>An extreme amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4 How much do you need any medical treatment to function in your daily life?</th>
<th>Not at all</th>
<th>A little</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>An extreme amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5 How much do you enjoy life?</th>
<th>Not at all</th>
<th>A little</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>An extreme amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6 To what extent do you feel</th>
<th>Not at all</th>
<th>A little</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>An extreme amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Do you feel that your life is meaningful?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>How well are you able to concentrate?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>How safe do you feel in your daily life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>How healthy is your physical environment?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

The following questions ask about how completely you experience or were able to do certain things in the last 4 weeks.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>moderately</th>
<th>mostly</th>
<th>Completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Do you have enough energy for everyday life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>Are you able to accept your bodily appearance?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>Have you enough money to meet your needs?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>How available to you is the information you need in your day to day life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>To what extent do you have the opportunity for leisure activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Very poor</th>
<th>Poor</th>
<th>Neither poor nor good</th>
<th>good</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>How well are you able to get around?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>How satisfied are you with your sleep?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>How satisfied are you with</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>How satisfied are you with your abilities to perform your daily activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>18</td>
<td>How satisfied are you with your capacity for work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19</td>
<td>How satisfied are you with yourself?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>How satisfied are you with your personal relationships?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21</td>
<td>How satisfied are you with your sex life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22</td>
<td>How satisfied are you with the support you get from your friends?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23</td>
<td>How satisfied are you with the conditions of your living place?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24</td>
<td>How satisfied are you with your access to health services?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25</td>
<td>How satisfied are you with your transport?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

The following questions refer to how often you have felt or experienced certain things in the last 4 weeks.

<table>
<thead>
<tr>
<th></th>
<th>How often do you have negative feelings such as blue mood, despair, anxiety, depression?</th>
<th>never</th>
<th>Seldom</th>
<th>Quite often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td></td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Equations for computing domain scores</th>
<th>Raw score</th>
<th>Transformed scores 4-20</th>
<th>Transformed scores 0-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Domain 1</td>
<td>(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18</td>
<td>a. =</td>
<td>b. =</td>
</tr>
<tr>
<td>28</td>
<td>Domain 2</td>
<td>Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26)</td>
<td>a. =</td>
<td>b. =</td>
</tr>
<tr>
<td>29</td>
<td>Domain 3</td>
<td>Q20 + Q21 + Q22</td>
<td>a =</td>
<td>b =</td>
</tr>
<tr>
<td>30</td>
<td>Domain 4</td>
<td>Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25</td>
<td>a =</td>
<td>b =</td>
</tr>
</tbody>
</table>
APPENDIX 11

ZARIT BURDEN INTERVIEW

Caregiver’s no............ Date................................

INSTRUCTIONS

The following is a list of statements which reflect how people sometimes feel when taking care of another person. After each statement, indicate how often you feel that way: never, rarely, sometimes, quite frequently or nearly always. There is no right or wrong answer.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>never</th>
<th>rarely</th>
<th>Quite frequently</th>
<th>Nearly always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you feel that relative asks for more help than he/she needs?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Do you feel that, because of the time you spend with your relative, you don’t have enough time for yourself?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Do you feel stressed between caring for your relative and trying to meet other responsibilities for your family or work?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Do you feel embarrassed about your relative’s behavior?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Do you feel angry when you are around your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Do you feel that your relative currently affects your relationship with other family members?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Are you afraid about what the future holds for your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Do you feel that your relative is dependent on you?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Do you feel strained when you are around your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Do you feel that your health has suffered because of your involvement with your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Do you feel like you have not had much privacy as you would like, because of your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Do you feel that your social life has suffered because you are caring for your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Do you feel uncomfortable having your friends because of your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Do you feel that your relative seem to expect you to take care of him/her, as if you were the only one he/she could depend on?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Do you feel that you don’t have enough money to care for your relative, in addition to the rest of your expenses?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Do you feel that you would be unable to take care of your relative much longer?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Do you feel that you have lost control of your life since your relative’s death?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Do you wish that you could just leave the care of your relative to someone else?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Do you feel uncertain about what to do about your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Do you feel like you should be doing more for your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Do you feel that you could do a better job in caring for your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Overall, how burdened do you feel in caring for your relative?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 12

THE GENERAL HEALTH QUESTIONNAIRE

I would like to know if you have any medical complaints and how your health has been in general, over the last few weeks.

Care giver’s Number....................................

Date............................................

HAVE YOU RECENTLY:

<table>
<thead>
<tr>
<th>Question</th>
<th>Better than usual</th>
<th>Same as usual</th>
<th>Less than usual</th>
<th>Much less than usual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Been able to concentrate on whatever you are doing?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lost much sleep over worries?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>Felt that you are plying a useful part in things?</td>
<td>More so than usual</td>
<td>Same as usual</td>
<td>Less useful than usual</td>
<td>Much less useful</td>
</tr>
<tr>
<td>Felt capable of making decisions about things?</td>
<td>More so than usual</td>
<td>Same as usual</td>
<td>Less so than usual</td>
<td>Much less capable</td>
</tr>
<tr>
<td>Felt constantly under strain?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>Felt you couldn’t overcome your difficulties?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>Been able to enjoy your normal day-to-day activities?</td>
<td>More so than usual</td>
<td>Same as usual</td>
<td>Less so than usual</td>
<td>Much less than usual</td>
</tr>
<tr>
<td>Been able to face up to your problems?</td>
<td>More so than usual</td>
<td>Same as usual</td>
<td>Less able than usual</td>
<td>Much less able</td>
</tr>
<tr>
<td>Been feeling unhappy and depressed?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much less than usual</td>
</tr>
<tr>
<td>Been losing confidence in yourself?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more</td>
</tr>
<tr>
<td>Been thinking of yourself as a worthless person?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>Been feeling reasonably happy, all things considered?</td>
<td>More so than usual</td>
<td>About same as usual</td>
<td>Less so than usual</td>
<td>Much less than usual</td>
</tr>
</tbody>
</table>