UNIVERSITY OF EDUCATION, WINNEBA

NUTRITIONAL STATUS OF THE ELDERLY AND THE CHALLENGES OF THEIR CAREGIVERS IN DAMBAI

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DECLARATIONS

Student`s Declaration

I, Mabel Mawuli Silver, declare that this thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and that it has not been submitted, either in part or whole for another degree elsewhere.

Signature: ……

Date: ……

Supervisor`s Declaration

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for thesis as laid down by the University of Education, Winneba.

Prof. Matthew Caurie (**Supervisor)**

Signature: ……

Date: ……

DEDICATION

To my dear ones; Madam Hannah Dagbey, Madam Christiana Dagbey and Mr. B. L.G Silver (all of blessed memory) and all elderly the world over.

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ABSTRACT

The study sought to investigate into the nutritional status of the elderly, the nutritional challenges they faced, the challenges of the caregivers and the relationship between the challenges of the caregivers and the nutritional status of the elderly in Dambai. The study was based on the needs and family theory. Using survey design, data were collected from a hundred elderly with functional limitations and a hundred caregivers. Multiple methods of data collection were adopted for the study. Questionnaire, interview and anthropometric measurement were used to obtain data). A total of two hundred respondents were conveniently and randomly sampled for the study. The data obtained were analysed and presented in charts, frequency distribution tables, percentages and graphs. The evidence emerging from the study was that 32% of the elderly were underweight revealing the prevalence of malnutrition (undernutrition) in the study area. The elderly were faced with health problems eating disorders which militate against their food intake and affects their nutritional status. It was revealed also that caregivers faced varied challenges associated with caregiving like stress/exhaustion, finance and inadequate time to cater for the needs of the elderly as most of them have their children and that of other family members in school. The study indicates that the challenges of the caregivers affect the nutritional status of the elderly; the more the challenges the lesser the ability of the caregivers to undertake care duties effectively. It has therefore been recommended that there should be development and implementation of income generating strategies for both elderly and caregivers should be educated to ensure that the elderly have access to nutritious low cost foods from the locality. Caregivers should also be assisted to empower themselves financially, and families should strengthen their ties especially the extended family ties by showing concern for other family members.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Globally, the proportion of older persons is growing at a faster rate than the general population. According to the World Population Aging Report (2015), the population of people sixty years and above, is projected to rise to 56% from the current 900 million to 2 billion by 2050. The number of people aged 80years or above, the oldest old persons are growing even faster than the number of other older groups. Out of Africa`s population of a little over one billion (1,073,380,925), people over sixty years form 3.4% of the total population. By the year 2050, the number of people over sixty years old living in Africa will increase from the current under five million to under 200 million (UNDESA, 2015).

According to Ghana`s Population and Housing Census (2010) report, the population of people sixty years and older form 3.6% of the total population of 24,652, 502. This implies a growing demand for long-term care, usually supported by family members (Kuate Defo, 2009). In most African countries, support to older persons is rarely provided through public resource transfers, and family support remains their main source of support (Willmore, 2001). The family support is particularly important for very older persons and older persons living in remote and rural areas because their physical, economic and health needs are generally greater and also neglected. In Africa, aging has only recently begun to emerge as a problem area. This is so because the elderly were a micro-segment of the entire population and the family has traditionally been the major source of support and caregiver for them (Abiodum, 2002).

The rapid elderly population growth can be linked to successes in widespread acceptability of controlling high birth rates, the decline in child and maternal mortality, improvement in public health, increase in life expectancy among others (Okumagba, 2011). This rapid elderly population growth presents challenges other than opportunities, especially among the rural dwellers in developing countries like Ghana. In Ghana, where most of the elderly live in rural areas and are mostly illiterates for whom there exist no old-age income security for the vast majority, and where gainful employment opportunities for those who are able are extremely scarce, material old-age support is crucial in shaping the economic wellbeing of the elderly (Lloyd-Sherlock, 2004).

The body begins to break down after the peak reproductive years have passed and as people age, they cannot perform most of their functional duties well as they used to and their bodies can no longer fight off infectious diseases nearly as well as when they were young. With advanced age, the elderly become dependent just as during their childhood days (Panno, 2005). They, therefore, need the support and care of other people for their survival. The elderly like any other human group, need good nutrition, love, belongingness, self-esteem in order to live a happy and fulfilling life.

The elderly require support for instrumental (functional) tasks such as cooking and shopping, as well as material and psychological support to ensure their survival, particularly when they no longer work for pay or economic gains and begin to suffer from ailments that limit their dexterity and ability to carry out the tasks necessary for their daily survival (Zimmer & Dayton, 2005). Though not every aged adult experience a substantial decline in ability to function, but the longer an individual lives, the greater is the chance of requiring support along life's journey.

Nutritional needs change throughout life and for the elderly; the changes may be related to the normal aging process (Culross, 2008). Health issues and physical limitations

sometimes make it difficult for the elderly to get the nutrients they need for a balanced diet. Poor nutrition or malnutrition occurs in 15 to 50 percent of the elderly population (Wallace, 1999). Poor nutrition may result from decreased taste, loss of appetite, financial issues and lack of mobility, nutrient malabsorption, menopause and prostate problems, heart disease risk, depression and isolation (Demling & DeSanti, 2001).

Aging is accompanied by physiological changes that can negatively impact on nutritional status; such as poor oral health and dental problems can lead to difficulty in chewing, inflammation, and a monotonous diet that is poor in quality, all of which increase the risk of malnutrition. Adversely, malnutrition can cause reduced muscle and tissue mass, decreased mobility and stamina as a result of muscle wasting, breathing difficulties, and an increased risk of chest infection and respiratory failure, wounds that take longer to heal and illnesses that take longer to recover from.

Material support and protection has traditionally been the responsibility of the family and the elderly depended on the family support, especially adult children who have the greatest responsibility to care for their parents; this is an obligation according to the Ghanaian tradition. The elderly, therefore, enjoyed substantial support and assistance from their families in the form of provision of their basic needs, social, emotional, functional as well as health needs Lloyd-Sherlock (2004). Nowadays, there is a decline in material support for the elderly from their family members and this exposes an increasing number of the elderly to destitution, severe poverty and malnutrition (Aboderin, 2000), especially in rural areas like Dambai.

Dambai is the Regional capital of the Oti Region. It has a population of about 15,680. The age group of sixty years and above (60+) constitutes about 3.6% of the total population.

About sixty-eight (68%) of the people is predominantly subsistent farmers. Other sources of employment include trading, fishing, teaching and civil service work. Ewe, Konkomba, Akan, Nchumuru, Krachi, Basare, Kotokoli, Zambrama are some of the ethnic groups found in the town. Educational level in the town is very low, and migration level is high, especially among the women within the economically active group (Ghana Population and Housing Census, 2010). Poverty, lack of sustainable job or employment, low educational levels, teenage pregnancy among others influence the economic life of the people in the area and translates a lot into the quality of nutritional care and general wellbeing the elderly enjoy with their families in Dambai.

1.1 Statement of the Problem

The study was motivated by observations made about the elderly in different parts of the Volta and Oti regions and specifically in Dambai where the researcher pays regular visit to some elderly in the community with an emphasis on the elderly who are functionally limited in one way or the other and therefore need assistance in performing functional activities of daily living.

Although many researches have been conducted on nutrition and the elderly, i.e. by Rose, (1991); Amarantos *et al*., (2001); and on the challenges of caregivers by Navaie *et al*., (2002); Schulz, (2006) they were not able to investigate the relationship between nutritional status of the elderly and the challenges of their caregivers. Observations also made overtime on both the elderly and their families, suggest existence of economic

hardship cast a doubt on the nutritional care of the elderly and also the challenges of caregivers in Dambai. Hence, the study sought to investigate the nutritional care the elderly receive from their families and the challenges the caregivers might be facing.

The extent to which the family system or caregivers maintain their roles in keeping the family system cohesive is an issue that deserves to be researched. It is against this backdrop that the researcher sought to ascertain and document the role of the family in caring for the nutritional wellbeing of the elderly in Dambai. With a good background in foods and nutrition, the researcher decided to investigate the nutritional care of this heterogeneous group of people from their families, their nutritional status, the nutritional challenges they face and the challenges the caregivers face in the discharge of their duties in Dambai.

1.2 Purpose of the Study

The purpose of the study is to investigate the care given by families concerning the nutritional needs of the elderly and the associated challenges of the caregivers.

1.3 Objectives of the Study

The specific objectives of the study were to:

1. examine the care given by families concerning the nutritional needs of the elderly in Dambai.
2. ascertain the nutritional status of the elderly in Dambai,
3. examine the nutritional challenges faced by the elderly in Dambai,
4. identify the challenges caregivers of the elderly face in Dambai.

1.4 Research Questions

1. What is the care given by families concerning the nutritional needs of the elderly in Dambai?
2. What is the nutritional status of the elderly in Dambai?
3. What nutritional challenges do the elderly face in Dambai?
4. What challenges do caregivers of the elderly face in Dambai?

1.5 Hypothesis

The assumption of the study is that there exists no relationship between the challenges of caregivers and the nutritional wellbeing (status) of the elderly.

1.6 Significance of the Study

The findings of the study will provide information on the nutritional status of the elderly in Dambai. The findings will alert families and other caregivers of their role in meeting the nutritional and other needs of their elderly. It will bring to the fore the challenges family care-givers face in caring for their elderly and prompt family members to direct their attention to solving some of these challenges to better the nutritional wellbeing of the elderly. Furthermore, the study will prompt Non-Governmental Organizations, such as Help age, Care International, Catholic Relief Agency and other benevolent organizations to factor the rural elderly in their programmes. The study will also provide evidence to support the need for a more comprehensive approach to the provision of care for the elderly in Ghana. Finally, it will be a reference document for those who will in future embark on a study related to this topic.

1.7 Scope of the Study

The study is limited to, all the elderly men and women aged sixty years and above (60+) who are functionally limited in one way or the other in the performance of their

daily chores and therefore need assistance at Dambai in the Oti Region of Ghana. No other group(s) of people qualify to be part of the study.

1.8 Definitions of Term

Fufu: a typical Ghanaian dish usually prepared by pounding starchy root tubers, plantain or their mixtures into a sticky dough and eaten with soup**.**

Opanyin (Akan): an elderly person

Ametsitsi (Ewe): an elderly person

Fome (Ewe): family

Abusua (Akan): family

1.9 Abbreviations

USAID-United States Agency for International Development

WFP-World Food Programme

JHS -Junior High School

SHS- Senior High School

UNDESA: - United Nations Development Economic and Social Affairs

FSA - Friendly Societies Act

1.10 Organization of the Study

The study is organized under six chapters as follows: Chapter One deals with the introduction to the study with background information, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, scope of the study, definition of terms and organization of the study. Chapter Two reviews relevant literature related to the topic under study. It is considered under the following sub-headings: definition of the elderly, age-related changes, theories of

aging, family, family care for the elderly, aging and nutrition and nutrient needs of the elderly. Chapter Three looks at the research design used in the study, the setting, study population, sample and sampling technique, limitations to the study , development and design of data collection for the study and method used in analysing data collected. Chapter Four presents results/findings while Chapter Five discusses the results and findings. Chapter Six gives the summary, conclusions, recommendations and areas for further studies

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Literature review deals with the selection of available documents (both published and unpublished) on the topic, which contain information, ideas, data and written evidence from a particular standpoint to fulfil certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed (Bell, 2005). The purpose of the literature review is to locate the research project, to form its context or background, and to provide insights into previous work (Blaxter *et al*., 2006). This chapter therefore reviews the works of different authorities in relation to the topic under study. The literature has been reviewed under the following sub-headings. Definition of the elderly, aging, biological theories of aging, the contribution of the elderly, age related changes, family, family care for the elderly, caregiving, importance of food, nutrient requirement of the elderly, malnutrition and the elderly and theoretical framework of the study.

2.1 Definition of Elderly or Older People

The varied situations of older people in countries throughout the world have led to differing definitions of older people (Jimmenz & Rosenberg, 1997). As far back as

1875, in Britain, the Friendly Societies Act (FSA), enacted the definition of old age as, any age after fifty years, yet pension schemes mostly use age sixty or sixty-five years for eligibility (Roebuck, 1979). According to Acthley (1989), aging is the developmental and gradual process of change in the individual right from conception to death. It is the gradual, irreversible changes in the structure and function of organisms that occur as a result of passage of time. It is an unavoidable part of life brought about by physiological, social, economic and environmental factors. Aging is related to the general health of people in the performance of their duties as they advance in age. There are both positive and negative aspects of aging. The positive components are expertise, wisdom and experience.

The negative component, however, is termed senescence and refers to the decline in the capacity of the cells to divide and grow. The elderly consist of people who have passed the average age of lifespan in society and therefore facing a decline towards the end of life or death. Elderly status is achieved by the process of aging, which is associated with the decline in the functional, social and emotional state of the individual. Most developed world countries have accepted the chronological age of 65 years as a definition of 'elderly' or older person, but like many westernized concepts, this does not adapt well to the situation in Africa (Aboderin, 2000).

Old people can be identified in a variety of ways, either by their physical attributes or appearance (for example, grey hair, wrinkles, obvious frailty), by their life experiences (for example, their reproductive history), or by the roles that they sometimes play in their community (WHO, 2013). Consequently, chronological age, which in any event may not even be known in sub-Saharan Africa, may be a poorer indicator of being elderly than social standing. Adding to the difficulty of

establishing a definition of the elderly, actual birthdates are quite often unknown because many individuals in Africa do not have an official record of their birthdates (WHO, 2013). Coupled with this, the fact that, the majority of older persons in sub-Saharan Africa live in rural areas and work outside the formal sector, and thus expect no formal retirement or retirement benefits make this imported logic of retiring age seems quite illogical (WHO, 2013).

Chronological age may also differ markedly from functional age, which can be the most important dimension of aging in a rural subsistence agricultural context. In some sub-Saharan African settings, people who are younger than sixty years may be considered old because they exhibit morbidity profiles and take on status roles more usually associated with people over the age of sixty years in other settings. In addition, chronological or official definitions of ageing can differ widely from traditional or community definitions of when a person is older. In some cultures adult population can be divided into three life stage groups: the 'young-old, approximately sixty-five to seventy-four (65 -74) years, the middle old seventy-five to eighty-four (75-84) years and the older-old over eighty-five years (Quadagno, 2005, Little, 2014).

In Ghana, 'old age is not merely reckoned in terms of number of years, but, ideally, it is also based on one's situation and the status of having children and grandchildren, having returned home to stay with the family (*fome*/*abusua*), behaving like an elder (*ametsitsi*/*opanyin*) which implies self-control, giving advice to younger people and showing kindness and patience to others (Sjaak, 2002). For the purpose of this research, sixty years and above are used for the definition of elderly.

2.2 Aging

Aging is a process of growing old. It is a normal phenomenon which includes growth and maturity of the body (Gurung & Ghimire, 2014). According to Reichardo et *al*., (2013), aging is a gradual process during which critical emotional, physical and social changes occur. It is also viewed as an accumulation of changes in an organism or object over time (Obioha & T`soeunyane, 2012). It is a natural and universal phenomenon which has multidimensional process, not only viewed as biological and medical concern alone, but of social, economic, psychological and demographic concerns (Rawat, 2005) as well. It comes with a persistent decline in the age specific fitness components of an organism due to internal physiological deterioration (Rose, 1991).

Aging is the process of slow cell death beginning soon after fertilization (Wardlaw, 2003) and gradually, the process that converts older fit adults into frailer ones with a progressively increased risk of illness, injury and the resultant outcome is death (Miller, 2004). It renders a once strong, energetic and independent individual into a frail, dependent and at times sick person with loss of self-esteem. It is also associated with significant changes in physical, physiological, psychological and immune functions which results in progressive generalized impairment that increases susceptibility to infectious diseases (Lesourd, 1997). However, aging can be viewed from many perspectives such as chronological, functional, biological, psychological, social and usual. There are many physical and psychological changes in the process of aging or growing old. These changes are not harmful, but bodily function is gradually being declined (Pasco & Pinellas, 2013).

Aging can be defined as a series of time related processes occurring in the adult individual that ultimately bring life to a close. It is the most complex phenotype

currently known and the only example of the generalized biological dysfunction. Aging influences an organism's entire physiology, impacts function at all levels, and increase susceptibility to all major chronic diseases (Vijg, 2007).

Chronological age is based solely on the passage of time and has limited significance in terms of health. Nonetheless, the likelihood of developing a health problem increases with the passage of time (Bears &Jones, 2004). Chronological age may also be poor indicator of old age because people may be old at fifty, whereas others may seem young at eighty (Quadagno, 2005). Chronological age rather lumps together people of widely varying generations into a single category, for example a sixty-five year old has much in common with an 85 year old in terms of interests and life experiences (Quadagno, 2005).

With functional age, a person becomes older and therefore cannot perform the major roles of adulthood (farming, fishing, trading etc.). In most cultures around the world, men age functionally earlier than women due to the fact that they perform more physical strenuous duties than women. Among the Black Carribeans of Belize, menopause is the determinant of old age in women and so women may become old at forty five to fifty, but a man still may be considered at sixty 60 to be young (Schulz *et al.,* 2016). Functionally, people of the same age group not only age in different ways and with different speed, but different parts of the same may body age at different rates as well. A person who is forty years old may be afflicted with stroke and also a fifty year old man may be able to raise more yam mounds than a thirty year old man. Functional age may also be a comparison of such physical changes as stiffness of joint, grey hair, wrinkles and reduced skin elasticity of people from the same age

group (Schneider, 1983). It can therefore not be used solely as a measure to define aging.

Biological age refers to changes in the body that commonly occur as people advance in age, vision and hearing typically worsen as people age (Ayranci & Ozdag, 2004). These changes affect people differently, hence some people age biologically at forty years while others are biologically young at sixty years and even older (Bears & Jones, 2004). According to Miller (2004), biological age encompasses measures of functional capacities of vital or life limiting organ systems.

Ageing brings with it myriad changes, many of which are unwelcome. Slowing is a key hallmark of ageing. The effects are ubiquitous. People move more slowly, metabolize toxins over longer time courses. Waking up in the mornings to stiff and sore feelings, slower recovery from injuries and illnesses, straining to hear a conversation, are a reflection of "typical" age-related changes. Having difficulty retrieving the names of close associates, forgetting a task one has planned for and doing other unrelated ones, drifting off while reading the newspaper or books, all represent real consequences of age-related changes in biological systems.

Disease and disability are typical are towards the end of life making, older societies to have greater morbidity and more functional limitations than younger populations. During old age, there is a diminution of physical reserves, culminating, in the onset of frailty, a medical syndrome of decreased reserves and resilience, and for some, disability and loss of independence (Fried *et al*., 2001). According to Bandeen-Roche, *et al.* (2006), even those who escape frailty in old age experience diminished resilience and reserves as they get older.

Psychological age is based on how people act and feel. For example, an eighty year old who works, plans and looks forward to future events and participates in many activities is considered psychologically young and such a person is commonly described as being young at heart. Although people age differently, many changes occur in almost every one and are thus considered usual. Usual aging refers to what commonly happens to most people, including disorders that are common among older people. Social age is measured by age graded behaviours causing an expected role and status within a particular culture or society. Changes in dressing, language use and role participation and status are all indicators of social age that becomes less distinct or predictable in the course of chronological aging (Amarantos, *et al.,* 2001). Social role identifies and defines individuals' position and validate their existence in social groups such as families, workplaces and communities. Social role changes throughout the lives. The different roles remain in place, but the participation in that role generally depends on the health status, financial resources and mobility in the community (Gurung & Ghimire, 2014).

In general, as changes begin to happen in one area of the individual's life, most likely the others too will be affected as well. There is a wide variation among individuals in the rate of aging and, within the same person, different organ systems age at different rates. However, all experience common changes to some degree. How the individual ages can be a result of diet, exercise, personal habits, and psychosocial factors (WHO, 2004).

Aging can also be categorized into primary, secondary and normal aging (Whitbourne & Whitbourne, 2010). Primary aging is defined as the universal changes occurring which are not caused by disease or environmental problems and influences.

Secondary aging, on the other hand is the changes involving the interaction of primary aging processes with environmental influences and disease processes. Normal aging or senescence is the process by which a cell loses its ability to divide, grow, and function. This loss of function ultimately ends in death (Acierno, 2010).

2.3 Biological Theories of Aging

Theories are broad explanations that provide a structure for organizing and interpreting a multitude of observable facts and their relationships to one another (Hagestad & Dannefer, 2001). According to Bengston, *et al,* (1996), theories help to define a research agenda, provide a guide for scientific investigations and predict what is not yet known or observed. Most scientists believe aging probably does not have a single course, but rather, the process occurs in part because of environmental factors and in part due to genetically programmed purposeful process in which vulnerability due to environment and nutrition, increase over time as the body advances through a natural development process from adulthood to death (Quadagno, 2005). Biological theories of aging explain information regarding the physiological change that process with aging, how aging manifested at the molecular level in the cells, tissues and the body (Mauk, 2006). In their effort to understand the aging process, many scientists and sociologists have propounded many theories and assumptions to explain the occurrence of this unavoidable situation.

2.3.1 Wear and Tear Theory

Postulated by August Weisman and cited by Miller (1990), normal somatic cells were limited in their ability to replicate and function and that death occurs because worn-out-tissues could not forever renew themselves (replicated and living organisms surrendered to wear-and-tear of life). The theory explains that, prolong abuse results

in overuse of the body and can destroy cells in the body. Environmental exposure to the ultraviolet rays of the sun causes damage to the skin; alters the cellular structure and affects the production of collagen and elastin which give the skin its youthful and hydrated appearance. Internally, prolonged lifestyle practices such as bad eating habits, results in increase consumption of high fat and salty foods. This alters the characteristics of blood vessels which may cause hypertension. Stress is a normal adaptation process that is required to achieve certain goals, but excess stress places the body under pressure by increasing blood pressure. According to Miller (2004), the body is analogous to a machine that is expected to function well during the period of its warranty or when it was new but will wear during a predictable time but wears on continuous use and abuse. Harmful stress factors such as smoking, poor diet, alcohol abuse or muscular strain can exacerbate the wearing out process.

The wear and tear implies that a more active organism should age yet it is the opposite that happens in humans that is, low levels of physical activity are associated with death as stated by Kaplan and Strawbridge (1994), Hayflick (1996), must be right in admitting that the theory is difficult to test owing to the fact that there is no clear cut of what constitutes normal wear and tear therefore can be no prediction of breakdown of the various body systems, for this reason, the wear and tear theory is largely discredited.

2.3.2 Somatic Mutation

This theory suggests that, when the cells are exposed to x-rays, radiation or chemicals, a cell-by-cell alteration of DNA occurs increasing the incidence of chromosomal abnormalities. Subsequently, replicated cells are perpetuated and harboured with deleterious effects. According to Morgan and -Kunkel (2006), over a lifetime the body

is exposed to insults such as chemicals in food and water, radiation, pollution and many more. These insults cause mutation (genetic damage) to somatic body cells and tissues. The somatic mutation theory may explain variations between body systems in the aging process. As a general theory of aging, however, the somatic mutation theory fails to explain basic processes of normal change (Quadagno, 2005).

2.3.3 Autoimmunity

This theory explains that immune reactions decline with age as the body is capable of producing sufficient quantities and kinds of antibodies (Miller, 1990). Because of this, the older person has little or low defence against invaders which are foreign protein-like materials called antigens (such as bacteria, viruses, precancerous cell) that the immune systems recognizes as non-self when the body was younger. Autoimmune reactions occur when white blood cells and other bodies fail to distinguish between substances normally present in the body and invading foreign proteins. White blood cells and other immune bodies begin to attack body tissues in addition to foreign proteins. Many diseases, including some forms of arthritis are involved in this autoimmune response. People are born with low or weak immune systems and most of them are easily susceptible to several disease conditions from their childhood. This makes it quite difficult for one to use autoimmunity as a strong base in the aging process

2.3.4 Cross –Linkage Theory

The theory proposes that, over time, biological processes create connections between structures normally not connected and several cross-links occur rapidly between thirty and fifty years (Mauk, 2006). Collagen is one of the common proteins found in

tendons, ligaments, bones, cartilage and skin. It is also the glue that binds cells together by cross-links (Hayflick, 1993). According to the theory the body's natural defence system usually repairs the damage, but increasing age weakens this defence mechanism allowing the cross-linkage process to continue until irreparable damage occurs (Miller, 2003). The end results are an accumulation of cross-linking compounds (collagen) that causes mutation (damage) that renders the cells unable to eliminate wastes and transport ions. This, according to the theory, is responsible for the loss of elasticity of the skin, hardening of the arteries of the circulatory system and stiffness of the joints throughout the body which can be produced during normal metabolism, irradiation, chain reaction of other free radicals and oxidation of certain environmental pollutants such as ozone, pesticides and air pollutants. They may also be generated in the body through the influence of drugs, smoking, radiation, etc. (Goldstein, *et al,* 1989).

When free radicals attack molecules, they damage the cell membrane causing aging to occur because of cumulative cell damage that eventually interferes with the function (Miller, 2004). During aging, damage produced by free radicals cause cells and organs to stop functioning properly, these free radicals or other metabolic by-products play a role in senescence. Although the free radical theory is useful for understanding why some individuals are at greater risk of certain diseases than others and for describing part of the aging process, it is not, in itself, a general theory of biological aging (Grune & Davies, 2001).

2.3.5 Programmed Aging Theory

It states that cells double a number of limited times before dying. The number of cell division is proportional to the lifespan of the species. Human cells double or divide

forty to sixty times before the ability to replicate is lost, bringing about a gradual and sequential degeneration of cell tissues. Once this number of division occurs, the cell automatically succumbs. Hayflick and Moorhead, (1961)). The degradation occurs by design, as a way for the body to regulate cell number. One mechanism for this limitation is that the DNA shortens in length with every division (Ebersole *et al.,* 2004).

Lockshin and Zakeri (1990) theorized that programmed cell death demonstrates that the capacity to self-destruct is common and may be common among both meiotic cells (lymph system) and postmiotic cells (neuron and muscle fibres) both of which lead to mechanism of senescence. In spite of the fact that evidence of the theory supports the fact that genetic information is embedded in the cells and that provides a blueprint for the aging process, it is not enough grounds to explain that the theory is responsible for the aging process since there are many complex changes that precede the cell death (Hayflick, 1983).

2.3.6 Pacemaker or Neuro-endocrine Control Theory

Common neurons in the higher brain centres act as pacemakers that regulate the biologic clock during development and aging. Aging is manifested in slowing down or activity imbalance of the pacemaker neurons affecting neural, muscular and secretory functions as evidenced in evolution, reproduction, loss of fertility, menopause, decreased muscular strength, less able to recover from stress and impaired cardiovascular and respiratory activity (Ebersole, *et al.,* 2004). Homeostatic adjustment declines with a subsequent failure to adapt, and is followed by aging and death. Bartke and Lane (2001), states that an imbalance of thought-transmitting chemicals interferes with cell division throughout the body.

2.4 Contributions of the Elderly

The foundation of both modern and prosperous developed nations and developing ones owe their successes to the sacrifices, diligence and resourcefulness of the previous generations. Older people play a vital role in societies across the globe; and on the African continent, millions of families would not survive the HIV pandemic without the contribution of older people from caring for orphaned grandchildren and infected own children to providing much needed household income (HelpAge, 2008). The elderly can and do contribute in various ways, including serving as an inter-generational bridge or link between old and new; custodians of traditions, cultures and values (Asiyanbola, 2008*),* and the interpersonal contributions of older people as care-providers

Older persons make significant contributions to society; for instance, throughout Africa and elsewhere - millions of adult AIDS patients are cared for at home by their parents. On their death, orphaned children left behind are mainly looked after by their grandparents (Saengtienchai & Knodel, 2001). In many rural societies, older adults contribute significantly as care providers (childcare, peer care, end-of-life care in families); yet, the frequency and the worth of this kind of contribution are generally overlooked and under-estimated (Wells, 1997). It is not only in developing countries that older persons' role in development is critical. In Spain for example, caring for dependent and sick individuals (of all ages) are mostly done by older people (particularly older women) (Durán & Fundación, 2002).

Besides care-giving, the elderly contribute to families by performing household tasks and other daily activities (Andrews, & Hennink, 1992). Rather than producing goods and services, older persons can and do contribute various socially valued products

such as counselling, monitoring, community leadership, political involvement or as role model figures. Such non-monetary efforts may have great economic and human benefits, but they are generally not widely recognized or appreciated. The elderly play a major role in socializing children through the way they relate to their children and grandchildren. Through this relationship, they extend to them their wealth of knowledge, wisdom and experience through mediums such as folklore and folktales (Little, 2014). By this they also inculcate in the young ones proper ways of behaving, the good virtuous persons they have to be in future, the kind of credibility, value, integrity, honour and aspirations they should develop (Obioha &T`soeunyane, 2012).

Economically, the elderly engage in handicrafts such as spinning cotton into yarns, weaving clothes by hand, preparing soap using the traditional method, weaving of mats by women. The men engage themselves in weaving mats, baskets and preparing mud for the construction of mud houses. Most of the skills used by the elderly are acquired from their predecessors and they can and do transmit same to their grandchildren. They serve as crucial agents of medicine and healing as they use their medicinal knowledge in healing fractures, snake bites, infertility and other ailments with traditional medicines. The elderly also provide skilled labour, through childbirth where they act as traditional midwives; equip pregnant women with precautions and information during pregnancy (Acierno, 2010).

Vital leadership roles are concentrated within a hierarchical structure of leadership in the family or clan by which power is vested in the elderly to take certain decisions on behalf of the members. They take the lead in such matters as settling disputes as they may occur within the family and between spouses, contracting marriages between members of the family and other families, organizing and presiding over funeral

activities (Little, 2014). The elderly are therefore a unique expression between past and present and so are seen to close the gap between the dead and the living as such rituals performed by them is seen to be acceptable by the gods and ancestors. They therefore act as a generational bridge between the ancestors whom they have lived and interacted with and the current living generations, by their traditions, norms and values which are passed on. The elderly among other things serve as important agents in religious institutions as they show active participation in modern church activities as Sunday school teachers and members of church sessions and also carry over functions from traditional religious values and beliefs through propagating of acceptable social values and norms to other members of society (Obioha &T`soeunyane, 2012)

The role of maintaining the traditional structure of society and offering information which is needed, but not physically documented is well executed by the elderly where they act as living expressions of tradition. For example, family and clan lineage, emblems and totems which help future generations to deeply know themselves, identify and deeply become grounded in their nation and thus enable them to have a sense of belonging (Blenker, 1965). The elderly play protective roles of protecting younger members of their families against immoral behaviour and through magical and mystical powers as found among the Ashantis where the father is believed to possess a mystical protective shield *(ntoro*) over his off springs. The elderly, therefore, perform roles like socialization and educational functions, protective and mystical functions, medicinal and healing functions, leadership and social functions and contribute to the economic production of society (Obioha & T`soeunyane, 2012).

2.5 Age-Related Changes

As the body ages, there are gradual changes which occur, at the body's own pace. How an individual age depends in part on the family (genetic) patterns of aging, but nutrition and lifestyle choices have a more powerful impact on how well the body ages. A healthy lifestyle and good nutrition may slow many of these normal effects of aging (Culross, 2008).

2.5.1 Physical Changes

Muscle strength and flexibility decrease with age as a result of the atrophy and shrinking of the muscle mass from lack of use, hence the capacity to assume strenuous effort gradually declines with time and the individual eventually become less able to walk as far or lift as much. As hair pigment cells decline in number, grey hair growth increases and there is a gradual thinning of hair on the scalp, pubic area, and armpits. By age eighty, it is common for an elderly to have lost as much as 2inches (5 cm) in height. This is often related to normal changes in posture and compression of joints, spinal bones, and spinal discs (Bohinski, 2018). Swift (1960), writes that at age ninety and above, they lose their teeth and hair, they have at that age no distinction of taste, but eat and drink whatever they get, without relish or appetite``. The diseases the elderly have continue without increasing or decreasing. In talking they forget the common appellation of things and the names of persons, even of those who are their nearest friends and relatives. For the same reason they never can amuse themselves with reading because their memory will not serve to carry them from the beginning of a sentence to the end and by defect, they are deprived of the only entertainment whereof they might otherwise be capable (Swift, 1960).

With advancing age, the kidneys decline in size and function. They do not clear wastes and some medicines from the blood as quickly and do not help the body

handle dehydration as well as in the past. Age-related changes in the urinary system, decreased mobility, and some medication side effects can all lead to urinary incontinence. Men and women produce lower levels of hormones starting in their 50s. Men produce less sperm, and their sexual response time slows, though the male sex drive does not decrease. Women stop ovulating and have a number of menopausal changes linked to lower oestrogen production.

2.5.2 Age-related Changes and the Sense Organs-Skin

With age, the skin becomes less elastic and more lined and wrinkled. Wrinkling is the most common and most notable during the aging process. Increased wrinkling is due to a normal loss of elastic tissue, excessive sun exposure, smoking, and heredity. Small skin haemorrhages are noted; these may look like small red dots just about anywhere on the body. A few of these are however normal. The sweat glands also shrink, reducing sweating and making it more difficult for medical providers to assess dehydration of the skin alone. Fingernail growth also slows and the oil glands gradually produce less oil, making the skin drier than before (Harrar, 2018).

2.5.3 Hearing

With increased age, the entire auditory nerve pathway undergoes atrophic changes, which combine with degenerative changes in related structures causing hearing deficits in the elderly. The auditory canal narrows, causing inward collapsing; stiffer and coarser hair lines the ear canal. Cerumenautrophy, (causing thicker and dryer cerumen) becomes more difficult to remove and causing substantial hearing impairment. The tympanic membrane becomes dull, less flexible retracted and grey in appearance, vibration is reduced and sound transmission is equally reduced. Constant

or recurring high pitched tinnitus (clicking, buzzing, roaring, ringing or other sounds in the ear) is usually caused by impairment of optic nerve accompanying the aging process (Gulya, 1995).

In addition to age- related changes that interfere with hearing, other factors such as lifestyle, heredity, environment, impacted wax, and disease processes also contribute to hearing loss. Older adults experience changes in their ability to code sound frequencies precisely. Those with cognitive impairment will have increased difficulty with speech comprehension. Hearing is a primary component of communication for daily living in society through which one enjoys humour, appreciates music, obtain information and relates to others, hearing deficits inevitably affect these and many other activities of daily life (Miller, 2004).

Family members and friends may be frustrated when trying to communicate with a hearing-impaired elderly relative. They may exclude the individual from the conversation or talk around him or her. The elderly may then withdraw from social interaction and may stop initiating conversations (Quadagno, 2005). Hearing deficits may also lead to fear, boredom, apathy, depression, social isolation and feeling of low self- esteem, which may affect the eating pattern of the elderly and can result in malnutrition (Kramer *et al.*, 2002).

2.5.4 Smell and Taste

The senses of smell and taste work together to influence each other as a functional entity (Mauk, 2006). These senses intervene to provide link to the environment and play an important role in the eating behaviour and in the maintenance of health (Maas, 2001). They allow appreciation of good taste and smell and also serve as a warning of

environmental hazards (Wharton, 2000). The ability to taste depends primarily on receptor cells in the taste buds which are located on the tongue, palate and tonsils. The loss of taste is caused by degeneration of the taste buds or a change in the way the brain perceives information from the taste buds (Hayflick, 1993).

Age related changes in the central nervous system contribute to this decline as do other factors such as cigarette smoking, vitamin B12 deficiency, medications, periodontal diseases and infections (Miller, 2004). Upper respiratory diseases (sinusitis), systemic diseases (dementia, diabetes), occupational experiences and viruses are also potential causes that affect smell and taste in the elderly. Changes in smell and taste may lead to poor appetite and dulled sensation of hunger (DeJong, 1999) exposing them to malnutrition. Many elderly compensate for lost taste by eating more highly seasoned food which can pose a health risk.

2.5.5 Touch and temperature

The sense of touch diminishes with age, especially on the skin of the fingertips. There is also a decreased sensitivity to pain with age (Quadagno, 2005). The primary function of thermoregulation is to maintain a stable core body temperature in a wide range of environmental temperatures. In the presence of infections, thermoregulation also assists in maintaining homeostasis. Regulation of body temperature is affected by such internal factors as metabolism rate, disease processes, muscle activity, peripheral blood flow, amount of subcutaneous fat, function of cutaneous nerves, ingestion of fluid, nutrient, medication temperature of blood flowing through the hypothalamus (Miller, 1990).

External factors such as environmental temperature, humidity level, and air flow as well as the amount of clothing and covering used also affect thermoregulation. Any combination of environmental and other risk factors in the elderly is likely to lead to serious problems or even death because of impaired thermoregulatory mechanisms that increase the elderly vulnerability to hypothermia (Quadagno, 2005). They may also be susceptible to heat related illnesses, diminished febrile response to infection and dehydration. These can affect their food intake which in turn will affect the nutritional wellbeing of the elderly.

2.5.6 Age-Related Changes and the Skeletal System

The skeletal system consists of bones, cartilage and various types of connective tissues. It provides the structural framework for the body, protects vital structures like the heart and lungs, provides attachment sites for muscles and acts as a lever that helps the muscle to produce movements. The skeletal system also stores calcium and other essential minerals and it is the site for the manufacture of blood cells. Age-related changes that affect the remodelling process include increased bone reabsorption, diminished calcium absorption, increased serum parathyroid hormone and impaired regulation of osteoblast activity (Miller, 2004).

The age-related changes that have the greatest impact on muscle function or loss of muscle mass as a result of decreases in the size and number of muscle fibres, and deterioration of muscle fibres with subsequent replacement by connective tissues. The end result of these changes is a decline in motor function and a loss of muscle strength and endurance (Goldspink, 2012). Decline in bone mass may result in osteoporosis (a process of gradual loss of bone mass that affect all elderly to some degree and predisposes them to fractures) in the elderly. In the later stages of osteoporosis, there

is a loss of height, back pain and curving of the upper back or spine (Dowager's hump). Dowager's hump occurs as the spine bones weaken and slowly collapse under the weight of the upper bone (Quadagno, 2005).

The physical consequences of osteoporosis can have a devastating impact on psychological and social wellbeing of the elderly. Elderly with severe osteoporosis, may often feel a sense of hopelessness, suffer a loss of self-esteem and become depressed. They may also experience a loss of familial roles like wives performing simple household chores and grandmothers unable to carry grandchildren (which are an important means of bonding) for fear of falling (Gusmano, (2006), These may have an effect on the ability of the elderly`s planning, preparation and eating well prepared and balanced meals hence the nutritional wellbeing can be compromised.

2.5.7 Age-Related Changes and the Cardiovascular System

Cardiovascular function is responsible for life sustaining activities of maintaining homeostasis, circulating blood cells, removing carbon dioxide and other waste products, delivering oxygen, nutrients and other substances to all the body organs and tissues. There are a number of age-related changes that occur in the heart, including muscle atrophy and a reduction in the amount of blood pumped with each contraction. There is also an increase in non-conducting cells, including connective tissues and fat which make the heart beat more irregular. The age-related changes impair the pulsatile flow of blood and increase the pulse wave velocity forcing the ventricles to work harder while the receptors in large arteries lose their effectiveness in controlling blood pressure (Mitchell & Schwartz, 1962).

With increasing age, the liver becomes smaller and more fibrotic, lipofuscin accumulates and blood flow to the liver decreases by about one-third. Protein synthesis and the rate of degradation result in the accumulation of abnormal protein with a corresponding inability to breakdown protein (Ebersole*, et al.,* 2004). The pancreas becomes more fibrotic causing a decline in pancreatic secretions and enzyme output after age forty and this affects fat digestion and may be the reason for increase intolerance of fatty foods with age.

2.5.8 Challenges Facing the Elderly

Elders the world over face a lot of challenges, some due to the nature of the aging process, some from the environment, socioeconomic and others as a result of lifestyle. These challenges in most cases have a negative impact on the individual`s nutrition and total wellbeing. Global aging has a great impact on the deterioration of family support and social life that used to sustain the elderly (UNDESA, 2006). The elderly in Africa have enjoyed caring from the informal structures of the traditional family system (Bigombe & Khadiagala, 2005). Loss of independence, diminished physical ability, and discrimination are part of the aging process that pose challenges to the elderly.

The elderly are the group most faced with poverty which makes it difficult for them to access their basic needs like food, clothing, shelter and health care. The elderly also faces the challenge of stigmatization and discrimination or prejudice based on their age. This ageism (attitudes and biases) based on stereotypes reduces the elderly to inferior or limited positions in society. Ageism can vary in severity and can reflect in health care, family caregiving; this may result in low self-esteem, a condition which can negatively affect their nutritional health (HelpAge, 2004). They suffer

mistreatment and abuse, including physical assault, insult, denial of food and other necessities of their daily upkeep. Abuse can also come in the form of neglect (poor hygiene, untreated sores, and soiled beddings), financial abuse and untidy living environment (Acierno, 2010). Most are branded witches and wizards upon whom they are ostracized from their communities and given inhumane treatments. In the environment, the elderly may lack access to health care providers or services, inadequate housing or cooking abilities making ageing challenging (WHO, 2018).

Socially, some of the elderly are isolated in loneliness and this is more common among people living alone. They may also lack supportive neighbours, or contact with friends; become upset with their relations (e.g. children) (Constanca *et al*. 2006). This can affect the nutritional and total wellbeing of the elderly. They also face the problem of living arrangement since the majority of the elderly enter old age with poverty and so do not have the means of decent accommodation. Therefore, they live in slums falling victim to unsuspecting criminals.

The health of many elderly deteriorates with age and they are afflicted with health problems like hypertension, diabetes, cardiovascular, metabolic and other ailments but many find it difficult to access health care. Some elderly people may suffer depression, isolation, loneliness and this may affect their nutrient intake; it can even make them to be erratic in their eating pattern Sometimes they may lose their sense of value as they are no longer performing their functions as they used to and have to depend on others for support and upkeep, they may also become depressed at the loss of a close friend, spouse, relative or children. All these may affect their food intake and their nutritional status (Singh & Misra, 2009).

2.6 Family

The definition of family is complex with multiple types as well as considerable variations within the types. The word family is derived from a Latin word meaning household. The concept of family is one with which almost every individual can identify and be identified. For some, family means their immediate household they have been born into or family of origin; for others, it applies to the household (family) they have biologically created; and for still others, it means the individuals with whom they have developed lasting bonds of intimacy through adoption, foster care, or other relationships. The family structure which encompasses people of different ages, sex, occupation and strength is usually organized along these lines and differences (Obioha & T`soeunyane, 2012).

A man and a woman marry and form a family and this process is replicated multiple times forming multiple families which form villages, regions and countries as such; it can be said that the family is the bedrock or foundation of society. The family is the basic social unit and represents people living together by ties of marriage, blood or adoption thus representing a single household (Nukunya, 2003). It is the basic social unit of all cultures through time and the most significant institution for nurturing, caring for and socializing children.

The concept of extended families, modified, extended families, stems families and others attempt to capture the rich variety of primary groups to which individuals belong. Providing resources, such as money, food, clothing, and shelter, for all family members is one of the most basic, yet important, roles within a family. Supporting other family members is primarily an effective role and includes providing comfort, warmth, and reassurance for family members. Life skills development roles which

include the physical, emotional, educational, and social development of children and adults are done within the family (Scott *et al.*, 2013).

The functions of the family also include regulation of sexual activity, to maintain kinship organization and property rights. One universal regulation is the incest taboo, a cultural norm forbidding sexual relations or marriage between certain kin. This norm has the social reasons of minimizing sexual competition within families by restricting legitimate sexuality to spouses. It also forces people to marry themselves outside their immediate families, which serve the purpose of integrating the larger society. Since kinship defines people`s rights and obligations towards each other, reproduction among close relatives would hopelessly confuse kinship ties and threaten social order. The norm also prevents the multiplication of hereditary disease conditions found in a particular family from becoming endemic in the family, but rather helps in minimizing it when members marry from other wealthy families (Conte & Walentowitz, 2009).

The family`s reproduction function ensures the continuation of society and it is the first and foremost influential setting of socialization. It is within the family that parents teach children to be well integrated and participating members of society. Family socialization continues throughout the life cycle by ensuring that the social placement of its members where parents confer their own identity in terms of race, ethnicity, religion and social class of children at birth is maintained (NCCB, 1987).

The family has been and continue to be a big insurance against old age as well as during sickness. The family also provides some degree of physical, economic and psychological security to its members, hence an attack on a person is considered to be an attack on the family. Similarly, guilt and shame are shared equally by the family.

People view the family as a haven in the heartless world where people look to kin for physical protection, emotional support and financial assistance. This type of family insurance makes people living with families to be healthier than those living alone (Cliff, 2003). Economically, the family constitutes an economic team where members cooperate in producing what they needed for survival, such as farming, construction of houses and the provision of community resources, especially in the rural areas of developing countries (Hussmanns, 2004).

Families are therefore generally considered to be a vital resource and an integral part of an individual's social network across the lifespan (WHO, 2014). Family relationships, like all relationships, vary in positive and negative qualities as they make an individual feel loved and cared for as well as irritated and frustrated (Antonucci, *et al*, 2010). How family relationships influence health and well-being depends on numerous factors, including the specific context of a particular interaction as well as the individual's perception of their relationships and support exchanges. Each specific familial relationship, for example, parent, child, spouse, and sibling, is likely to have a unique influence on an individual's health and well-being. The nature and dynamic of relationships may be different for each relationship and across time (Antonucci & Wong, 2010).

2.7 Family Care for the Elderly

Families are the cornerstone of all human societies which have been discovered in every human culture. Family as a social institution is closest to the individual and its influence can be felt in everyday lives (Morgan & Kunkel, 2006). The family is a place where a person expects and finds the most encouragement, comfort and security and help if needed. The elderly are most happy with family life, especially with their

children (Läidmäe *et al,* 2012). Many cultural settings show that; older people prefer to be in their own homes with their families and communities (WHO, 2011).

Caring is an essential component of the human phenomenon and crucial for the continued survival of the human species as social and cultural as well as biological beings` (Leininger, 1991). Primarily, care provision is the responsibility of the family; however, society also has an obligation to assist the elderly who cannot cater for themselves. Familial support and care-giving among generations run in both directions, where the elderly often care for other family members while families, especially adult children are the primary source of support and care for their older relatives (Schulz & Eden, 2016).

Old-age support and care which can be provided by the family may be simplified into three categories: physical, social or emotional and economic. Social and emotional support from the family comes through the conjugal relationship as well as through adult children, although the former is likely to be more important for men than women. Economic support comes in the form of financial assistance through remittances, gifts, personal source of income which is used to satisfy the needs of the elderly (Lloyd-Sherlock, 2004). Economic or financial support may be provided as remittances by children, other family members, benefactors or from the elder`s own investments and savings.

The elderly have different special needs which can be of mental and behavioural health problems as a result of the aging process or disease conditions. Mental health disorders include anxiety and depression, which can affect the elder`s ability to perform physical tasks. Helping address these problems are important to alleviate

emotional suffering and improve physical and mental health and promote a better quality of life for the elderly (Carol, 2008)

Until recently, elderly people in developing countries enjoyed considerable status, respect, care, and social and psychological support from their families (Dalton-Hill, 1993). Migration, urbanisation, changes in value systems and aspirations, changes in the role of women, and the breakdown of the family system have eroded traditional familial support (Indian Council of Medical Research, 1996). The elderly people suddenly find themselves poor, uncared for, and without power or influence (Press, & McCool, 1972). The changes have weakened the respect for the elderly and the commitment to supporting them (Knodel & Ofstedal, 2003). In spite of these challenges the family still plays vital roles in the wellbeing of the elderly.

Dependency in later life results from a loss of labour capacity, which means a potential loss of income, along with poor health status and disability leading to a lack of autonomy (Quadagno, 2005). This necessitates the need for care for the elderly to enable them to live a fulfilling life with dignity, hence the need for elder care either from the family, community or state. The elderly as much as the young require care for instrumental and functional support for their survival (Zimmer & Dayton, 2005) in different forms when they are unable to perform such functions as part of their activities of daily living. As a result of diminishing strength or health problems; the elderly need someone to help them with such activities like washing, shopping, cooking and other activities that involve the use of the elder`s physical strength. Physical support is required when the elderly person is ill and, or too frail and weak to attend to himself or herself. The spouse, children or any member of the family may

provide such a function either with or without external support at home or in an institution if constant medical attention is required.

The global expectation governing the type and amount of Eldercare varies from culture to culture. For example, in Asia and Africa, the responsibility for elder care lies firmly on the family (Yap *et al.,* 2005). Many countries in Asia use government established elderly care facilities quite infrequently, preferring the traditional methods of being cared for by younger generations of family members. Cultural attitudes in Japan prior to approximately 1986 supported the idea that the elderly deserve assistance from their families (Ogawa & Retherford, 1993). In the United States, decisions to care for an elderly relative are often conditionally based on the promise of future returns, such as inheritance or, in some cases, the amount of support the elderly provided to the caregiver in the past (Hashimoto, 1996).

In some industrialized countries, for example, old age support comes to a great extent from large public or private pension and health systems, while in most developing countries, it is the exclusive responsibility of the family. Most westernized countries fund their aged care system by a combination of local, state and federal government, non-governmental and private (formal care) sources. In some countries including Israel, there is no strict division of roles between the formal and informal support systems (WHO, 2018).

There is also a global variation in elderly care, such as formal and informal, as well as differentiating cultural perspectives on elderly citizens. These differences are based on perceptions toward aging by the various cultures the world over. In Africa, aged care is the sole responsibility of the family, friends and neighbours (Rademacher *et al*, 2008). The family is and remains the key institution for the care of the elderly and

their living arrangements are fundamental determinants of their well being (Knodel & Debavalya, 1997). The family is the appropriate place to nurture not only gratitude and honour, but also such qualities as loyalty and altruism. Encouraging family members to care for one another would hopefully engender these values in children, and ultimately instil in them a sense of obligation towards their fellow human beings. The traditional care system in Africa was rooted in complex family patterns that included reciprocal care and assistance among generations with older persons being not at the receiving end but also fulfilling active meaningful roles (Apt, 2002).

In Ghana, like many other African countries, nutritional and material protection of older people has traditionally been the responsibility of the family with elders` dependence on family support and obligation of adult children to provide for them (Lloyd-Sherlock, 2004). Care within the family includes providing support, shelter, security and reducing elder stress. Family roles and expectations are shaped by cultural values (Burr *et al.*, 1979), with varying degrees of prescriptive custom. This is shaped by variations of family structure and degrees of family cohesiveness (or collectivism), gender roles and relationships with authority figures, extended families and available social support and the presence of family structures for decision making.

In the Ghanaian context, it is enshrined in the cultural value that the family gives material protection for older people and especially adult children to provide for their elderly parents as embedded in the customary moral code (Nukunya, 2003). This is encapsulated into a proverb: if your elders take care of you while you are growing your teeth, you must in turn take care of them when they are losing theirs (Apt, 1996). With rare exception, the social contract in most cultures has assumed that children

take care of aging parents just as parents once took care of their helpless children. For this, Given, & Given (1991), stated that, a child's duty to care for the parents is a fundamental Judeo-Christian value; that states that each child should honour the father and mother and it is the first of the commandments directed to man as a social being.

Yap et al., (2005), described the relationship between parent and child as a covenant whereby both parties are bound not only to each other, but with a third party God or the state or both. Families, as a matter of honour and respect, must care for their own aged. Though family care givers may be less able to provide adequate care due to decrease economic resources, limited knowledge of services, few appropriate coping resources and little experience in resolving cultural conflicts with elderly parents (Berkman, 2006), the Ghanaian families still remain the support of the elderly.

2.8 Caregiving

In sub-Saharan Africa, old age, poverty and economic security in old age is inextricably linked with emerging trends and patterns of family support for older people. In countries such as Ghana, where no formal adequate old age income security provision exists for the vast majority of older people (e.g. Pension schemes), and where gainful employment opportunities for those who are able are extremely scarce, the extent of family material support for old age is crucial in shaping their economic wellbeing (Aboderin, 2001). Now, however, all indications is that for many older people this family support no longer provides the necessary protection and even if, it is insufficient to meet even their basic needs. Caring in the generic sense refers to assistive, supportive or facilitative acts towards or for another individual or group with evident or anticipated needs to ameliorate or improve a human condition or

lifeway (Lenninger, 1991). Care includes love, support, respect for the human rights and dignity of people, and patience towards others. Elderly care or elder care (also known as aged care), is the fulfilment of the special assistance to persons who are sixty years and above who have functional limitation or impairment that prevents them from living independently therefore losing the desire of aging in dignity. A caregiver is a paid or an unpaid individual responsible for caring for another individual with impairment (sick or dependent) individual, to perform daily tasks such as eating and personal hygiene, in addition to administering routine medication and accompanying the individual to health care services or other services, necessary in their daily routine, excluding techniques or procedures identified as being exclusive to other legally established professions (Anderson & Gerbling, 1999).

When aging loved ones require care in their later years, it is common for a family member to step in and help. An informal caregiver is a family member, friend or a volunteer who provides care and support for an aging loved one. The care-giver may provide any type of physical or emotional care for an ill or disabled family member. Usually, family caregivers are females (most of whom are married) but males can become caregivers at an older age. Social support comes from the family; however, they may not be able to provide the needed social support due to their own challenges and the level of the health condition of the elderly. Community-based services like adult day care centres, religious groups, and meal delivery services can be of great importance to the elderly. These social groups usually plan activities that promote positive self-awareness, provide not only physical support and conversation, but also help the elderly defeat loneliness and isolation (htpps://www.longtermcarelink.net/article-2011-08-8 htm) There are different types

of caregivers classified by their level of responsibility and caregiving tasks (Keith, 1995). Primary caregivers who are normally identified by care recipients or their proxies have the highest level of responsibility regarding care and they perform the largest number of caregiving tasks.

They provide care alone or in conjunction with other helpers. Secondary caregivers are identified by the primary caregiver as persons who performed tasks at a level similar to that of the primary caregiver, but without the same level of responsibility (Dwyer & Miller, 1990**).** They are, therefore, caregivers, but are not in charge of making decisions about the care recipient's support and care but only provide care in conjunction with primary caregivers. Tertiary caregivers are usually identified by the primary caregiver and provided care with the primary caregiver. They have little or no responsibility for making decisions regarding the care recipient; they however perform specialized tasks such as grocery shopping, yard work, or paying bills, however, they can provide care in the absence of other caregivers, typically to high-functioning older people (Anderson & Gerbling, 1999).

A variety of tasks are associated with being a caregiver. Caregivers are very essential to their care receivers as the latter largely depend on the former for survival. They provide essential services depending on the degree of needs of the care receiver. Tasks can range from providing the elderly with transportation to helping him or her with bathing and dressing. Caregivers` care consists of personal care and this includes assistance with washing, dressing, eating, mobility in the home, going to the bathroom, and all other Assisted Daily Living (ADLs) activities (Wolff *et al.*, 2016). They also provide household management which includes cleaning, cooking, laundry and all other household chores and sometimes manage the household of all its

residents. Sometimes, however, the elderly person's condition necessitates performing additional tasks, such as preparing special meals or doing more laundry (if the elderly person is incontinent). Caregivers may also provide errands outside the home and this may include going to the bank and post office, purchasing medications, and accompanying the elderly for medical treatments (Spillman *et al.,* 2011; NAC & AARP Public Policy Institute, 2015).

They usually help with medical care by assisting the elderly person to take his or her medications. Many also provide more complex medical care, such as changing bandages, catheters or stomas, and giving injections. Caregivers may also mediate between the elderly and other community services. This is another important role assumed by caregivers, particularly when the elderly person has difficulty with daily functioning. Nearly all caregivers provide some financial support and participate in the expense of caring for their elderly relative (Schulz and Eden, 2016).

Performing all of these tasks daily can affect the caregiver`s emotional, psychological and physical life. Care giving can have an effect on the caregiver as well as the care recipient as it can be both rewarding as well as challenging to both the care provider and the care recipient. Merrill (2016), posits that in caregiving over a period of time, the career progresses through different stages determined by the older family member's decline, remissions and relapses in illness, waxing and waning of assistance from others, and eventual death. Adult caregivers are confronted with conflicts regarding their aging parents. According to Del Campo *et al., (*2000), despite the wide geographic dispersion of contemporary extended families, there is evidence that emotional attachments and some degree of caregiving between adult children and their parents is accomplished across large geographical distances.

The caregiver of the elderly stands to enjoy some benefits from the care recipient or the care being provided. Elderly parents can be a source of both financial and emotional support to their caregiver and family as many look to their elderly parents for financial help with living expenses (Del Campo *et al.,* 2000). Caregiving can help foster bonding between the caregiver and the elderly especially where the elderly receiving the care are a spouse, parent or a close relative of the caregiver. There is always a sense of personal satisfaction in being able to give back to parents, close relatives when the provider knows his or her efforts are receiving good results or appreciation from the receiver (Beach, 2000). There can also be material rewards in the form of money, jewellery, land, estates of the elderly in appreciation for services being rendered by the caregiver. Knowledge, experience, wisdom and family history and traditions acquired from the elderly can be fulfilling to the caregiver.

Guidance and advice from the elderly; a sense that she or he is providing a role model to children and therefore investing in their own future care; and the positive feedback from the community can have a positive impact on the perceived status of the caregiver. Caregiving can also be a developmental task from middle to late life through which the caregiver gains maturity and wisdom in his/her own later years (Blenker, 1965). Care of elderly parent is likely to awakening the zeal to be identified as a major source of instrumental support (Suitor & Pillmer, 1996). Caregiving can also be stressful for the caregiver, especially where the care recipient has more physical disabilities or other health challenges like dementia, Alzheimer`s disease and terminally ill conditions. The relationship between caregiving and health is generally described in terms of stress. (Aneshensel *et al.* 1995), posits that, in the caregiving context, stress can be defined as the problematic conditions and difficult

circumstances experienced by caregivers. Stress generates an intersection between one`s environment and internal state. This he said to arise when the demands posed by a care recipient`s condition collide with a caregiver's subjective ability to respond or when these demands obstruct the pursuit of other objectives**.** Some caregivers experience more deleterious health outcomes; others are less affected by stress due to this intersection between the individual and his or her environment (Given *et al.,* 1994).

As family caregivers put in their best in their caregiving duties, they can neglect their own wellbeing which can impact negatively on their physical, mental, emotional and financial health (Navaie-Waliser *et al.,* 2002). Because adult child caregivers are often sandwiched between the needs of the older parent and the needs of their children, they are at risk for burnout. Stress may weaken the immune system which can result into physical limitations, depression, hypertension and other health problems for the caregiver (Given *et al.,* 1993)**.** A study found out that, women providing care for disabled, elderly were more likely to report a personal history of hypertension and diabetes compared to non-caregiving women (The Commonwealth Fund, 1999).

Caregiver may also experience sleep deprivation resulting from the elder`s sleep-wake cycle and this can have negative implication on the caregiver`s health, especially where the carerer has his or her career and family simultaneously to attend to. Caregivers also can experience decline in health status if the care demands higher physical activities like lifting and helping with mobility; the end result of which is physical and emotional stress. Caregivers' health affects the level of support they can provide and their ability to cope with the burden and stress (Kramer, 1993). As the

caregiver fears to lose the trust imposed on him or her by the elderly, he or she may refuse to seek for assistance in the discharge of duties even when stressed up; this can result in guilt feeling leading to depression. Caregiving takes up a great deal of time, especially when the elder`s condition is such that it needs much assistance, it then becomes difficult for the caregiver to have leisure or socialize meaningfully with others (MetLife, 2010). When caring is such that, much time is spent, then, other equally important activities tend to suffer due to time constraint. Caring for the elderly at home may predispose the caregiver to poverty (Wakabayashi & Donato, 2006). Despite the physical and emotional burden of caregiving and risk factors of diseases, women caregivers are less likely to have their own health needs met.

Caregiving also has implications for lower levels of employment; the caregivers` participation in the labour force and for the working life of those who are employed, are more often affected. For example, working fewer hours than they like, missing work days or hours, being preoccupied with errands or concern for relatives during work hours and these affect the quality of their work. These may impact on career continuity and job choices and can lead to the choice of career the care-giver makes for temporary work contracts for available jobs may not be enough in terms of time to accommodate caring responsibilities. Some care-givers may decide to quit their job to enable them to have time to care and these can lead to poverty, a deterioration of human capital or skill depreciation or the loss of career advancement (Schulz, 2016).

In spite of these challenges of caregiving, Watson (1988) argues that caring is an interpersonal process between two people with transpersonal dimensions and this can be best accessed within the family. For even those elders who are in nursing homes, community care centres, family support and visits are seen among most individuals

especially those with greater health problems. Though providing caregiving has the potential for detrimental effects, there is evidence that home-based caregiving may also provide benefits to the caregivers, including better psychological and cognitive health and social status in a culture where caregiving is highly valued, especially if the burden of care is not too high (Bertrand *et al.,* 2012; Buyck *et al*., 2011). Positive aspects of caregiving are associated with lower levels of depression and lower perception of burden (Cohen, 2002). The benefits derived from caregiving further strengthen families as units of safety and support and should be areas of positive focus on supporting the resiliency of families and well-being of both elders and their caregivers.

Frahm (2009) suggests that, it is vital to involve family members in the care of residents with dementia and terminally ill conditions. It is a fact that the family provides emotional support, advocates for the elderly and sustains a strong relationship with them through regular visits (Williams *et al*., 2012). Advocates of private support laws argue that filial responsibility will encourage positive relationships, as the family, unlike the state supported institutions, can uniquely provide warm and comforting environment for an ageing person. In the face of all the challenges and arguments, families still carry the primary moral obligation for the care and cost of aging parents and close relatives. Indeed, throughout the developing world, the family is the key institution for older adults, and their living arrangements are a fundamental determinant of their well-being (Albert & Cattell, 1994).

2.9 Importance of Food

Food is necessary for an organism to survive and prosper physiologically. Adequate nutrition and good health are the right of all individuals, and form the basis of the development of a nation (Wakimoto, & Block 2001). In humans, food and eating behaviours are embedded in a socio-cultural matrix. In addition to biological nourishment, food serves social and cultural functions. These functions include the development of interpersonal relationships as well as feeling of security. Food may also serve to express status, religion, ethnic identity and feeling of pleasure and creativity.

2.9.1 Aging and Nutrition

The reason for longer life spans around the world is better health care which comes as a result of education regarding eating for health; good eating habits can help one to live longer (Shikany & White, 2002). Many of the diseases suffered by older persons are the result of dietary factors, some of which have been operating since infancy. These factors are then compounded by changes that naturally occur with the ageing process. The progressive decline in immunity associated with aging has been in part attributed to nutritional deficiencies (Chandra, 1990). Degenerative diseases such as cardiovascular and cerebrovascular disease, diabetes, osteoporosis and cancer, which are among the most common diseases affecting older persons, are all diet-affected.

Nutrition is a powerful modifiable factor that may delay or prevent chronic diseases in later life and more importantly, will potentially lead to additional years of health, productivity and higher functioning. For those who are inactive, good nutrition enhances skin integrity and prevents skin breakdown (Shikany & White, 2002). What

one eats must be directly linked to longevity in many cultures around the world. Poor eating and dietary habits can lead to common health conditions and this can affect the aging process. However, older adults may be at risk for inadequate nutrition because of physiological changes related to organ function declines, which can affect digestion, metabolism and absorption of nutrients (Luecknotte, 2002).

Whereas food intake and food patterns of older people are influenced by financial status (Howarth, 1991), most Africans enter old age after a lifetime of poverty, poor access to healthcare and a diet that is usually inadequate in quantity and quality, making the attainment of good health in old age a dilemma for the majority (Charlton, & Rose, 2001). Heredity and good nutrition slow down the process of aging so that the individual enjoys physical and mental vigour in old age. The goal of nutritional care should therefore be to help the aged live a healthy, purposeful and independent life. Nutritional needs change throughout life and as people age, multiple changes occur that affect the nutritional status of the individual.

For the elderly, these changes may be related to normal aging processes, medical conditions, or lifestyles (Culross, 2008). In order to meet the nutritional needs, consideration must be given to more than just diet. Knowing the causes of changing nutritional needs and dietary preferences is needed to understand an elder's nutritional status. Sacropenia, or the loss of lean muscle mass, can lead to a gain in body fat that may be more noticeable by loss of strength, functional decline, and poor endurance. This loss also leads to reduced total body water content (Tabloski, 2006). Another common loss related to aging is changing in bone density, which can increase the risk for osteomalacia with osteoporosis (depletion of bone tissue mass) due to calcium and vitamin D deficiency. For the elderly who are housebound and who therefore have a

dietary requirement for vitamin D exposure to ultraviolet light is of great importance (Amella, 2007).

A decrease in saliva production (xerostomia) and changes in dentition alter the ability to chew and may lead to changes in food choices (Culross, 2008). There is also a decrease in gastric acid secretion that can limit the absorption of calcium, iron and Vitamin B12. Prolonged deficiency of Vitamin B12 can result in pernicious anaemia (Tabloski, 2006). In the elderly, there is a decreased secretion of pepsin which affects protein digestion, decrease in bile secretion make lipase digestion slower and make digestion inefficient. For this reason, excessive fat intake can cause indigestion and absorption of fat and fat soluble vitamins (A, D, E, and K). Peristalsis is also slower and constipation may be an issue because fluid intake is decreased. Appetite and thirst deregulation may also occur, leading to early satiety and a blunted thirst mechanism. Sensory changes affect the appetite in most cases resulting in malnutrition (Clarke, 1998). Vision loss makes shopping, preparing food, and even eating more difficult. Diminished taste and smell take away the appeal of many foods and may lead to preparing or consuming food that is no longer safe (Breslin, 2013).

Many other factors that are not necessarily part of the normal aging process, but are often related to aging, create changes in appetite, what foods are chosen for meals, and the overall nutrition of the individual. Sedentary lifestyle, social isolation, loneliness, or depression can lead to malnourishment. Sense of loss or depression resulting from loss of loved ones, productivity, sense of worth, body image, mobility or income can affect the nutrient intake of the elderly. An eating pattern may be erratic in some older persons; they may overeat one day and nibble the next day. Medications can also change how nutrients are absorbed or how food tastes (Lewis,

1995). Income, socioeconomic status and cognitive impairment are other determinants that may affect eating habits and food choices (De Irala-Estevez *et al*., 2000).

2.10.2 Nutrient Requirements of the Elderly

Food nutrients are chemical constituents of food necessary for proper body functioning. They supply the body with heat and energy, aid in the growth and repair of worn out body tissues and are involved in the regulation of body processes. Progressive changes associated with aging are capable of affecting nutritional requirement of the elderly (McGraw-Hill, 2003)). The need for optimal nutritional status of older people requires knowledge of individual preferences and habits, from both their early and current lives. It is important to pay attention to risk factors that could compromise an individual's ability to independently manage their diet, such as major life events and hospitalization. Because of the loss of lean muscle mass, the overall caloric intake requirement decreases while the need for other nutrients remains relatively unchanged. This makes eating nutrient-dense foods even more important for older adults (Kyle *et al*., 2001).

Due to decreased appetite and poor digestive capacity, older people are likely to consume less protein. A better protein balance can be achieved by combining plant diets like beans and kenkey, which are complete in amino acid content and are easy to chew and less expensive. Rich sources of protein are all pulses, legumes, sprouts, chicken, fish, meat and egg. Deficiency of protein is common in the elderly and is one of the contributing factors to oedema, anaemia and lowered resistance to infections in the elderly. The food should be a little richer in protein than the other normal food (Brown, 2002)

2.10.3 Minerals

Minerals are homogenous substances that are necessary for the proper functioning of the body. The amount of a particular mineral needed in the body is not necessarily related to its relative biological importance. Each of these essential nutrients (minerals) serves the body in one or more different ways, such as structural components of the skeleton, the maintenance and regulation of the body`s colloidal systems and in the maintenance of the acid- base equilibrium. They also serve as a component or an activator of enzyme systems and also in other biological units or systems. Minerals are interrelated in functions and thus a deficiency of one may affect the functioning of the others (WHO, 1998).

Calcium-the need for calcium, increases during old age, especially for women after menopause. There is increased de-mineralisation and osteoporosis in bones in the later years of life. This can give rise to spontaneous fractures and increased incidence of tooth decay. Food alone may not be capable of meeting the entire requirement, since calcium is available in a limited number of foods; hence calcium supplements might be required. Food sources of calcium are-milk and milk products like cheese and curd. Green leafy vegetables are also a good source (Heaney *et al* 1982).

Iron is needed for the formation of haemoglobin and its deficiency produces anaemia. Iron deficiency anaemia can cause fatigue, weakness and listlessness which, if present add to the variety of factors reducing the quality of life for many of the elderly. Sources of iron are- liver, green leafy vegetables like spinach, whole wheat bread, iron rich dry fruits, fruits such as apple, gooseberry (Modgil, 2011).

Sodium- Moderate amount of salt in diet helps to improve the palatability and acceptability of the diet. The total salt free diet should not be followed except under

the advice of a physician for the treatment of a specific disease. Salt is naturally present in almost all fruits and vegetables. Foods that have a very high concentration of sodium such as salted fish, pickles and chutneys should be avoided as a part of the daily diet (Fried *et al.*, 2001).

Zinc- some features of old age, such as delayed wound healing, decreased taste and anorexia are also associated with zinc deficiency. However the normal diet suffices for the body's target for zinc and very rarely there may be the need to take a zinc supplement (Tulchinsky, 2010).

2.10.4 Vitamins

Poor appetite, impaired absorption, constipation and general malaise may be caused in part by inadequate intake or improper absorption of vitamins. While the body's demand for vitamins does not increase in old age, it is particularly important that the factors interfering with utilization be corrected, or that the intake should be sufficient to compensate for the poor utilization (WHO, 1995).

Vitamin A: The elderly may become deficient in vitamin A as a result of alcohol consumption, and probable liver disease. This may lead to dry skin or dry eyes, photo-phobia, night blindness and hyperkeratosis**.** Vitamin A is mostly found in foods of animal origin like liver, butter, whole milk, and egg yolks. However, the body is capable of converting its precursor beta-carotene into vitamin A. These precursors are found in all dark green vegetables and yellow-orange fruits and vegetables (Rana, 2014).

Vitamin B_2 (Riboflavin): High consumption of alcohol or caffeinated tea, pernicious anaemia and diuretics may cause muscle weakness, heart disease, dementia and

anorexia due to a deficiency of thiamine (vitamin B_1). Malabsorption syndrome, oral hyperglycaemia, potassium supplements and vegetarian diets are possible causes of riboflavin deficiency in the elderly and may cause a riboflavin deficiency. The richest sources are liver, milk, dark green leafy vegetables, enriched breads and cereals

Niacin: Good sources are grain products, meat, poultry, fish, nuts, and legumes. Good sources are meat, poultry, fish, and grain products. Vitamin B_{12} (Cobalamin) is found in animal foods such as milk, eggs and meat.

Vitamin D: Muscle weakness and atrophy, osteoporosis and fractures may result from deprivation from sunlight and also from the effect of some drugs**.** It occurs naturally only in foods of animal origin like liver, butter, oily fish and egg yolks. The human body from its naturally occurring precursors also produces it. Aging skin may have diminished capacity to synthesize vitamin D hence the requirement in the elderly may be a little higher. In the elderly when light exposure is poor, for example, in those who are housebound or institutionalized, vitamin D status is likely to be poor. Milk, egg yolk, cod liver oil, tuna should be included in diet of such people (FSA, 2015).

Vitamin E: malabsorption syndrome may lead to peripheral neuropathy, gait disturbances as a result of vitamin E deficiency. Vegetable oils are the richest sources of this vitamin. The vitamin E content of animal foods is generally low. Good sources are nuts, seeds, whole grain and wheat germ (Modgil, 2011).

Vitamin K: Rich sources are dark green leafy vegetables. Lower levels of this vitamin are found in cereals, dairy products, and fruits. Mineral oil, antibiotics and drugs may interfere with the absorption of vitamin K and the elderly may experience

haemorrhage involving the gastrointestinal, urinary or central nervous disorders (Rana, 2014).

Water: It is very essential as it stimulates peristalsis and thus aids in combating constipation. The kidneys also need water to dispose waste more effectively. Some elderly individuals have a fading sense of thirst and go for longer periods without water. Others avoid drinking enough water for the fear of incontinence. This may lead to dehydration that in turn can give rise to confusion, headache, and instability. Water can be consumed as such or in the form of buttermilk, soups, and juices (Leslie & Hankey, 2015).

Fibre: Constipation is a common complaint in the elderly. This may be due to decreased elasticity of the digestive tract that hampers normal peristalsis, reduced consumption of food, improper food selection and inadequate food intake. There should be attempting to increase the consumption of fibre rich food, but it should be done gradually otherwise it may result in bowel discomfort, distension and flatulence, but fibre of tender vegetables and fruits will make food mass go down the intestinal tract. Fibre also helps in reducing cholesterol that contributes to atherosclerosis

Fat: the consumption of some drugs, alcohol and laxative can affect the fat absorption level in the elderly, which may lead to the body's inability to absorb vitamins A, D, E, and K which are fat soluble (Lange-Collette, 2002).

2.10.5 Malnutrition in the Elderly

Malnutrition literally means "bad nutrition" and technically includes both over- and under- nutrition. In the context of developing countries, under-nutrition is generally the main issue of concern, though industrialization and changes in eating habits have

increased the prevalence of over-nutrition. Older people are particularly vulnerable to malnutrition. Many of the diseases suffered by older persons are the result of dietary factors, some of which have been operating since infancy. These factors are then compounded by changes that naturally occur with the ageing process (http://www.who.int/hpr/ageing).

WFP (1991) defines malnutrition as "a state in which the physical function of an individual is impaired to the point where he or she can no longer maintain adequate bodily performance process such as growth, pregnancy, lactation, physical work and resisting and recovering from disease." Simply put, malnutrition is the state of being poorly nourished. It may be caused by the lack of one or more nutrients (under-nutrition), or an excess of nutrients in the body (over-nutrition). Older adults` nutritional intake may be related to chewing or swallowing difficulties as well as diminished interest in food resulting from sensory loss e.g. taste and smell (Swartzberg *et al*., 2001).

Malnutrition can result from a lack of macronutrients (carbohydrates, protein and fat), micronutrients (vitamins and minerals), or both. Macronutrient deficiencies occur when the body adapts to a reduction in macronutrient intake by a corresponding decrease in activity and an increased use of reserves of energy (muscle and fat), or decreased growth. Consequently, malnourished individuals can be shorter (reduced growth over a prolonged period of time in the case of children) and/or thinner than their well-nourished counterparts. 'Hidden Hunger', or micronutrient malnutrition, is widespread in developing countries (FAO, 2013). It occurs when essential vitamins and/or minerals are not present in adequate amounts in the diet. The most common micronutrient deficiencies are iron (anaemia), vitamin A (xerophthalmia, blindness),

and iodine (goitre and cretinism). Others are vitamin C (scurvy), niacin (pellagra), and thiamine or vitamin B1 (beriberi). These can also occur during acute or prolonged emergencies when populations are dependent on a limited, unvaried food sources (WHO, 2000).

Proper nutrition with emphasis on fruits and vegetables has long term health benefits and contributes to physical, cognitive and overall well-being (Tsai *et al*., 2007). However, the cost associated with healthier food on a limited budget is an issue for many elderly. Cognitive functions can be impacted by nutrition; specifically, malnutrition can cause long-term cognitive impairment (Fillit *et al.*, 2002). Malnutrition is not an inevitable side effect of ageing, but many changes associated with the process of ageing can promote malnutrition. For example, ageing is frequently associated with decreases in taste acuity and smell, deteriorating dental health, and decreases in physical activity, which may all affect nutrient intake (Watson, 2006). Any change in nutrient intake can lead to malnutrition with its potentially serious consequences. Therefore, the treatment and prevention of malnutrition, which is more common in the older age group, is an important challenge for the caregivers.

2.10.6 Risk Factors That Affect Nutrition in the Elderly

Certain behaviours and common disease processes are likely to interfere with nutrition and digestion in the elderly. Risk factors affect every aspect of digestion and nutrition in the elderly and can significantly influence eating patterns and nutritional intake. Anorexia, depression, mental or physical impairment can affect the calorie (energy) level of the elderly and this can result in weight loss, lethargy, edema and/or anaemia (WHO, 2013).

2.10.7 Factors Affecting Food Intake of the Elderly

Good food and nutrition are essential components of health related quality of life, particularly by the elderly (Amarantos *et al.,* 2001). As a person ages, the ability to work as before diminishes and if one works for salary, retirement is also inevitable and these reduce the income of most elderly. Poverty is a fact of life for most elderly, especially in Africa and most underdeveloped nations. Due to their diminished source of income, the elderly cannot buy food using the criteria of past eating habits for optimal nutrition (Rose, 1991). They may develop a tendency to purchase cheaper foods that are high in refined carbohydrates such as cereals and bread.

Education also affects the nutritional status of the elderly. With better education, the individual establishes a good eating habit, even before becoming an elderly. There is an establishment of good health habits like exercise, avoiding excessive drinking habit and the formation of good food habits and values. Education in the early years also helps the individual go in for a good job. According to Ross and Wu (1996), quoted by Quadagno (2005), education is the key to one`s position in the stratification system. Education may therefore affect nutritional status with limited education being associated with poor nutrition and less use of dental services (Vargas *et al*., 2001).

Socio-cultural factors that affect food intake of the elderly are varied and have a greater impact on food nutrients as every elderly is the product of years of experience in a socio-cultural setting modified by only individual perception and choice. Dietary ideas are long standing and difficult to change. Dietary habits are often associated with memories of youth, pleasant and unpleasant situations (Ebersole *et al.,* 2004). Psychosocial factors are likely to affect the elderly appetite and other patterns. Any changes in mealtime, as it may occur through loss or disability of a spouse are likely

to have a negative impact on eating patterns (WHO, 2000). Eating alone has been associated with a decline in caloric intake when compared with a caloric intake of people who eat in the company of others and loneliness has been identified as a risk factor for anorexia in the elderly. When a long-term pattern of preparing meals for the family and spouse has been established, it may be especially difficult for the elderly to adjust to purchasing, preparing and eating food for just one person. Similarly, elderly who have never participated in the purchase or preparation of foods may have great difficulty assuming these tasks after the loss of a spouse or other persons who performed these tasks (Quadagno, 2005).

Stress and anxiety affect digestive processes through their influence on the autonomic nervous system. Depression, which is common in the elderly, is typically accompanied by anorexia and loss of interest in food. Confusion, memory problems and other cognitive deficits may significantly interfere with eating patterns and the ability to prepare food (Vetta *et al*., 1999). Environmental factors affect the ability to obtain and prepare food as well as its enjoyment. Older people with functional impairment and living alone may be limited by environmental factors like transportation and staircases to go to the market to shop for food and may rather rely on buying from wayside vendors at rather expensive prices with limited food items to choose from (Brown, 2002).

Myths and misunderstandings may have a detrimental effect on food intake and behaviours related to bowel functions. The elderly may avoid certain foods on health grounds, for example, some people hold the belief that roughage in the diet is detrimental to the health of the elderly but on the contrary it is rather good for bowel movement. Fluid intake may be restricted if functional limitations such as impaired

mobility or manual dexterity, interfere with either the ability to obtain liquids or the ease to urinary elimination. Reduced fluid intake can have a number of detrimental consequences such as constipation, xerostomia and diminished food enjoyment (Ebersole *et al.,* 2004)**.**

2.11 Theoretical Framework

Theories are formulated to explain, predict, and understand phenomena and, in many cases, to challenge and extend existing knowledge, within the limits of the critical bounding assumptions. The theoretical framework is the structure that holds or supports a theory of a research study. Theoretical framework introduces and describes the theory which explains why the research problem under study exists. Applying existing theories to research, in the form of a theoretical framework, is necessary to advance knowledge of what is already known toward the next steps to be taken (Kumar, 1996).

2.11.1 System Theory

Family system theory emerged from the General Systems Theory and it had many applications for families and other social systems. A system is defined as a bounded set of interrelated elements exhibiting coherent behaviour as a trait (Constantine, 1989). Webster (1979) defines system as an assemblage of objects related to each other by some regular interaction or interdependence. Systems are, therefore, integrated set of parts or units that function to accomplish a set of purposes. The systems also have subsystems which are components of the larger system and so function together for the purpose of satisfying the same conditions as a system and play a functional role in a large system. For a system to function effectively, each part

or subsystem has a functional role to play. As they play their specific roles each system interacts with and influences other systems in the environment (Bertallanfy, 1973).

2.11.2 Family System

Bowen`s family systems theory is a theory of human behaviour that views the family as an emotional unit and uses systems thinking to describe the complex interactions in the unit. Families are considered systems because they are made up of interrelated elements or objectives that exhibit coherent behaviours, have regular interactions, and are interdependent on one another. It is the nature of a family that its members are intensely connected emotionally. Family members so profoundly affect each other's thoughts, feelings, and actions that it often seems as if people are living under the same emotional skin. People solicit each other's attention, approval, and support and react to each other's needs, expectations and distress (Fingerman & Bermann, 2000).

The connectedness and reactivity make the functioning of family members interdependent. A change in one person's functioning is predictably followed by reciprocal changes in the functioning of others, for example, if the head of the family becomes old and can no longer be in active work, his role as the family breadwinner is taken over by another member of the family (preferably any of his children) and this can affect his dependents, which will necessitate changes in roles and expenditure of family members. Families differ somewhat in the degree of interdependence, but it is always present to some degree (Wells, 1997). The emotional interdependence presumably evolved to promote the cohesiveness and cooperation families require for protecting, sheltering, and feeding their members. Elderly parents may depend on their children for their basic needs of food, shelter and clothing, even security just as

their children also depended on them in their childhood days for those same needs. Children may also depend on the experience of their adult parents to develop a good sense of direction in life (Schulz, 2016).

2.11.3 The Components of Family Systems Theory

Components of all systems are inputs, throughputs, outputs and feedback. Demands are goals and events that give direction to managerial activities. Events as inputs are un-expected low probability or pertinent occurrences that require action. Resources are means that provide the characteristics or properties capable of meeting demands placed on the family by goals and events. Resources may become available for productive activities, internal to the family system or through interaction with other systems and they are classified as human and non-human. While human resources are skills, abilities and knowledge of the people and tangible goods available for consumption or which will be used to produce other goods (savings and investment represent the material resources) of the family (Kyle *et al*., 2001).

Input and output are other theoretical terms that are used within the system theory. The meaning of the term input is when energy flows into a system over different systems borders. The term energy when relating to relationships can be persons who contribute to the development of a system. Output is defined by the effects that the energy that has passed through the systems has on the surroundings (Payne, 2005). Family Systems consist of elements which are the members of the family, such as mother, father, spouse, children and the extended family members. Each element has characteristics; there are relationships between the elements and the relationships function in an interdependent manner. All of these create a structure or the sum total of the interrelationships among the elements, including membership in a system and

the boundary between the system and its environment. There are predictable patterns of interaction that emerge in a family system. Parents are responsible for nurturing their children and children are to obey their parents. These repetitive cycles help maintain the family's equilibrium and provide clues to the elements about how they should function (Constatine, 1986).

Systems also have boundaries and can be viewed on a continuum from open to close. Every system has ways of including and excluding elements so that the line between those within the system and those outside of the system is clear to all. If a family is permeable with vague boundaries, it is considered "open." Open boundary systems allow elements and situations outside the family to influence it. It may even welcome external influences. Closed boundary systems, however, isolate its members from the environment and seems isolated and self-contained. No family system is however completely closed or completely opens (Webster, 1979).

Every family system, even though it is made up of individual elements, results in an organic whole. Overall family images and themes are reflected in this holistic quality. Unique behaviours may be ascribed to the entire system that does not appropriately describe individual elements. Messages and rules are relationships, agreements which prescribe and limit family members' behaviour over time. The near environment for families has been described as that part of the environment physically, psychologically, and socially closest to the family, for instance, the home and the local community, which would include family, friends, colleagues, and schoolmates. One's house, clothing, neighbourhood buildings, parks, are examples of the human built environment that are in close proximity. The socio-cultural aspects of the environment include the presence of other human beings, as well as abstract

dimensions such as norms, aesthetic judgments, language, and customs (Fingerman & Bermann, 2000). The environment serves as the source of family resources that is vital to family survival. Family organization transforms resources into useful forms for family consumption. By the way families choose to sustain and socialize members, they help to define the environment, and in turn the environment, enhance or limits the potentials for human development (Joppe, M.2000).

2.11.4 Maslow`s Hierarchy of Needs

Physiological Needs: The hierarchy of needs is often depicted as a pyramid consisting of five levels. The lower four layers of the pyramid are what Maslow called 'deficiency needs' or 'D-needs'. With the exception of the lowest needs - physiological ones (food, clothing and shelter) if the deficiency needs are not met, the body gives no indication of it physically but the individual feels anxious and tense. Needs are considered to be those that are essential for a person to survive and if the specific needs of the elderly are not satisfied, these can have negative effects on the life of the aging individual. Living with unmet activities of daily living needs lead to worsening health and increased use of medical resources (Kirk & Miller 1986). Unmet dependency needs leads to anxiety, depression or both, which in turn, can lead to complaints of physical illness.

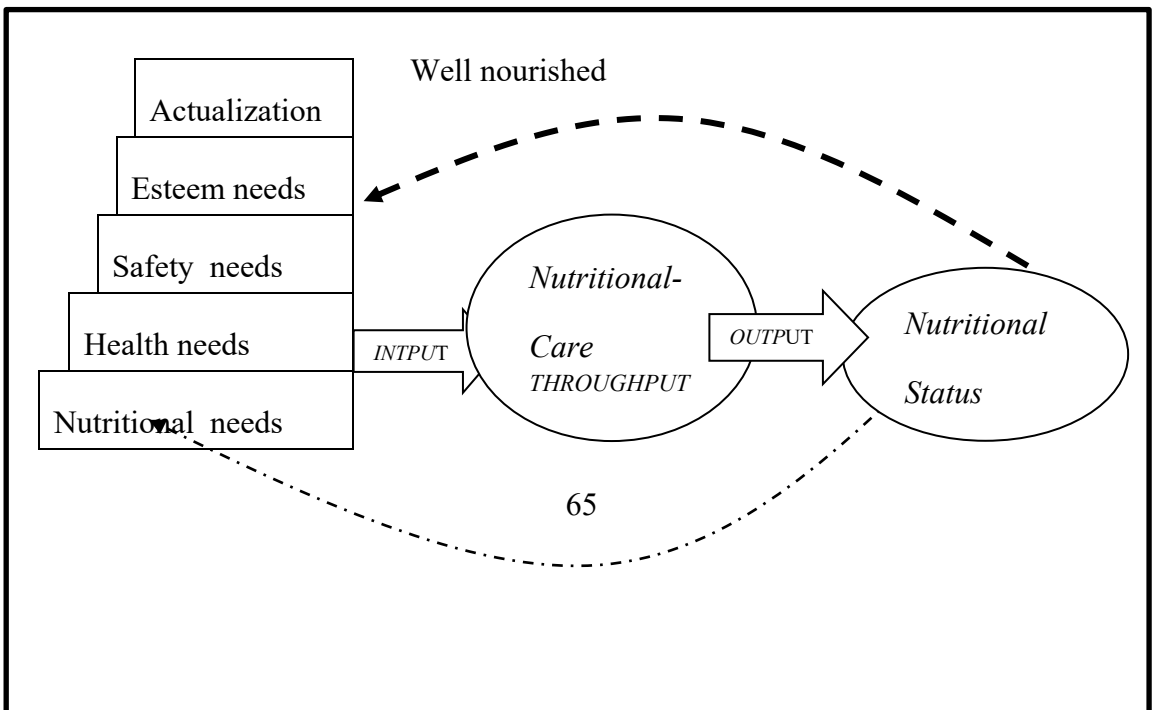
Safety Needs: Safety and security needs include personal security from crime, financial security, health and well-being, safety against accidents or illness and the adverse impacts of insecurity on the individual. After physiological and safety needs are fulfilled, the third layer of human needs is social. This psychological aspect of Maslow's hierarchy involves emotionally-based relationships in general, such as friendship, intimacy and having a supportive and communicative family. The elderly

need love, acceptance and belongings just as any other group (Nyamey, 2013). Humans need to feel a sense of belonging and acceptance, whether it comes from a large social group, such as clubs, office culture, religious groups, professional organizations, sports teams, gangs ('safety in numbers'), or small social connections (family members, intimate partners, mentors, close colleagues, confidants). They need to love and be loved (sexually and non-sexually) by others. In the absence of this, many people become susceptible to loneliness, social anxiety, and clinical depression. The elderly who are able to remain socially active will be more likely to achieve a positive self-image, social integration, and satisfaction of life. Social interaction is an important influence on the well-being of people of all ages (Burr, 1997).

Esteem Need: All humans have a need to be respected, to have self-esteem, self-respect and to respect others. Self-esteem is considered an important coping resource and a factor that influences wellbeing because people with high self-esteem are happier, healthier, less anxious, more self-independent and self-confident and more effective in meeting environmental demands than people with low self-esteem (Groh & Whall, 2001). Imbalances at this level can result in low self-esteem or an inferiority complex. People with low self-esteem need respect from others. They may seek fame or glory, which again depends on others. Many people with low self-esteem will not be able to improve their view of themselves simply by receiving fame, respect, and glory externally, but must first accept themselves internally. Psychological imbalances such as depression can also prevent one from obtaining self-esteem on both levels. The elderly who lacks self-esteem may feel isolated, depressed, neglected psychologically and this may lead to poor health (Singh & Misra 2009).

Self-Actualization: The motivation to realize one's own maximum potential and possibilities or capabilities is considered to be the master motive or the only real motive, all other motives being its various forms. In Maslow's hierarchy of needs, the need for self-actualization is the final need that manifests when lower level needs have been satisfied. Only a few people become self-actualized (Bratton & Gold, 2001).

This provision becomes the throughput, a subsystem of the general system. Both material and human resources must be managed to satisfy the food needs of the elderly. The nutritional status of the elderly is evidence of the output. A well-nourished elderly is a positive feedback. It is an indication that the elderly is ready to go for health needs. Negative feedback from the flow chart is malnourishment. The elderly has not met the food needs; therefore, he/she will not be motivated for the next level needs; thus educational needs. The family needs to adopt a better feeding pattern for the wellbeing of the elderly and all these occur in the environment.



HIERARCHY OF NEEDS Malnourished

MANAGERIAL SYSTEM

Figure 2.1: Flow chart of theoretical framework

Source: Adapted from Kwadzo-Fosu (2003).

Figure 2.1 explains the use of system approach in meeting the nutritional needs of the elderly within the family system. The hierarchy of needs provides the input for the family to manage. Food or nutritional needs serve as the most essential need before health needs. One cannot be motivated to seek for health needs when he/she has not met the nutritional needs. Subsequently, safety needs cannot be gratified when food and health needs are not satisfied.

2.12 Chapter Summary

Aging is a natural phenomenon which starts from conception and gradually manifests itself with the passage of time. It is not a disease in itself but many factors like the environment, poor nutrition, stress, poverty coupled with biological factors contribute to the breakdown of the body bringing with it disease conditions. As one age, the ability to perform many functions reduces gradually and the performance of functional duties slows down drastically and the individual tends to depend on others for assistance in performing daily activities.

Decrease in birth and death rates, as a result of improved health care delivery, decrease in mortality rate and increase life expectancy, the population of the elderly the world over is increasing with the developing countries grappling with the

situation. With changes in values, norms and expectations, women well educated and working outside the home, most elderly have become isolated from their family. The situation has brought about poor and unfavourable conditions for the elderly. They are living with poverty, isolation, poor health and destitution.

From the biological theories of aging, conclusions can be drawn that; the aging course varies between individuals, it is natural, inevitable, irreversible and progressive with the passage of time and it affects all living organisms. The theories explain the various mechanisms of aging, but no one specific theory is able to explain well the phenomenon of human beings and the aging process. Aging results not only from a biological perspective, but from other dimensions such as environmental, social, medical and nutritional. Biologic aging increases vulnerability to diseases, the processes differ from pathologic processes, the rate of aging differs for different organs and tissues within the same organism and it is also influenced by non-biological factors. The family is the basic social unit which binds its members through blood, marriage or adoption. The role of the family among other things is the provision of basic needs, security, and love for its members, procreation, nurturing, caring for the sick and the elderly and in addition, provision of identity to its members.

In sub-Saharan Africa, where old age security is low or non-existing, the family remains the source of the anchor for the support of its elderly. Although the strong family ties that bind families together and the once vibrant communal spirit of Africans in general and Ghanaians in particular is eroding rapidly exposing increasing numbers of the elderly population to poverty, loneliness, isolation, stigmatization and destitution, the family still remains the anchor of the elderly in Ghana. As people age,

changes occur in the requirement of the nutritional needs of the elderly as a result of medications, loneliness, depression, illness or loss of appetite.

Nutrition in old age is affected by many factors such as poverty, disease conditions, medication, physiological changes, and psychological factors. The socio-cultural environment of the individual, myths and misunderstandings, education and poverty also has a significant effect on the nutritional status of the elderly. The family caregiver is often an elderly female child of the family (normally with her own family) either nominated by the family or out of will who is responsible for the welfare of the elderly parents or an elder of the family. The caregiver can be a primary, secondary or tertiary caregiver depending on the level of frailty or disability of the elderly. The caregiver sandwiched between care roles and the urge to lift his or her own family onto a better pedestal in the ever changing world faces many challenges such as depression, health problems, conflict with spouse and children, financial, burnt-outs and time constraints. Though these conditions can negatively affect the caregiver, there are positive sides of caregiving like; satisfaction of fulfilling the love received during childhood, wisdom and knowledge acquisition, skills of family conflict resolution and at times material possessions. The family system theory seeks to explain the structure of the family and view the family as an integrated whole whose parts work together to achieve a common purpose of the family.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the systematic procedure for collecting data; it also deals with qualitative, quantitative and mixed paradigms, research design, the setting, study population, sample and sampling technique, the development and design of data collection instruments, validity and reliability of data collecting instruments, method used to analyze data collected for the study and ethical consideration.

3.1 Research Paradigms

Research is a systematic investigation to find answers to a problem. A research paradigm is a perspective about research held by a community of researchers that is based on a set of shared assumptions, concepts, values, and practices. The study used mixed research paradigm or approach (quantitative and qualitative).

3.1.1 Mixed Paradigm

The study used multiple data collecting instruments (questionnaire, interview guide, anthropometry). The qualitative approach was appropriate in the collection and analysis of non-numerical data for the study such as the use of i.e. interview guide and quantitative approach assisted in the collection of numeric data i.e. anthropometry. Both types of research are valid and useful as they are not mutually exclusive. It is possible for a single investigation to use both methods as noted by (Best & Khan, 1996). Qualitative research facilitates quantitative research as qualitative research may help to provide background information on context and subjects; act as a source of hypotheses; aid scale construction. Quantitative research facilitates qualitative research, this means quantitative research, helping with the choice of subjects for a

qualitative investigation. Quantitative and qualitative research are combined in order to provide a general picture; that is, quantitative research may be employed to plug the gaps in a qualitative study which arise because, for example, the researcher cannot be in more than one place at any one time (Bernard, 1994).

3.1.2 Justification of Quantitative Research Paradigm

Quantitative research is concerned with the collection and analysis of data in numeric form where the data concerned is analyzed in terms of numbers. It tends to emphasize relatively large-scale and representative sets of data and is often presented or perceived as being about the gathering of `facts. Charts and graphs were used to illustrate the results of the research and words such as variables, populations and results were employed as part of the vocabulary in this research.

Quantitative research also allows the researcher to familiarize him/herself with the problem or concept under study, and perhaps generate hypotheses to be tested. In this paradigm, the emphasis is on facts and causes of behaviour (Johnson, 1997). The problem of finding out the nutritional care and status of the elderly and making suggestions, require the researcher to come into close contact with the problem and also test hypothesis and so quantitative research is found to be suitable. Researchers who use logical, quantitative research employ experimental methods and quantitative measures to test hypothetical generalizations (Hoepfl, 1997), and it also emphasizes the measurement and analysis of causal relationships between variables (Denzin & Lincoln, 1994).

A quantitative researcher attempts to fragment and delimit phenomena into measurable or common categories that can be applied to all of the subjects or wider

and similar situations (Winter, 2000). In his/her attempts, the researcher's methods involve the use of standardised measures so that the varying perspectives and experiences of people can be fit into a limited number of predetermined response categories to which numbers are assigned (Cateora & Graham, 2005).

3.1.3 Qualitative Paradigm

Qualitative research is a research that uses methods such as participant observation or case studies which result in a narrative, descriptive account of a setting or practice. A qualitative case study examines a phenomenon within its real-life context. Data are collected on or about a single individual, group, or event. In some cases, several cases or events may be studied (Creswell, 1994). The qualitative research methods are often employed to answer the whys and hows of human behaviour, opinion, and experience information that is difficult to obtain through more quantitatively-oriented methods of data collection. Qualitative case study methods often involve several in-depth interviews over a period of time with each case. The interviews explore the unique aspects of the case in great detail, more so than would be typical for a phenomenological interview. Because it is the case's special attributes that are of interest, sample sizes are generally small, usually one of several cases (Best & Khan, 1989).

Qualitative research paradigm is appropriate for this study since in-depth information from the elders and their care-givers is required to analyze their condition while they perform their care-giving roles to their elders. The overall idea is to tease out what makes them so different and apply knowledge gained from the study to a larger population.

3.2 Research Design

Descriptive survey was used in this study as it attempts to describe systematically a situation, problem, phenomenon, service or programme. The design also combines favourably with a lot of instruments for data collection and permits asking of a wide range of questions in a particular study. The researcher combined questionnaire, interview guide and anthropometry as instruments for data collection and therefore considers a survey as the most appropriate.

It provides information or describes the attitude towards an issue (Kumar, 1996). The primary purpose of a case study is to understand something that is unique to the case(s). Knowledge from the study is then used to apply to other cases and contexts. The descriptive survey was used to elicit information on the care of the elderly in relation to their nutritional status. To Patton, (2002), descriptive surveys are appropriate and effective for collecting relatively large data in a relatively short time.

Also, the survey was considered appropriate because it permits a researcher to report people's opinion, perceptions and ideas as they are presented. It also allows the use of frequencies in describing responses from a population (Fank, & Kosecoff, 1998). The study sought to examine the nutritional care of the elderly, the role of the family in meeting their nutritional needs, their nutritional status, the nutritional challenges they faced and also report the situation as it is. The researcher also preferred the survey for this study because it allows the use of the sample instead of the entire population for the study.

3.3 Study Location

The study was conducted in Dambai the capital of the Krachi – East district of the Volta Region of Ghana. The area is made up of people of different ethnic groups like Ewes, Nchumuru, Krachi, Basari, Kokomba, and Kotokoli among others. The inhabitants of this area are predominantly farmers with some venturing into fishing and trading activities and a few others working in the formal sector. The researcher, a resident of the community and well informed about the lifestyle of the people and this made it easier for her to establish the needed rapport with the respondents without much difficulty. The data collection instruments used demand that the researcher be conversant with the lifestyle of the people and be regular with them, for easy administration of instruments to ensure a high level of reliability.

3.4 Limitation to the Study

The study population was to cover all the elderly men and women aged sixty years and above (60+) who may be functionally limited in one way or the other and who need assistance for daily living and their caregivers in the Krachi-East district but due to the large number of people in this age group, the work was conducted only in Dambai within the Krachi-East district of the Volta Region. The readiness of the respondents to give accurate information on issues affected the result of the study. The ease of having access to the very old people also was not easy and so delayed the data collection for the study.

3.5 Population

For the population of the study, all the elderly men and women aged sixty years and above (60+) who are functionally limited in a way in the performance of activities of daily living and therefore need assistance in a way at Dambai in the Krachi-East Municipality of the Oti Region of Ghana.

3.6 Sample and Sampling Procedure

Purposive sampling with the snowball approach was adopted during the study. The researcher chose this technique because only people aged above sixty years who needed assistance for daily living and their caregivers were qualified to provide the needed response or information in the study Purposive sampling technique enables the selection of eligible respondents to the study thereby eliminating the collection of irrelevant data. In all two hundred respondents (200) made up of one hundred (28 men and 72 women) sixty years and above with a functional limitation of a sort and their one hundred caregivers (12males and 88 females) participated in the study.

3.7 Development of Instruments

The instrument is a generic term used to measure devices such as surveys, tests, questionnaires, etc. Questionnaire, interview guide, observation guide and anthropometry were used to collect data for the study. A questionnaire was used to generate data for quick and easy analysis by the use of frequency tables, graphs and cross tabulations through the use of software packages. Data was also analyzed more scientifically and objectively to compare and contrast other research results and also used to measure change. Observation guide was used to make inference on how well personal attributes of the elderly, such as neatness, teeth, clothes, nails were kept or observed.

3.7.1 Interview

The purpose of the research interview was to explore the views, experiences, beliefs and/or motivations of individuals on specific matters (e.g. feeding patterns of the elderly). Face-to-face interviews helped with more accurate screening. The individual

being interviewed was unable to provide false information when answering screening questions such as gender, age, or race. Face-to-face interviews captured verbal and non-verbal clues, including body language, which could indicate a level of discomfort with the questions.

In this case, the interviewer was the one that had control over the interviewee and could keep the interviewee focused and on track to completion. However a problem with semi structured interviews is that it gives the respondent the ability to talk openly which gives wide ranging answers which may not be relevant for the purpose. The researcher has to sort out what is useful and what is not. The interview was necessary because it helped to establish a good personal relationship between the researcher and the interviewee which allayed their fears of exposing their family values to an outsider

The qualitative research interview seeks to describe and give meanings of the central themes to the subjects. The main task in interviewing is for the interviewee to understand the meaning of what the interviewer say (Kvale, 1996). A qualitative research interview seeks to cover both a factual and a meaning level, though it is usually more difficult to interview on a meaning level (Kvale, 1996). Interviews are particularly useful for getting the story behind a participant's experience. The interviewer can pursue in-depth information around the topic. Interviews may be useful as follow-up to certain responses to questionnaires, e.g., to further investigate their responses (McNamara, 1999).

3.7.2 Questionnaire

A thirty-two item questionnaire was constructed to help gather information on the elderly especially on their demographic credentials, their income, and the nutritional care they received, their choice of food among others. The questionnaire consisted of both open-ended and close-ended (which allowed room for the respondent to give accurate responses to situation, feelings and also make meaningful contribution on issues pertaining to the information needed from him/her). Closed-ended questions were also used to save time, make analysis simple and restricted respondents to the point. The questionnaire was divided into two major parts. The first part looked at the demographic information of the respondents such as sex, age, marital status, reproductive information, occupation and economic status. The second part looked at foods of their choice, reasons for choice, who bought food, who prepared food, selection of food from the various food groups, health problems, health status, and their feelings about care they received. Likert scale was developed and used to answer questions such as the selection of food from the six food groups. . Questionnaires distributed to literate respondents were collected in a week while interviews were conducted with those who could not read. Observation guide was constructed on the basis of the questionnaire to observe variables that were beneficial to the study.

3.7.3 Anthropometry

Anthropometric measurements are important nutritional status indicators, as they provide information on body size, proportion and distribution of body fat, and lean body mass. They are valuable in determining changes in nutritional status over time, and in monitoring the effectiveness of nutritional intervention. Malnutrition (either as under- or over-nutrition), alters body composition, and increases susceptibility to

illnesses that may be prevented or delayed through the provision of nutrition interventions. Both low and high body measurements have negative implications for health. Thus, appropriate nutrition interventions are dependent on comprehensive assessment of nutritional status.

In considering anthropometric measurement, age, sex, height and weight were taken and used to calculate the body mass index (BMI=weight in kg/ height in m^2) of the elderly to determine whether the individual is underweight, overweight or normal in weight. The procedure was adopted because it was considered to be an inexpensive process for measuring the nutritional status of the elderly. It is more reliable and faster compared to other methods. The international standard for assessing body size in adults is the body mass index (BMI) which is also termed Quetlet's Index. The method also has the merit of predicting who could benefit from nutrition intervention (Cogill, 2001).

Anthropometric measurements were taken by the researcher and two assistants who were earlier given adequate training. Heights and weights were measured with the subject barefooted and lightly dressed. The team ensured the floor surface was even and firm and subjects had their foot wears removed. Body weight measurements were taken on a common bathroom scale near a support to assist the elderly mount the platform of the weighing scale. Body weight was measured with the subject standing unsupported on the scale feet together, motionless, wearing ordinary light clothes and looking straight and the weight was recorded to the nearest 0.1kg.

The standing heights of the elderly persons were done using a stadiometer (Leicester Height Measure) calibrated in millimetres (minimum scale: 0.1cm) in accordance with a standard procedure documented for the elderly. The subject stood upright on a

level platform of the stadiometer and without raising heels, a sliding headpiece of the stadiometer was moved to touch the crown of the head gently but firmly and readings were recorded. Readings were taken from the highest point of the head with subject looking straight ahead along the Frankfort line.

3.8 Validity and Reliability of Instruments

To test and ensure validity and reliability of the instruments to be used in the study, the questionnaire, interview guide were, first given to the supervisor and colleagues for their assessment; this process is described as a content validity. The instruments were piloted at Wusuta in the Volta. When the reliability coefficient was calculated using Spear Man correlation coefficient as ***R= 0.82*** which describe the instrument as highly reliable. Key indicators of the quality of a measuring instrument are the reliability and validity of the measures. Validity is the extent to which an instrument measures what it is supposed to measure and perform. As a process, validation involves collecting and analyzing data to assess the accuracy of an instrument (Creswell, 2005).

To attain high validity it is important that the method involves structured questionnaires, interviews and anthropometric measurements to answer the research questions and the purpose of the study (Bryman, 1988). External validity is the extent to which the results of a study can be generalized from a sample to a population. Reliability estimates and evaluates the stability of measures, internal consistency of measurement instruments, and inter- reliability of instrument scores (Gibson, 1989).

3.9 Piloting Instrument

The adopted questionnaire and the interview guide used for this study were piloted at Wusuta in the Volta Region on some elderly and their family care-givers with the similar characteristics like those used in the main study in Dambai. The instruments were cultured after the pilot test. Technical hitches identified during the pilot test were corrected and the instruments tailored in consonance with the objectives of the study, for effective data collection in the main study. The piloting was very useful as it helped fine-tune the tools, and improved the data collection technique.

3.10 Data Collection Procedure

The researcher identified prospective respondents earlier and established a good working relationship with them and with the use of snowballing technique where a respondent directs the researcher to the compound of another prospective respondent who is person sixty years and above with challenges. An introduction letter from the "Head of Home Economics Department of the University of Education, Winneba; was shown or read to respondents who could read to allay their fears and suspicions. For those who could not read, a vivid explanation of the research was given to them, and this offered the researcher the opportunity to book an appointment with the respondents.

Instruments for collecting data for the study were questionnaires, interviews guide, observations guide and anthropometry. A tape recorder was used to record proceedings of the interview. Both the questionnaire and the interview guide were structured to give uniformity in data collection, interpretation and analysis. As dietary needs differ from one person to the other, respondents were free to give actual information on their dietary habits, preferences and health status.

3.11 Data Analysis

Data collected was edited for consistency of responses. It was categorized, coded and assigned identity numbers in consistency with objectives and research questions of the study. The researcher tabulated data using charts, graphs, percentages and frequency tables obtained by using the Statistical Package for Social Sciences (SPSS) version 20

3.12 Ethical Consideration

The four main requirements of ethical consideration composed by the Swedish Research Council (Vetenskapsrådet, 2002) when collecting data were used. These requirements are: the information requirement, the consent requirement, the confidentiality requirement and the utilization requirement. The ethical consideration prepared was to obtain informed consent in a language that will be understood correctly by the respondents. All information, questions and answers were given in the preferred language by respondents to avoid misunderstandings; respondents were therefore interviewed using English, Twi and Ewe. They (the respondents) were also informed that participating in the study is voluntary and that they can choose not to take part in it.

Respondents were made aware that they will be anonymous; therefore, fictional names were used during the compilation of the results. The fourth and final demand, the utilization requirement were implemented when respondents were assured that the results from the study will only be used for its intended purpose and not for any other; like commercial and non-scientific matters. Permission was then sought from participants to record the interviews.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.0 Introduction

This chapter deals with analysis of data collected from respondents and observations made by the researcher. The first part looks at the demographic information on both the elderly while the second part deals with the research questions.

4.1 Demographic Characteristics of Respondents

The background focuses on demographic features of the elderly. It looks at age distributions, sex, marital status, educational status, fertility issues. In all, there were twenty-eight (28) male and seventy-two (72) female elderly respondents.

Table 4.1: Age of the Elderly

Age	Frequency	Percentage (%)
60-70	26	26
71-80	38	38
81-90	24	24
>90	12	12
Total	**100**	**100**

Source: Fieldwork Data, (2018).

Twenty-six percent (26%) of the respondents were between the ages of sixty and seventy (60-70), thirty-eight percent (38%) were between seventy-one and eighty (71-80) years, twenty-four percent (24%) were between eighty-one to ninety (81-90) years and twelve (12%) were above ninety years as shown by Table 4.1.

From Table 4.2, the marital status of the elderly is as follows, fifty percent (50%) were married and fifty (50%) were not married. Out of the fifty unmarried respondents, ten percent (10%) were divorced while twenty percent (20%) were widowed and another twenty percent (20%) were single.

Table 4.2 Marital Status of the Elderly

Marital Status	**Frequency**	**Percentage (%)**
Married	50	50
Divorced	10	10
Widowed	20	20
Single	20	20
Total	**100**	**100**

Source: Fieldwork Data, (2018).

Regarding respondents` education, ninety percent (90%) had no formal education while ten percent (10%) had education but none went above primary six. Table 4.3 shows the number of children respondents had; twelve percent (12%) had no children of their own, forty-eight percent (48%) had children between one and five and thirty-two percent (32%) had between six and ten while eight percent (8%) had over ten children.

Table 4.3: Number of Children of the Elderly

No. of Children	**Frequency**	**Percentage**
1-5	48	48
6-10	32	32
>10	08	08
None	12	12
Total	100	100

Source: Fieldwork Data, (2018).

Table 4.4: Age Distribution of Caregivers

Age	Frequency	Percentage (%)
1-25	56	56
26-50	32	32
Above 50	12	12
Total	**100**	**100**

Source: Fieldwork Data, (2018).

Twelve percent of the caregivers were males and eighty-eight percent were females. Caregiver respondents fell into different age groups as follows; twelve percent were below the age of twenty-six years, fifty six percent were within twenty six and fifty year group and thirty two percent were above fifty (50) years. The marital statuses of caregivers were as follows; sixty percent (60%) were married, eighteen percent were single, twelve percent were divorced and ten percent were widowed as shown in (Table 4.5). Out of the sixty married respondents, forty-four percent lived with their spouses while sixteen percent did not live with their spouses

Table 4.5 Marital Status of Caregivers

Marital Status	Frequency	Percentage (%)
Single	18	18
Married	60	60
Divorced	12	12
Widowed	10	10
Total	**100**	**100**

Source: Fieldwork Data, (2018).

Eighty-eight per cent (88%) of caregivers had children while twelve percent did not have children. Fifty six percent of caregivers had between one and five (1-5) children, thirty two percent (32%) had between six and ten (6-10) children. Forty percent of caregivers had grand children while sixty percent (60%) did not have grandchildren. Regarding the number of children staying with 12% had no children staying with them, fifty six percent (56%) were having children between one and five staying with them and thirty two percent had children between six and ten living with them.

Table 4.6 Educational Level of the Caregivers

Educational Level	**Frequency**	**Percentage (%)**
No formal education	66	66
Primary	04	04
Middle	06	06
Junior High	12	12
Senior High	12	12
Total	**100**	**100**

Source: Fieldwork Data, (2018).

Sixty six percent (66%) of the caregivers had no formal education but thirty four percent (34%) had different levels of education. Out of the thirty four educated caregivers, four representing (12%) had primary school education, six caregivers representing percent (18%) had up to middle school level, twelve respondents representing thirty five percent (35%) were Junior High School graduates while another twelve respondents representing (35%) completed Senior Secondary School. None of the caregivers had any formal knowledge about Food and Nutrition.

Table 4.7 Occupation of Caregivers

Occupation	Frequency	Percentage (%)
Farming	56	56
Trading	22	22
Civil Servant	18	18
Unemployed	04	04
Total	**100**	**100**

Source: Fieldwork Data, (2018).

Fifty-six percent (56%) were farmers, eighteen percent (22%) were traders while eighteen percent (18%) were civil servants and four percent were unemployed.

4.2 Research Question One:

What is the care given by families concerning the nutritional needs of the elderly in Dambai?

To answer this question, respondents were asked whether or not they received remittance from any source, the number of times they ate in a day; whether they purchased or prepared their own food and if they ate alone. The choice of food they made towards the preparation of meals, reasons for the choice they made and their health problems which included hygiene status were also taken into consideration including the ability to perform some daily living activities.

To these questions, sixty percent (60%) respondents said they had no source of income while forty percent (40%) had a source/s of income. Seventy elderly (70%) respondents received remittance from family members but thirty percent (30%) received no remittance.

Table 4.8 Food Purchase by the Elderly

Food Purchase	Frequency	Percentage (%)
Self	32	32
Spouses	24	24
Children	36	36
Others	08	08
Total	**100**	**100**

Source: Fieldwork Data, (2018).

Table 4.8 shows how food is purchased for elderly respondents. Thirty-two percent (32%) of the elderly respondents bought their own food, twenty four percent (24%) had their food bought by their spouses, thirty-six percent (36%) of the elderly had their food bought for them by their children and eight percent (8%) had their food purchased by other family members.

Table 4.9 Meal Preparation

Meal Preparation	Frequency	Percentage (%)
Self	44	44
Spouse	20	20
Children	30	30
Others	06	06
Total	**100**	**100**

Source: Fieldwork Data, (2018).

On who prepared food for the elderly, forty-four percent (44%) said they prepared their own food, twenty percent (20%) said` their meals were prepared by spouses, thirty percent (30%) said their children prepared food for them and only six percent (6%) said other family members prepared food for them as can be seen from Table 4.9.

Table 4.10: Number of Meal Times per Day

Mealtimes per day	Frequency	Percentage
Once	-	-
Twice	36	36
Thrice	52	52
Four times	12	12
Total	**100**	**100**

Source: Fieldwork Data, (2018).

Table 4.10 indicates the number of times respondents ate in a day. None of the elderly respondents ate only once a day, thirty-six percent (36%) ate twice a day while fifty-two percent (52%) ate thrice daily and twelve percent (12%) ate four times a day. The elderly were asked to tell who cares for their needs and below are what some has to way:

> Eno*: My children care for my needs and their own needs.*
>
> Ama Mame*: All my children died before I could grow to this stage so I have some of the children I took care of who are now assisting me in feeding, washing and what they can do for me.*
>
> Maame*: My needs are catered for by those in whom l invested my resources during my hay days, they are also giving it back to me at this time, they provide for my nutritional and other needs.*
>
> Uncle Ben: *Our children are not with us so they have asked that other members of the family take care of us but they provide for us and them. These people buy and prepare meals for us.*

Table 4.11: Selection of Food from the Six Ghanaian Food Groups for the Elderly

Food Groups	Not at all	Little	Moderately	Abundantly	Total (%)
Starchy roots & plantain	18	19.5	23.5	39	100
Cereals & grains	17.5	20	25	37.5	100
Meat & products	45	29	21	5	100
Legumes & oily seeds	14	43	30	13	100
Fruits & vegetables	32	43	17	8	100
Fats & oils	42	21	31	6	100

Source: Fieldwork Data, (2018).

From Table 4.11, thirty-nine percent (39%) of elderly respondents selected starchy roots and plantain most while twenty-three point five percent (23.5%) elderly chose it moderately, nineteen and a half percent (19.5%)of the elderly chose them occasionally while eighteen percent (18%) elderly did not choose them at all. Cereals are the next commonly cultivated crops of farmers in the district GPHS (2010) and thirty-seven and a half percent (37.5%) of the elderly chose them most, twenty-five percent (25%) elderly chose it moderately, twenty percent (20%) elderly choose them occasionally while seventeen and a half percent (17.5%) of the elderly did not at choose all.

On the choice of meat and meat products, five percent (5%) of the elderly respondents selected them most, twenty one percent (21%) elderly selected them moderately, and twenty-nine percent (29 %) elderly selected them little while forty five percent (45%) elderly did not choose them at all. With the choice of legumes and oily seeds, thirteen percent (13 %) of the elderly respondents chose them mostly, (30%) elderly chose it occasionally, forty-three percent (43%) elderly respondents chose them little and

twenty five respondents representing fourteen percent (14 %) elderly do not choose it at all.

On how respondents selected fruits and vegetables 8% elderly selected them most, 17% elderly selected them moderately, 43% elderly selected them occasionally while 32% of the elderly did not select them at all. On the choice of fat and oils for food, six percent (6%) elderly selected them most, 31% elderly selected them moderately, and 21% selected them occasionally while 42% elderly did not select them at all.

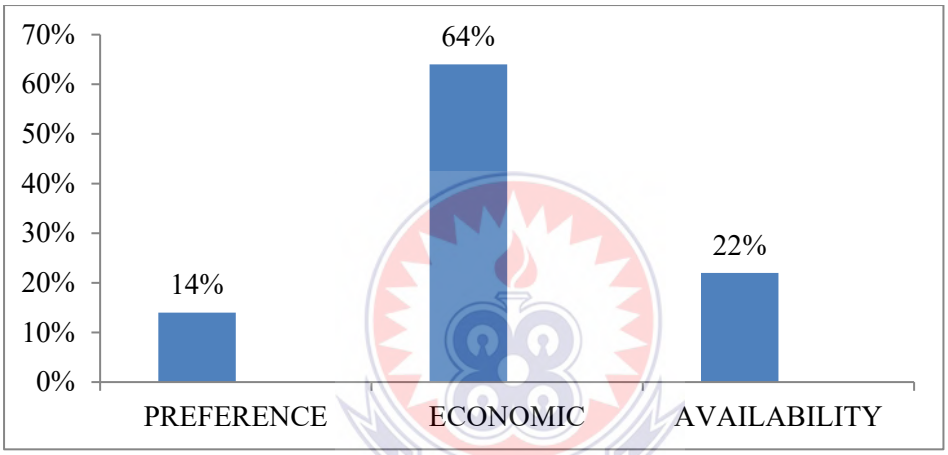


Figure 4.1: Reasons for choice of food

The elderly selected their food based on food preference (14%), availability (22%) and economic situations (64%) as shown in figure 4.1 above.

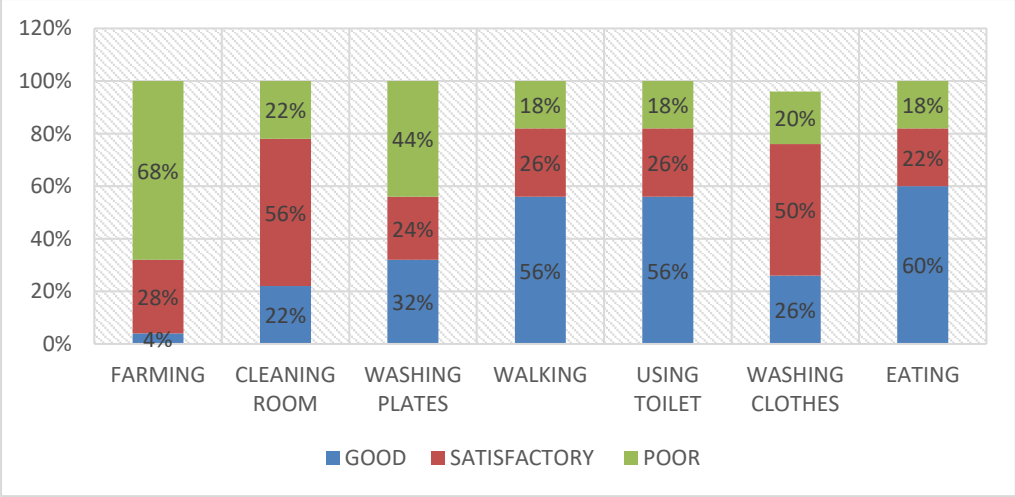


Figure 4.2: Daily Activities of the Elderly

The elderly still engaged in activities of daily living to different degrees. On farming, 68% said they performed poorly in farming, 28% performed satisfactorily and 4% could farm well. On cleaning of room, 22% elderly were unable to clean their rooms well, 56% were able to do it satisfactorily, while 22% could clean well. Forty four percent (44%) of them were unable to wash their plates, while 24% elderly washed them satisfactorily and 32% could wash their plates as well. On walking, 56% elderly said they could walk well, 26 % walked satisfactorily and 18% walked well. Fifty six percent (56%) used the toilet well, 26% used it satisfactorily while 18% performed poorly when it comes to the use of the toilet. Twenty six percent (26%) could wash their clothes well, 50% satisfaction and 20% washed poorly. On how well the elderly were able to eat, 60% said they were able to eat well, 22% ate satisfactorily and 18% indicated they were unable to eat well. Most of the Activities of Daily Living (ADL) were either done satisfactorily or poorly indicating that the elderly need some support from other people in performing such activities.

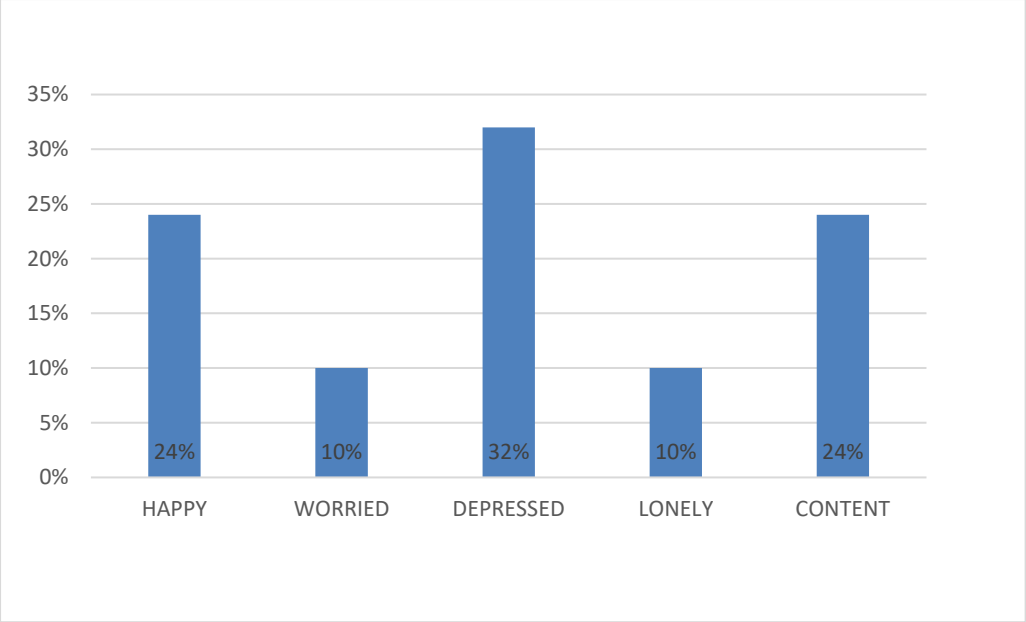


Figure 4.3: The Elderly Rating of Their Care

The elderly were asked to express their feelings about the care they received from their care givers. Twenty four percent (24%) said they were happy, 10% said they felt worried, 32% felt depressed, and 10% said they felt lonely while 24% said they were content as shown in Fig 4.3

Excerpts from interview: the elderly were asked how they feel about the care they receive from their caregivers /families.

> Rukiya*: I no longer have the strength I used to have so anything that is done for me, I accept it whether I like it or not but I am grateful.*
>
> Ceci: *When you are old, it just means that your freedom has been taken from you. You no longer decide what to eat or how you will like it cook for you because you do not have money.*
>
> Uncle David*: They give you what they like and they can shout at you. You are without respect and because of your failing health, you have no choice than to accept things the way they want it.*
>
> Papa Moses*: I am grateful to my daughter and her husband and I pray for their children to do much for them too. I feel happy and blessed.*

4.3 Research Question Two: What is the nutritional status of the elderly in Dambai?

To answer this question, the researcher considered analyzing the results of the measurements.

Table 4.12: Nutritional Status or BMI of the Elderly

BMI (Kg/m2)	Frequency	Percentage (%)
≤18.5	32	32
18.5 -24.9 (normal)	66	66
≥ 25	02	02
Total	**100**	**100**

Source: Fieldwork Data, (2018).

From Table 4.12, 32% of the elderly respondents had BMI [weight (kg)/height^2 (m^2)] below 18.5 which indicate that they were undernourished or malnourished. Sixty six percent (66%) elderly had a BMI between 18.5-24.9 which indicates that they were within the normal BMI range and only 2% were overweight. Further tests were run to investigate the age group most affected by the problem of low nutritional status. With regards to the nutritional status of the elderly who were in the 60-70 year bracket, 12.4% fell below 18.5, 64.6% had normal weight and no one was above 25. In the 71-80 year group, 12.4% fell below 18.5, 76.5% had normal BMI and 11.8% were above 25. Sixty six point six percent (66.6%) respondents between 81-90 years were below 18.5 with 33% having normal BMI. All elderly aged above 90 years were below 18.5. It is clear from the above that the prevalence of under-nutrition, increased with age in the study area

Forty two point nine percent (42.9%) elderly males had BMI below 18.5, 57.1% were within the normal range and no male was above 25. Twenty seven point eight percent (27.8%) elderly females were below 18.5, 69.4% were within the normal range and 2.8% were above 25.

4.4 Research Question Three: What Nutritional Challenges Do the Elderly Face in Dambai?

Finding answers to this question, income, health (chewing, diseases etc.) were considered. Analyses of the income levels of the elderly revealed that, fifty four percent (54%) had their own income; 46% who were within the 60-70 year group had no income. Forty two percent (42%) had an income, but 48% had no income within the 71-80 groups. Of the 81-90 year group, 42% had income while 48% had no income. All the elderly above 90 years had no source of income.

As to whether the elderly had eating difficulties, Figure 4.4 shows that 28% cited chewing problems, 4% had swallowing difficulties, 52% cited loss of appetite while 8% indicated indigestion problems and 8% reported of no eating.

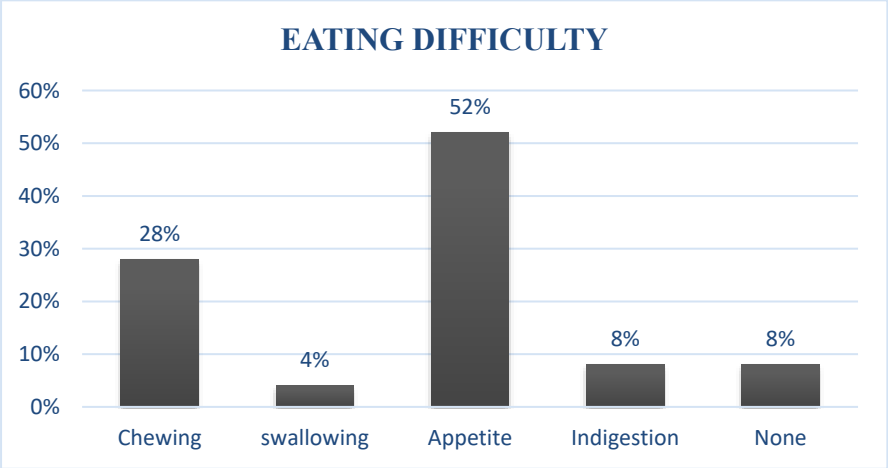
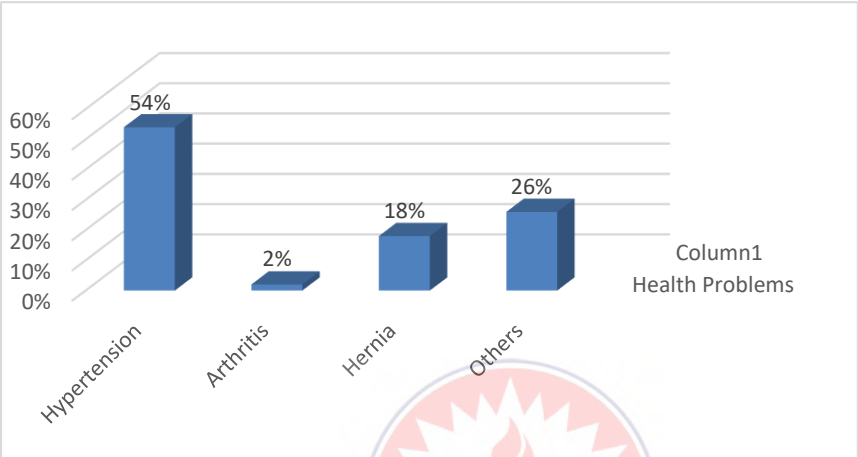


Figure 4.4: Eating Difficulties among the Elderly

When asked if the elderly ate alone, 44% said they ate alone and 56% said they did not eat alone. The forty-four elderly who said they ate alone gave varied reasons for eating alone. Thirteen percent (13%) cited isolation, 69.7% elderly said that the situation stemmed from their personal reasons, 13% gave cultural reasons while 4.3% said it was due to health reasons.



4.5: Health Problems of the Elderly

On the health problems of elderly respondents, 18% cited hernia, 2% indicated arthritis, and 54% cited hypertension while 26% indicated other health problems as shown by figure 4.5.

When asked if the elderly were on medication, 38% said they were on medication while 62% said they were not on any form of medication. As to whether respondents slept well, 36% said they slept well while 64% said they did not sleep well. When respondents were asked to rate their health status, 16% of the elderly said they had normal or good health, 52% rated their health status as not good (bad) while 32% said their health was quite good (fair).

4.5 Research Question Four: What Challenges Do Care-givers of the Elderly Face in Dambai?

In answering research question four, respondents' answers on food they prepared most, the challenges they faced in caring for their elderly and their own feelings about the care they give were examined Sixty two percent (62%) of care-givers said they were caring for their own parents, 14% were caring for their husbands while 8% were caring for their step parents, 4% care for siblings and 12% cared for other family members.

As to who assisted caregivers in the up keep of the elderly they cared for, 34% cited their children and siblings, 8% indicated their spouses, 2% had other members of the family giving assistance and 56% of the caregivers cared by themselves Fig. 4.6.

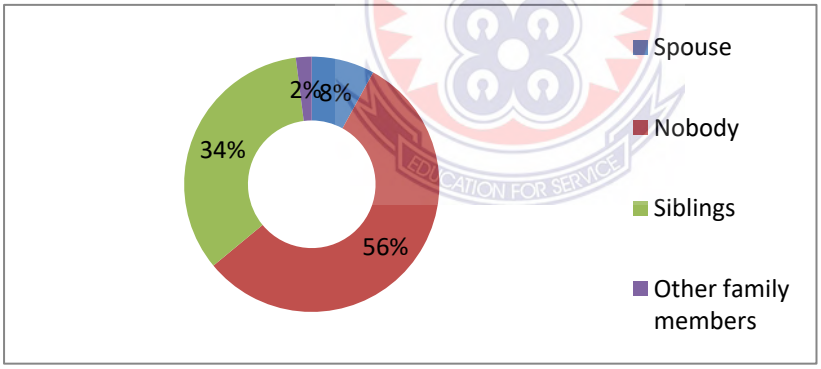


Figure 4.6: Assistance Received by Caregivers for their Elderly

Answering the question on which meals caregivers prepared most, 70% caregivers prepared fufu most, 24% caregivers prepared banku the most, 6% caregivers prepared kokonte the most as can be seen from figure 4.7.

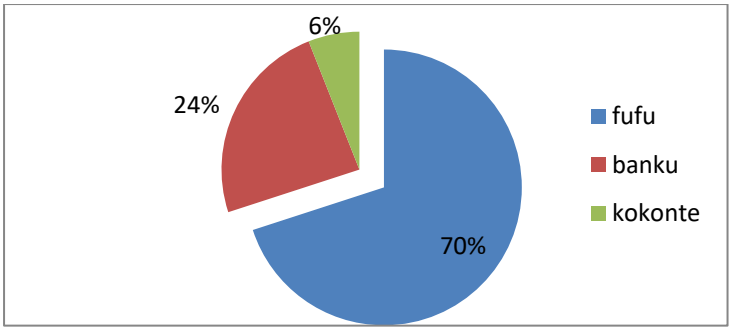


Figure 4.7: Food Prepared Most

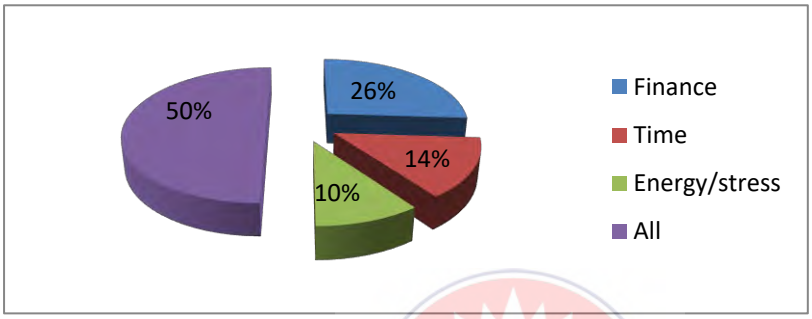


Fig 4.8: Challenges of Caregivers

Respondents were asked the challenges they faced in caring for their elderly. From Figure 4.9, 26% said they faced financial challenges, 10% complained of stress or energy exhaustion while 14% cited time was a big challenge to them and 50% indicated they were faced with finance, energy and time challenges in the performance of their duties.

> Flora: *My problem is that, I do not have money to buy food and other necessities, and I at times become sick due to stress.*
>
> Gloria*: Money, time, someone to help me and my health are the major things militating against my work*
>
> Patience: *I am aging myself and so it is difficult for me to be lifting and feeding my father who is completely bedridden but I have to do it. I am stressed up coupled with financial and inadequate time for myself*
>
> Donkor*: My siblings do remit me, but it is not enough to cater for all that is needed for his upkeep. The most challenges I face are the*

lack of money and time to undertake my own economic activities and my own health problems (stress).

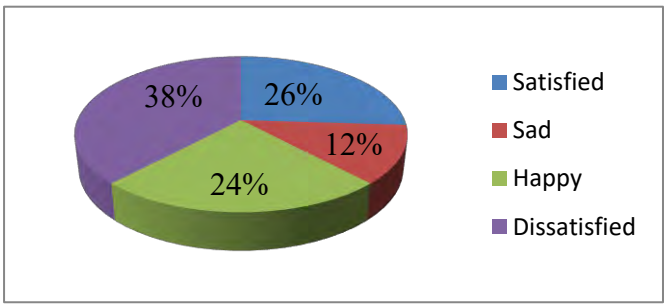


Figure 4.9: Feeling about Care

Caregivers were asked to assess themselves on the care they gave to their elders. From Figure 4.9, 26% caregivers indicated they were satisfied, 12% caregivers were sad and 24% caregivers expressed happiness while 38% caregivers said they were dissatisfied.

Kwabena: *It is rewarding and fulfilling to take care of your aging parents, though I admit it is very demanding because you will hear a lot of things that no other person will be ready to tell you.*

Selina: *It is really tedious to take care of the elderly in addition to your own family. I am uneducated and so I depend solely on farming for survival, but I have to leave the house very late for the farm and come very early because there is no other person who is helping me. However, I am doing my best for my beloved mother and wish to do more.*

Martha: *I no longer join my colleagues to social gatherings like funerals and even a church service because I do not know what will happen to him in my absence for people to blame me.*

Afua*: I feel ashamed of myself that I am unable to care of dad the way he did for us. Due to lack of money, I cannot give my dad the type of care I wish to give him to just show my appreciation for how he suffered from the hands of his relatives for us.*

Hypothesis Testing

In order to find the outcome of the hypothesis, an independent chi-square test was conducted to find the relationship that exists between challenges of caregivers and nutritional status of the elderly indicated in Table 4.13**.**

Table 4.13: Caregivers` Challenges and Nutritional Status of Elderly

	Value	Df	Asymp.Sig. (2sided)
Pearson Chi-Square	19.782[a]	8	.011
Likelihood Ratio	11.176	8	.192
Linear-by-Linear Association	.015	1	.905
NO. of Valid Cases	100		

Source: Fieldwork Data, (2018).

N=100, χ2 cal. =19.782, df = 8, α = 0.05, P = 0.011,

An independent chi-square test was conducted to test for the relationship that existed between the challenges of care-givers and the nutritional status of the elderly. From Table 4.9, the calculated value of χ^2cal=19.782 at a degree of freedom (df) of 8 and alpha value α = 0.05. The P-value which is the probability value that a chi-square statistic with 2 degree of freedom is more than 19.58 using the chi-square distribution is found to be P (χ^2 >19.58) = 0.011.

CHAPTER FIVE

DISCUSSIONS OF FINDINGS

5.0 Introduction

This chapter discusses the major findings observed from analyzing data collected for the study. It also tried to give interpretations to these data and established relationship between the major variables for making a meaningful justification of the topic under study.

5.1 Family Care for the Elderly

The study sought to investigate how families care for the nutritional needs of their elderly in Dambai. Though 60% of the elderly had no source of income of their own, thirty percent of them (those who had no income source) had remittance from family members who also provided for their meals. Thirty-six percent of the elderly ate twice a day, fifty-two percent (52%) of the elderly ate thrice a day, 12% ate four times a day and none of them ate once a day. For those who had income, it diminished with advancing age due to functional and other health problems associated with the aging process.

Family members were instrumental in the upkeep of the elderly as 70% of them received remittances from family members, 68% had their foods bought for them by members of the family, 56% of the elderly had their meals prepared by family members such as spouses, children and other members of the family. Thus, the purchase or provision, preparation and service of food for the elderly were done mostly by family members for elders who were unable to do this by themselves. Assistance was also given in such services as bathing, washing, feeding those who

were unable to eat by themselves and other household chores in some instance walking. The findings of the study suggest that the family is the main caregiver to the elderly as they render such services as shopping, preparing and service of meals in addition to rendering of such services as assisting the elderly to walk and other household chores as may be required. They are also responsible for the health needs and other activities that demand the use of resources of both human (energy, skills, time, etc.) and non-human (money, goods etc.) resource.

5.3 What is the Nutritional Status of the Elderly in Dambai?

In the study area, the common or stable foods are yam, cassava and maize, which are good sources of energy. They are therefore chosen mostly on availability, but other food items that are not readily found in the catchment area are brought to the market from other districts and regions, but are mostly quite expensive for some of the elderly to purchase to meet their nutritional requirements. This confirms Brown`s (2002), assertion that although the primary factor for eating is to satisfy hunger, the major factors influencing what is eaten in different cultures are the foods available in that geographical location, traditional practices and beliefs and any religious prescriptions.

Carbohydrates are the preferred energy source for the body and the excess of its end product digestion is stored by the body as glycogen which the body uses in absence of new ones from food or during hunger to sustain the body. It combines well with other nutrients like protein and fat for the body`s utilization and so it is very important in the diet Modgil (2011). Evidence indicates that protein intake greater than the RDA can improve muscle mass, strength and function in elderly. In addition, other factors, including immune status, wound healing, blood pressure and bone health may be

improved by protein intake Lange-Collette, (2002). Fat and oil which carry fat soluble vitamins to where they are needed in the body, insulates the body and protect vital organs in the body. A low-fat diet is one way to help lower blood lipid levels, such as total cholesterol and low-density lipoprotein (LDL) cholesterol (the "bad cholesterol"). If these blood lipids are too high, it can increase the risk for a heart attack or stroke, especially in the elderly Rana (2014). Proper nutrition with emphasis on consuming fruits and vegetables has long term health benefits and contributes to physical, cognitive and overall wellbeing (Lange-Collette, 2002) due to their high vitamin content. Vitamins help very essential to the body as most of them in the prevention of diseases, protect and boost the immune system, especially of the elderly whose immunity declines with increasing age.

On food selection and consumption by older men and women, there was substantial consumption of carbohydrate foods (76%); yam, cassava, maize, plantain, millet, etc., protein 18%, (meat, fish, beans, melon seeds, fats (palm oil, palm kernel oil margarine etc.) and oils 8% and vitamins 6% (fruits and green leafy vegetables). This depended on the choice of food they made towards the preparation of their meals.

Using BMI value of 18.5, 32% of the elderly were found to be underweight, 66% had normal weight of 18.5-24.9 kg/m^2 BMI while 2% were overweight with BMI of over 25kg/$m^{2)}$. The study therefore revealed a prevalence rate of 32% under-nutrition among the elderly in the study area. A significant relationship was observed in the different age groups and nutritional status of the elders, that is, the older elderly were more undernourished than the younger elderly. There was also a significant relationship observed between gender and nutrition.

In the study, out of the 32% who were found to be undernourished, 62.5% were women compared to 37.5% males. This is contrary to the findings of (Charlton and Donald, 2001) and (Tayie *et al,* 2004), that the prevalence of under-nutrition was higher in men than women in their study. However, this may be attributed to the fewer number of male respondents in the study than females. Underweight was detected in all respondents aged above 80 years, indicating that under nutrition, increased with age in the study area.

5.4 Nutritional Challenges of the Elderly

Twenty two percent (22%) of the elderly in the study chose food based on its availability, that is; their choices were determined by the food available in the geographical area or at home whether that suits their taste at that time or not. Sixty four percent (64%) chose food based on affordability/financial status; thus, they chose and ate what they or their caregivers could afford to purchase determined by their financial capability at that moment.

However, 14 % selected their food based on preference. Poor health status of the elders, stood at 53.1% and they were mostly found within the Body Mass Index (BMI) of 18.5kg/m ^{2} and below as compared to 46.9% who were within the normal range of 18.5-24.0 kg/m^2. Women had a higher percentage (62.5%) of poor health than men (37.5%) who complained of poor health. The most common health conditions affecting the elderly in the study area are hypertension, which stood at 54% and hernia 18%. Even when good food is available and the one who eats the food finds it difficult to chew and swallow, has loss of appetite and problems of digestion the individual might not be able to eat the food and may therefore become malnourished. Notice was also taken of nutritional problems resulting from a high rate

of loss of appetite as reported by 52%, indigestion (8%), chewing/dental problems (28%). Eating alone or isolation during mealtimes was reported by 56% and a loss of self-worth or depression was reported by 32%. Ten percent (10%) said they felt lonely and 10% also said they were worried. However, 10% of the elderly reported they were happy and 24% claimed they were content about the care they received. Many elderly were forced to remain isolated from the mainstream of life due to impinging factors. When one eats alone, the result is over-indulgence or disinterest in food. The social essence ascribed to eating is sharing a meal, which provides a sense of belonging. Food is used as a means of giving and receiving love, friendship or belonging.

The more the individual ages, the lesser food he or she is able to consume thereby reducing the intake, digestion and absorption of food which eventually affect the utilization of nutrients and contributes to the poor nutritional status of the individual. Mostly, the more the individual ages the faster the breakdown of the immune system exposing the greater majority to health problems that can interfere with food or nutrient consumption which therefore expose them to poor nutritional status. Medication due to poor health can also interfere with nutrient absorption into the system and so affect the nutritional status of the elderly negatively (Miller, 2004).

5.5 Caregivers and Challenges

According to Ghana Demographic Health Survey (GDHS, 2003) report, as the number of children per family increases, fewer resources are available for the upkeep of the family members. The nutritional status of members of highly populated families will be negatively affected as more people compete for the available inadequate food nutrients and it is the children and elderly who suffer most from malnutrition. Thirty-five percent of the elderly had their grandchildren with them

coupled with the children of their carerers and this swells the number of dependents of the family.

Though 44% of care-givers receive assistance from other family members like spouse, children and siblings, 56% of them cared for the elderly by themselves. The study also revealed that caregivers faced varied challenges in the discharge of their duties as 26% of the care-givers complained of financial challenges, 10% cited stress or energy exhaustion while 14% cited time constraints in the discharge of their duties and 50% said finance, stress and time combined to militate against their work.

In the study area, the common meals prepared are fufu and banku due to the availability of starchy roots like yam and cassava. Preparing fufu and banku can be time consuming and demands the use of much energy and money. Their preparation can become a burden on the caregiver`s financial and human resources (energy) especially when the caregiver does not have any good assistance from other members of the family or friends. It can also affect their selection of what to prepare for the elderly who may not be in consonance with what he or she loves and therefore may affect food intake of the elderly and this may in turn affect their nutritional status. Work roles may be a source of added stress for some, but may provide others with information and referral as well as an escape from care giving by means of distraction and socialization (Barnes, *et al*, 1995; Recce *et al*., 1983). Caregivers were also affected psychologically as 38% expressed their dissatisfaction about the care they provided with 12% being sad, and wished they could do better than what they were doing but were faced with challenges.

Some complained of health problems resulting from stress. Family care giving commonly results in psychological distress and increased risk of clinical depression as

allured by Blum, *et al.,* (1993). As a result of demands and stressors, caregivers of the elderly are at risk of burnout, depression, loss of income, and isolation. Health problems could result from the deleterious effect of stress on the immune system, resulting in less resistance to acute or chronic diseases. In addition to health risks, care giving can threaten wellbeing. This means, the more complex and difficult the challenges are for the caregivers the less effective their roles in meeting the dietary needs of the elderly.

This can go a long way to affect the care and nutritional status and general wellbeing of the elderly. From the study there is rather a significant relationship between the collective challenges care-givers face and the nutritional status of the elderly they cared for. Some of the caregivers were happy as indicated by 24%, while 26% were satisfied about the careful work they do. From the interview excerpts, some had much experience from the care they offer and others appreciate the fact that they are reimbursing that which they received from their parents. “The most obvious to the family is the protection of the wellbeing of the care recipient and the satisfaction of knowing that a parent was well cared for” (NAC & AARP, 1997) and the additional benefit of pride in doing a good deed, in making the recipient happy and of earning the recipient`s gratitude, fulfilling family obligations and repaying parents. This conforms with Blenker`s (1965) assertion that such rewards and benefits of care giving accrue not only during the time spent on care giving, but increase in value long after the parent`s death. There are latent benefits for caregivers since they avoid guilt and find comfort in rewarding memories. A good resolution of the filial crisis requires that, adult children attain greater maturity and better prepare for their own aging.

The study strongly revealed that, the major challenges faced by most caregivers are inadequate finance, time constraints and energy exhaustion (stress), health and psychological problems in addition to striving to meet the needs of their dependants and this had effect on the nutritional status of their elders. From table 4.9, the calculated Probability value of χ^2cal=19.782 with a degree of freedom (df) = 8 is 0.011,

that is [P (χ^2 >19.58) =0.011] and an alpha value (α) of 0.05. Since the calculated P-value (0.011) is less than the alpha value (0.05) the null hypothesis cannot be accepted, so, in effect, there is 95% confidence that variables are not independent of each other and that there is a statistical relationship between the categorical variables which are the challenges of the care-givers and the nutritional status of the elderly

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

The chapter presents a summary of findings and conclusion of the study, recommendations made to help in solving the challenges identified in the study and areas that need further research suggested.

6.1 Summary

The aim of the study was to find out how families in Dambai cared for their aged or elderly with functional limitations in meeting their nutritional needs, the nutritional status of these elderly, their nutritional challenges and the challenges the care-givers faced in the discharge of their duties.

A total sample size population of two hundred (a hundred elderly respondents a hundred caregivers) were involved in the study. Data was collected using questionnaires, interview guide, observation guide and anthropometric measurements. Most of the elderly had no source of income of their own, but some received remittances from family members. The majority of the elderly were not educated, and the few who ever had any form of formal education did not go beyond class six (primary 6). All except 12% of the elderly had children. Families care for the nutritional needs of their elderly by providing for their food (purchasing or sourcing for) and meal preparation. Most of the elderly ate thrice a day but none ate once a day; the choice of food was largely influenced by the prevailing economic situations. A prevalence rate of thirty two percent (32%) underweight was observed among the elderly in the study area which shows a significant under nutrition among the elderly.

The elderly faced financial challenges, varied health problems, social and family isolation due to age (ageism), low self-esteem. Some are however happy about the care offered by their children and other members of the family.

Caregivers who were mostly women provided care or assistance to their elderly in the form of meal preparation, shopping for food, cleaning and in some cases bathing. Some provided financial support and also provided for the elders` health needs. Care providers faced challenges of inadequate time, financial constraints, stress or energy exhaustion and health problems. Challenges of both elders and caregivers contributed significantly to the poor nutritional status of the elderly in the study area and not the inadequacy of food.

6.2 Conclusions

Nutrition plays a vital role in the growth, protection, provision of energy and maintenance of the general wellbeing of the individual especially when the body begins to wear down as a result of aging. The nutritional status of the elderly was not directly affected by the quality and quantity of food, but from economic situations of both the elderly and their caregivers and by other factors such as the health conditions and nutritional problems of the aged. Time, stress, finance and poor health of the caregivers were challenges faced in caring for the nutritional needs of the elderly in Dambai. These challenges have significant impact on the nutritional status of the elders, they cared for but in the face of all these, the nutritional wellbeing of the elderly in a rural setting like Dambai depends much on the family.

Families remain the basic social security (resource) for the aged especially those in the rural areas in the absence of publicly funded social security scheme which is non-existing for majority of the elderly in the study area. Although section 37 sub sections

6b of the 1992 constitution enjoins the state to provide social assistance to the aged such as will enable them maintain a decent standard of living, the elders are yet to experience this in Ghana; until then, the family and community still remain the backbone of the ageing population in Dambai and Ghana as a whole.

6.2 Recommendations

The high level of poverty in this age group requires the development and implementation of income generating strategies for both caregivers and elders who may wish to earn some income. Older people themselves and other stakeholders (government, religious organizations, non-governmental organizations etc.) should be involved in designing and implementing these beneficial income generating projects. Individuals or caregivers should also be aware and able to access various sources of advice (from church groups, NGOs, etc.) in order to ensure that the elderly have access to nutritious low cost meals, choosing from the locally available foods in order to save cost. Interventions to improve the nutritional status of the elderly in Dambai need to include effective nutrition programmes taking into account social and demographic factors such as household size.

Caregivers should be helped to empower themselves economically in order to be able to have other sources of income generation to help them meet their own needs and that of their elders. Families should strengthen the extended family ties by showing concern for other family members, especially the underprivileged within the family. Education on the selection, method of food preparation to preserve food nutrients and effective resources management should be given to both elders and their caregivers by experts in those fields. There should be interaction with elders during mealtimes, whenever possible for them to be able to enjoy their meals. Nutrition

counselling services and community nutrition programmes should be organized and monitored by experts in the health and nutrition areas in collaboration with the traditional and government authorities to ensure implementation of ideas when needed.

There is also the need for government, development partners and other Non-Governmental Organisations (NGO), communities and families themselves to collaborate and work out strategies towards the tackling of the needs of the elderly. There is the need to support and promote community based care in order to ensure that better services are provided to the aging population. Improved employment opportunities to induce younger people to remain in rural areas can benefit the elderly both economically and socially and this would facilitate adequate support and care for the elderly.

6.3 Areas of Further Research

The current study covered only the elderly who are sixty years and above with limitation(s) in Dambai in the Krachi-East district of the Volta Region. A similar study could be carried out in other communities. A study of caring for the nutritional needs of bedridden elderly and its associated challenges; similarly the nutritional care of toddlers of singled parents and challenges posed to these parents and children are areas that are equally important as the extent to which they affect the caregiver and care recipient is important to their wellbeing (both) especially in rural areas.

In order to generalize the results of the study to the district, it is suggested that three or more similar studies should be carried out in other communities in the district.

Also, studies should be conducted in developing appropriate methods for meeting the nutritional needs of elders.

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APPENDIX A

INTERVIEW GUIDE FOR THE ELDERLY

1. How old are you? [ ] Sex male [ ] female [ ]
2. Are you educated? Yes [ ] No [ ]
3. If yes, what is your educational level? I) primary II) middle school III) secondary IV) tertiary
4. Are you married? Yes [ ] No [ ]
5. Do you have children? Yes [ ] No [ ]. If yes, how many? [ ]
6. How many of your children live with you……..
7. Do you have any member of your family living with you apart from your children?
8. If yes, what is the relationship I) in-law II) cousin III) niece IV) grandchild V) others specify …….
9. Have you any source of income? Yes [ ] No [ ]
10. Do you have any source of remittance? Yes [ ] No [ ]
11. If yes, what is the relationship between you and the source?

12. How many times do you feed a day? I) Once II) twice III) thrice IV) four times

13. Who buys your food for you? I) self II) spouse III) children IV) other family members V) any other person

14. Who sees to the preparation of your food? I) spouse II) child III) grandchild IV) others, specify

15. ndicate from the list of local foods in Dambai, how you choose these food item

1 = not at all 2= Little 3= Moderately 4=abundantly

Food items	Not at all	Little	Moderately	Abundantly
Starchy roots /plantain				
Yam				
Cassava				
Plantain				
Potatoes				
Maize				
Millet				
Sorghum				
Rice				
Bread				
Meat/products				
Meat				
Fish				
Milk				

Egg				
Melon seeds				
Beans				
Groundnut				
Fats and oils				
Margarine				
Oils				
Fruits				
Pawpaw				
Pineapple				
Orange				
Vegetables				
Green leaves				
Cabbage				
Tomatoes				
Garden eggs				

16. Why do you like these foods than others? I) Preference II) economic III) availability
17. Are you restricted from eating any other foods? Yes [ ] No [ ]
18. If yes, by whom? I) doctor II) religion III) custom IV) family V) others specify
19. What are you restricted from eating? I) salt II) starchy foods III) meat IV) others specify
20. Do you experience any food allergy? Yes [ ] No [ ]
21. If yes, which foods?

22. What eating difficulties do you experience? I) chewing II) swallowing III) constipation IV) loss of appetite V) indigestion VI) others
23. What health problems do you experience? I) hypertension II) arthritis III) cancer IV) hernia V) others specify
24. Are you on any medication? Yes [ ] No [ ]
25. Do you sleep or rest well during the day? Yes [ ] No [ ]
26. How will you rate your present state of health? I) Normal II) quite good III) poor
27. How is your degree of difficulty in basic bodily functions in performing activities in relation to the following?

Activities	Good	satisfactory	Poor
Farming			
Cleaning of room			
Washing clothes			
Washing plates			
Walking in the courtyard			
Using toilet			
Eating			

28. Do you eat alone? Yes [ ] No [ ]. If yes, what are the reasons? I) isolation II) personal III) cultural IV) health VI) any other reason specify.
29. How would you rate the care given by your family members in relation to your health and wellbeing? I) good II) fair III) poor

30. How do you feel most of the times? I) happy II) worried III) depressed IV) lonely V) content

Observation guide for the elderly

1=Good, 2=Fair, 3=Poor

Personal attributes	Good	Fair	Poor
Nails			
Hair			
Teeth			
Clothes			