REGIONAL INSTITUTE FOR POPULATION STUDIES (RIPS)

UNIVERSITY OF GHANA

PHYSICAL AND MENTAL HEALTH OUTCOMES OF CAREGIVING IN ACCRA

BY

FRANK KYEI-ARTHUR

THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN
PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF
MPHIL POPULATION STUDIES DEGREE.

JULY, 2013.

ACCEPTANCE

Accepted by the Faculty of Social Sciences, University of Ghana, Legon, in partial fulfilment of the requirements for the award of MPhil Population Studies.

…………………………………

Prof. Ama de-Graft Aikins

Supervisor

Date ………………………

…………………………………

Dr. (Mrs.) Delali M. Badasu

Co - Supervisor

Date ………………………

DECLARATION

I, Frank Kyei-Arthur, hereby declare that except for references made to other people's work which have been duly acknowledge, this work is the result of my own research undertaken under supervision and that it has neither in part nor in whole been presented for another degree elsewhere.

…………………………………

Frank Kyei-Arthur

(Student)

Date ………………………..

DEDICATION

This thesis is dedicated first to the Almighty God for his mercies, grace, favour and gift of life. Secondly, this is dedicated to my family especially my parents and uncles whose consistent love and support has brought me this honour and finally to all people who have been part of my success.

ACKNOWLEDGEMENT

Thanks to Almighty God if not by his grace and mercies this work could not have yielded the desired results.

I wish to express my heart-felt gratitude to my supervisors, Prof. Ama de-Graft Aikins and Dr. (Mrs.) Delali M. Badasu for their motherly love, guidance, attention and support throughout the study. I really appreciate their constructive criticisms.

I am also grateful to the teaching and non-teaching staff of the Regional Institute for Population Studies (RIPS) for the opportunity to be part of their loving family.

I also want to thank New York University (NYU) Project for their generosity.

I am also grateful to all the PhD and MA students and my colleagues at RIPS for their assistance and support especially Ernest Kwabena Afrifa-Anane, Adriana Biney, and Abu Mumuni. And also to Dr. Naa Dodua Dodoo, I appreciate the bits and pieces you added to my work and life. God bless you all.

TABLE OF CONTENTS

TITLE **PAGE**

LIST OF TABLES

TITLE **PAGE**

LIST OF FIGURES

TITLE **PAGE**

LIST OF ABBREVIATIONS

AARP - American Association of Retired Persons

ABS - Australian Bureau of Statistics

AHRQ - Agency for Healthcare Research and Quality

AIDS - Acquired Immune Deficiency Syndrome

DALY - Disability-adjusted life year

FCA - Family Caregiver Alliance

HIV - Human Immunodeficiency Virus

IADLs - Instrumental activities of daily living

NAC - National Alliance for Caregiving

NACP - National AIDS Control Programme

NCD - Non-communicable diseases

PLWHA - People living with HIV/AIDS

T1DM - Type 1 diabetes mellitus

T2DM - Type 2 diabetes mellitus

UNAIDS - Joint United Nations Programme on HIV/AIDS

WHO - World Health Organisation

ABSTRACT

One of society's great resources for provision of care is its numerous family members who provide care to ill or disabled relatives. However, family caregivers perform these essential services for society and their relatives at considerable cost to themselves. Caregiving resulting in a decline in physical and emotional health, increased depressive symptoms, and a decreased sense of well-being. The main objective of this study was to examine the relationship between caregiving and physical and mental health of respondents in Accra (Ga Mashie and Agbogbloshie).

This study utilized the second round of EDULINK Urban Health and Poverty Project collected among residents of Ga-Mashie (James Town and Ussher Town) and Agbogbloshie between November 25th and December 22nd 2011. Binary logistic regression models were used to determine the factors affecting physical and mental health.

Findings showed that majority of respondents were non-caregivers (89 percent) and more than half of the respondents (56 percent) were females. About one-third of respondents (33.5 percent) were aged 15 to 24 and about 23.5 percent been currently married. The majority of respondents were Christians (79.8 percent). Empirical results from the binary logistic regression revealed that caregiving was not related to physical and mental health. The results also revealed that age, monthly income and chronic condition status were significantly related to physical health. In addition, the result revealed that age, education, and monthly income were significantly related to mental health. Public health interventions to improve physical health and mental health should target the aged who are most vulnerable.

Keywords: Caregivers, Elderly, Physical health and Mental health.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Caregiving is a global phenomenon. Family caregivers are found in every nation and most often, women are the primary caregivers in both developed and developing countries (Barratt, 2007). For example in Ghana, family caregivers are more likely to be women irrespective of whether the care recipient is male, female, adult or a child (Manuh & Quashigah, 2005). One of society's great resources for the provision of care is its numerous family members who provide care to ill or disabled relatives (Schulz & Beach, 1999). It is estimated that about 66 million family caregivers provide care to relatives in the United States alone, and this number is expected to rise (NAC, 2009). Family members most often begin caregiving before they even recognize it by providing support with minor activities, such as simply 'checking in' with a loved one (Coughlin, 2010) and visiting (Sackey, 2005).

The act of, "feeling concerned and taking charge of the well-being of the sick", is expected from and delivered by the family within the domestic context, rather than from paid professionals (Antwi & Atobrah, 2005). For example in Ghana, the family is the main institution which provides care for sick people and this is due to several factors including decline in the quality of health services, uneven distribution of hospitals and other medical facilities (Manuh & Quashigah, 2005) and shortage of health care professionals (Antwi, 2005; Oppong, Antwi & Waerness, 2009). Apt (n.d:85 cited in Sackey, 2005) has documented that majority of elderly Ghanaians are taken care of when ill by their children or grandchildren.

However, family caregivers perform an essential service for society and their relatives at considerable cost to themselves (Schulz & Beach, 1999). Caregivers often neglect their own health and hide information about their health problems (Ward-Griffin and McKeever, 2000 cited in Chang, Chiou and Chen, 2010). Research has established that caregiving resulting in a decline in physical and emotional health, increased depressive symptoms, and a decreased sense of well-being (FCA, 2006; Fatoye, et al., 2006).

Considering the fact that caregiving can have an impact on the caregiver's physical, mental and emotional health, the present study investigates the physical and mental health outcomes of caregiving in Accra (Ga Mashie and Agbogbloshie).

1.2 Statement of the problem

Although caregivers perform important services for their society, friends and relatives, informal caregiving often takes an enormous toll on them. For example, Family Caregiver Alliance (2006) revealed that family caregivers reported poorer physical health, higher mortality rates, high levels of frustration and stress than non-caregivers. The study also argued that caregivers are also less likely to engage in health promotion and prevention activities because they have less time to care for themselves. Research has also established that caregivers who ignore their own health needs have a greater chance of developing health problems (Gruetzner, 2001).

Despite the negative challenges experienced by caregivers, more than one-third of caregivers continue to provide intense care to others while suffering from poor health themselves (Navaie-Waliser, et al., 2002). These challenges can hinder caregivers' ability to provide care, lead to higher health care costs and affect the quality of life of both care recipient and caregiver. Thus, caregivers' negative challenges can result in decline in the quality of care provided to care recipients, who depend solely on caregivers for support. This problem can have a significant public health impact as it decreases quality of life for care recipients, causes premature death, and emotionally, physically, and economically impacts families, communities, and societies at large (WHO, 2005; Lee, Colditz, Berkman, & Kawachi, 2003; Grunfeld et al., 2004).

Furthermore, several studies have well indicated that most caregivers are ill-prepared for their role, provide care with little or no support, have inadequate knowledge to deliver proper care, and receive little guidance from formal health care providers (National Alliance for Caregiving & AARP, 2004; Alzheimer's Association & National Alliance for Caregiving, 2004; Family Caregiver Alliance, 2006; Bucher, et al, 2001; Scherbring, 2002; Schumacher, 2000).

Pillemer, et al. (2003) reported that the process of becoming a caregiver can be seen as a transition which causes changes and adaptations in individuals' social networks and psychosocial well-being, and as a result may have a large impact on the caregiver's life as they assume new caregiving roles and responsibilities.

Meanwhile, urbanization and its associated changing lifestyles which include unhealthy diets, physical inactivity, alcohol in-take, smoking or substance use, psychosocial stressors and some environmental factors (Kaufman et al. 1996; Agyei-Mensah and de-Graft Aikins 2010) will lead to increase in the prevalence of non-communicable diseases which create conditions of need for caregiving. The prevalence of major chronic non-communicable diseases and their risk factors has increased over time and contributes significantly to the Ghana's disease burden (de-Graft Aikins, et al., 2012). The increase in the prevalence of major chronic non-communicable in Ghana means more family members and friends are likely to assume caregiving roles and responsibilities and may experience its associated negative challenges in future. For example, research has indicated that majority of care recipients are cared for by close relatives and friends because of increase in incidence and prevalence of non-communicable diseases and the lack of or limited institutional facilities and specialists for caregiving in developing countries (Beaglehole & Yach, 2003; Huerta & Grey, 2007).

Again, population ageing is also seen as a global challenge which will impact developing countries greatly (Ayernor, 2012). Velkoff and kowal (2006) revealed that nearly 63% of the population age 60 and older currently resides in developing countries, and this percentage will increase to nearly 73% over the next 25 years. In Ghana, the percentage of the total population aged 60 years or over is projected to increase from 6% in 2012 to 12% by 2050 (United Nations, 2012). According to Mba (2010), the process of aging exposes individuals to increasing risk of illness and disability, and he further argued that many Ghanaians may enter old age already in chronic ill-health as a result of lifetime exposure to health problems.

Research has indicated that generally the incidence of chronic non-communicable diseases increases rapidly with advancement in age (Murray & Lopez, 1996; Ferrucci, 2008; Blumenthal, 2003; Ramashala, 2002). For example, in Ghana a study conducted among the elderly in Accra reported that the major health problems reported by older adults in health centres were hypertension, stroke, diabetes and arthritis (WHO, 2004). Ghana’s health systems are poorly equipped to address the growing chronic disease burden and therefore place a significant burden of care on chronically ill individuals and their caregivers (de-Graft Aikins, 2007). Ramashala (2002) argues that chronic illness and disability will increase the likelihood that many very old adults will no longer be able to live independently but will require care.

Finally, research has established that caregiving can lead to/affect productivity in organizations and national development (Giovannetti, Wolff, Frick & Boult, 2009; Coughlin, 2010). Studies had established that caregiving can result in problems in the employment environment such as: quitting of job, reduction or readjustment of the workday hours, impossibility to access the job market, increases in the workday hours to compensate for the loss of income provoked by the care, loss of incomes and negative effects on promotion and job ascent (Havens, 1999; Jenson and Jacobzone, 2000 cited in Carretero, Garces, Rodenas, & Sanjose, 2009). For example, a study by Sackey (2005, p. 191) demonstrated that sometimes caregivers quit their jobs to enable them provide care to their care recipients. Therefore, an increase in the number of caregivers will imply that more people in the working force will become less productive. Hence, Ghana will be at risk of low productivity.

In light of this, this study aims to investigate the physical and mental health outcomes of caregiving in Accra (Ga Mashie and Agbogbloshie).

1.3 Research Questions

In light of the foregoing discussion, the present study seeks to answer the following questions:

1. What are the levels of caregiving among the study areas/population?
2. What are the levels of social support among the study areas/population?
3. What is the physical health status of respondents in the study areas/population?
4. What is the mental health status of respondents in the study areas/population?

5. Is there association between caregiving and physical health of respondents in the study areas/population?

6. Is there association between caregiving and mental health of respondents in the study areas/population?

1.4 Objectives

The general objective of the present study is to examine the relationship between caregiving and physical and mental health of respondents in Accra (Ga Mashie and Agbogbloshie). The specific objectives are:

1. To find out the levels of caregiving and social support and the status of physical and mental health within the study areas/population.

2. To examine the association between caregiving and physical and mental health of respondents in the study areas/population.

3. To examine the factors which are related to physical and mental health of respondents in the study areas/population.

4. To make recommendation(s) for policy.

1.5 Rationale of the study

Caregivers can experience harmful physical, mental, and emotional consequences supporting caregivers in their caring role is high on the public policy agendas of many developed countries (Hirst, 2002). Walker (2011) reported that majority of research examining the impact of caregiving has been conducted in developed countries, specifically in the United States, Western Europe, China, Japan, and Taiwan. Although, literature suggests that some studies have examined the distress felt by family caregivers in developing countries; however, this area is largely unexplored, especially in sub-Saharan Africa countries (Walker, 2011), including Ghana. This implies that more studies are needed in sub-Saharan Africa countries to investigate the impact of caregiving.

According to Manuh (2005 cited in Oppong, Antwi, and Waerness, 2009), the situation regarding care of the sick is particularly critical in Ghana at the present time due to serious shortage of trained nurses to provide nursing care in hospitals and homes. It is mostly the female family members who care for the ill. However, increase in the work loads of women may prevent them from effectively providing adequate care to their care recipients.

Finally, the study areas are two communities in central Accra which are characterized by high rates of extreme poverty with a lot of rural-urban migrants who are mostly youth (Henry and Fayorsey, 2002; Agyei-Mensah and de-Graft Aikins, 2010). This factor also makes it very important to conduct a study in such urban poor context since poverty has implications for quality caregiving.

Determining the extent to which providing care results in physical, emotional, and financial burdens is important to optimize the quality of caregivers' lives and maintain their ability to support and care for the patient (Kim & Schulz, 2008). Research on physical and mental health outcomes of caregiving in Accra (Ga Mashie and Agbogbloshie) is particularly relevant for understanding the multifaceted nature of caregiving and the formulation of policies and strategic programmes that can reduce the impact of caregiving on caregivers.

1.6 Organization of Study

The present study is divided into seven main chapters. Chapter one consists of the introduction; background of the study, statement of the problem, research questions, objectives, rationale of the study and organisation of study. Chapter two consists of literature review, conceptual framework and hypotheses. Chapter three focus on the methodology of the study. In chapter four, the socio-demographic characteristics of respondents in the study communities are explored. Chapter five concentrates on the relationship between each variable group (caregiving, social support and the control variables) and the dependent variables (physical and mental health). In chapter six, the predictors of physical and mental health of respondents are examined while the finally chapter, chapter seven, consists of the summary, recommendations and conclusion of the study.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Introduction

This chapter is divided into three sections. The first section will focus on the review of literature on caregiving to the sick and elderly. In addition, the second section will focus conceptual framework for the present study while the last section will focus on the hypotheses of the present study.

2.2 Literature review

Majority of research conducted on the impact of caregiving has been conducted in developed countries (Walker, 2011). Most of such researches either use a qualitative approach or a quantitative approach. And also most researches looked at particular chronic conditions such as cancer, dementia and stroke. This section reviews the body of literature related to the present study.

2.2.1 The concept of caregiving

The concept of caregiving has been studied from multidisciplinary fields, including nursing, sociology, and psychology (Connell, 2003; Mendez-Luck, Kennedy, & Wallace, 2009 cited in Hermanns, & Mastel-Smith, 2012). Research has well documented that the concept of caregiving lacks a universal definition (Connell, 2003; Hermanns, & Mastel-Smith, 2012), and thus, makes it difficult to assess the concept of caregiving as well as compare the results of caregiving research (Hermanns, & Mastel-Smith, 2012). Caregiving is a popular gerontological research topic which usually focused on the stresses and burdens experienced by caregivers to older adults

(Vitaliano, Young, & Russo, 1991; Zarit, Johansson, & Jarrott, 1998 cited in Chappell, & Dujela, 2008). Sims-Gould & Martin-Matthews (2007) argues that the application of theory from multiple disciplines has contributed to improved understandings of caregiving. In the literature, caregiving is classified as informal and formal.

Drentea (2007 cited in Hermanns, & Mastel-Smith, 2012) refers to caregiving as the act of providing unpaid assistance and support to family members or acquaintances who have physical, psychological or developmental needs. According Pitkeathley (1989), an accepted definition of a carer/caregiver is someone who is responsible for the care of someone who is mentally ill, mentally handicapped, physically disabled or whose health is impaired by sickness or old age. Savage & Bailey (2004) also define a caregiver as a relative, friend or neighbour who provides practical, day-to-day unpaid support for a person unable to complete all of the tasks of daily living. The concept caregiving is defined by Bowers (1987 cited in Connell, 2003) as the meaning or purpose a caregiver attributes to behaviour rather than by the nature or demand of the behaviour itself. Hermanns & Mastel-Smith (2012) revealed that caregiving process was originally proposed by Bowers (1987) and includes five categories of roles that provide meaning or purpose for the caregiver namely anticipatory, preventive, supervisory, instrumental and protective.

According to Blum & Sherman (2010) informal caregiving is complex and the relationships are dynamic. Hudson & Payne (2009) defined informal caregivers as any relatives, friends, or partners who have a significant relationship with and provide assistance (i.e., physical, emotional) to a patient with a life-threatening, incurable illness. In contrast, formal caregiving is classified as paid services of licensed or unlicensed strangers provided under the umbrella of a formal health care system (Abel, 1986, 1991; Brody, 1981; Himes, 1992 cited in Connell, 2003). It is worth noting that the various definitions of caregiving typically contained elements related to the act of caregiving or tasks performed of caregiving, which makes the concept difficult to identify (Swanson et al., 1997 cited in Hermanns, & Mastel-Smith, 2012).

According to Connell (2003), research on caregiving has concentrated on areas of study such as chores performed by caregivers, the stresses and burdens of caregiving and the roles that caregivers assume and are assigned. Scharlach (2008) argued that research on caregiving vary in their selection criteria, such as the age of the care recipient, the level and type of impairment, and the type and amount of assistance provided. Research has established that a number of instruments are available to measure the concept of caregiving (see Table 2.1), however these tools do not measure caregiving itself but rather attempt to measure the effects of caregiving, i.e., management of caregiving tasks: burden, demands, impact, and distress (Hermanns, & Mastel-Smith, 2012).

Table 2.1: Caregiving Instruments

No	Instrument
1.	Caregiving Competence Scale (Pearlin, L. I., Mullan, J. T., Semple, S. J., & Skaff, M. M., 1990).
2.	Caregiving Burden Scale (Schumacher, K. L., Stewart, B. J., Archbold, P. G., Caparro, M., Mutale, F., & Agrawal, S., 2008).
3.	Caregiver Demands Scale (Siefert, M. L., Williams, A., Dowd, M. F., Chappel-Aiken, L., & McCorkle, R., 2008).
4.	Caregiving Role Demands Scale (Mui, A. C., 1992).
5.	Beliefs About Caregiving Scale (Hepburn, K. W., Lewis, M., Narayan, S., Center, B., Tornatore, J., Bremer, K. L., & Kirk, L. N., 2005).
6.	Caregiving Activities Scale (Hancock, K., Chang, E., Chenoweth, L., Clarke, M., Carroll, A., & Jeon, Y-H., 2003).
7.	Caregiving Role - Preplacement (Gaugler, J. E., Zarit, S. H., & Pearlin, L. I., 2003).
8.	Caregiving Learning Goal Achievement and Satisfaction Measure (Rosswurm, M.,

	Larrabee, J. H., & Zhang, J., 2002).
9.	Caregiving Consequences Inventory (Sanjo, M., Morita, T., Miyashita, M., Shiozaki, M.,; Sato, K.,; Hirai, K., Shima, Y., & Uchitomi, Y., 2009).
10.	Impact of Caregiving Scale (Cousins, R., Davis, A. D. M., Turnbull, C. J., & Playfer, J. R., 2002).
11.	Caregiving Distress Scale (Cousins, R., Davis, A. D. M., Turnbull, C. J., & Playfer, J. R., 2002).
12.	Caregiving Stress Measure (Martire, L. M., Keefe, F. J., Schulz, R., Ready, R., Beach, S. R., Rudy, T. E., & Starz, T. W., 2006).
13.	Zarit Burden Scale (Gaugler, J. E., Kane, R. L., Kane, R. A., & Newcomer, R., 2005).
14.	AIDS Caregiver Stress Interview (Wight, R. G., Aneshensel, C. S., & LeBlanc, A. J., 2003).
15.	Caregiver Competence Scale (Narayan, S., Lewis, M., Tornatore, J., Hepburn, K., & Corcoran-Perry, S., 2001).
16.	Caregiving Satisfaction Scale (Kramer, B. J., 1993).
17.	Caregiving Involvement Scale (Chou, K. R., LaMontagne, L. L., & Hepworth, J. T., 1999).
18.	Positive Aspects of Caregiving Scale (Narayan, S., Lewis, M., Tornatore, J., Hepburn, K., & Corcoran-Perry, S., 2001).

Source: Caregiving Instruments cited in Hermanns, & Mastel-Smith, 2012, pp. 5.

Scharlach (2008) revealed that interest in family caregiving dates to the 1960s and expanded in the 1970s with studies such as Troll's examinations of intergenerational family relationships (Troll, 1971), Cantor's (1991) hierarchical model of family care and the development of caregiver-burden measurement tools such as the widely used Zarit Burden Interview. The 1980s saw the explosion of literature on caregiving to aging family members (Walker, Pratt, & Eddy, 1995) and the conducting of the first national surveys of informal caregivers for disabled older adults (Scharlach, 2008). The 1990's was a decade of fruitful conceptual developments in family caregiving research (Fletcher, Miaskowski, Given, & Schumacher, 2012**)**. Scharlach (2008) argued that the 1990's also saw studies of caregiving prevalence and needs, evaluations of interventions intended to alleviate caregiver distress, and the physiologic and psychological toll of the chronic stress experiences of caregivers. Over the past 2 decades, much attention has focused on the negative impacts of caregiving by both social and health practitioners (Pinquart & Sorensen, 2003b, 2005 cited in Montgomery, Rowe, & Kosloski, 2007).

2.2.2 Description of typical caregivers

Generally in the literature, a family member serves as the primary source of care for an impaired elderly person, although other family members and friends may serve as secondary caregivers (Montgomery, Rowe, & Kosloski, 2007). According to Montgomery, Rowe, & Kosloski (2007) selection of the primary caregiver follows a hierarchy which is linked to sex, generation, and geography. When a spouse is available, he/she provides the majority of care but in the absence of a spouse, a daughter is most likely to assume the role. Studies have found that female children are twice as likely as male children to become a primary caregiver (AHRQ Research Report, 2001; Campbell & Martin-Matthews, 2003 cited in Montgomery, Rowe, & Kosloski (2007).

According to Spillman & Pezzin (2000 cited in Montgomery, Rowe, & Kosloski, 2007) children who act as active caregivers outstrip spouses. In the absence of one’s children, more distant family members take up the responsibility. Research has documented that an individual may become a caregiver due to the fact that he/she has few competing responsibilities, including obligations to spouse, children, and employers (Brody, 1990; Stern, 1996 cited in Montgomery, Rowe, & Kosloski, 2007). Literature has established that relatives who engage in caregiving such as daughter, son or spouse, tends to differ by ethnicity and income (Dilworth-Anderson & Gibson, 2002 cited in Montgomery, Rowe, & Kosloski, 2007). For example, among Asian groups, sons are often identified as caregivers who assist with instrumental activities of daily living (IADLs) (e.g., cooking, shopping, accessing means of transportation, or taking medicines) and daughters-in-law provide assistance with household tasks and personal care (Youn, Knight, Jeong, & Benton, 1999 cited in Montgomery, Rowe, & Kosloski, 2007).

Geography can also influence the selection of the primary caregiver. For example, instances where the adult children live closer to their parent, they are more suitable to undertake caregiving responsibilities. However, adult children who live at a distance frequently provide assistance in financial and legal matters and also see to the arrangement for the provision of direct care by paid caregivers (Montgomery, Rowe, & Kosloski, 2007).

2.2.3 Global context of caring for the sick and elderly

For various reasons, care of the elderly and ill itself has become a rapidly growing and more visible problem at the global level (Oppong, Antwi & Waerness, 2009). Some of these reasons includes: the rising numbers and proportions of population over sixty five, developments in illness patterns partly as a result of changing modes of disease transmission and modern diets and life styles, and improvements in many medical treatments and technologies available which may serve to prolong the life of the very sick (Oppong, Antwi & Waerness, 2009).

Longer life expectancy imply that more older people living longer, as healthy and autonomous persons, and also more people surviving into old age for much longer periods (Oppong, Antwi & Waerness, 2009). They sometimes suffer debilitating illness and survive as frail elderly, with greater needs for daily help and care. Influences of such changes are being felt all over the world.

Both men and women may have great difficulty coping with the demands of sick family members, as well as their employment demands and meeting the regular needs of relatives, including dependent children (Oppong, Antwi & Waerness, 2009).

Research has well documented that when chronic illness enters the family it initially takes a central role requiring that families organize around it and adapt accordingly (Rose-Itkoff, 1987 cited in Blanchard, Hodgson, Lamson, and Dosser, 2009). However, excessive centrality of an illness may lead families to become "stuck" in patterns appropriate for short term use, but not for long term effectiveness. Families may also organize around a certain belief or explanation of the illness (Phipps & Lazzarini, 1987 cited in Blanchard, Hodgson, Lamson, and Dosser, 2009). The care of the seriously ill may either result in family solidarity or magnify existing dissensions and rancor within families, as the question of who takes care of the sick sometimes becomes extremely contentious (Sackey, 2005). Thus, the care of the sick could unite or bring dissension among family members. For example, some family members believe that illness in the family may be a blessing because it brings their family closer together. Their interpretation of the illness may promote group identity and interaction and this may determine how they address, resolve, or avoid conflict within their family (Blanchard, Hodgson, Lamson, & Dosser, 2009). On the contrary, studies by Brody et al. (1989 cited in Scharlach, Li, & Dalvi, 2006) and Strawbridge & Wallhagen (1991 cited in Scharlach, Li, & Dalvi, 2006) revealed that about 40% of caregivers reported they experienced serious conflict with a family member, who was usually a sibling unwilling to provide the expected amount of help. Semple (1992 cited in Scharlach, Li, & Dalvi, 2006) argued that spouses commonly experienced conflicts with children while offspring were more likely to report conflict with siblings as a result of caregiving.

2.2.4 African context

The rapid modernization of many aspects of people's life on one hand and the persistence of different customs on the other hand, makes the tension and strains of caring for the seriously sick more problematic, challenging and difficult to cope with than in the welfare states in the North (Oppong, Antwi & Waerness, 2009).

In most developing countries, providing support for older people is still primarily a family responsibility (National Research Council (US) Committee on Population, 2006). Traditionally in sub-Saharan Africa, the main source of support has been the household and family, supplemented in many cases by other informal mechanisms, such as kinship networks and mutual aid societies (Aboderin, 2004).

In Africa, the family provides most of the care for its sick and elderly population (Apt, 1995), although traditional caring and social support mechanisms now appear to be declining (Apt, 1996; Dhemba, Gumbo, and Nyamusara, 2002; Mukuka, Kalikiti, and Musenge, 2002; Williams, 2003 cited in National Academy of Sciences, 2006). It is well established that family members play a major role in providing caregiving assistance to elderly persons and their families (Faison, Faria and Frank, 1999).

Although, a caregiver can be anybody, in real life females (women and children) bear this responsibility (Sackey, 2005). Brewu (2004: 20 cited in Sackey, 2005) writes that matrikin, particularly uncles, brothers and sisters and their descendants assist in healthcare, and while the men take up the financial care, the women give the practical care. A study by Dennis-Antwi, Culley, Hiles, and Dyson (2011) on lay perceptions of sickle cell disease in Kumasi revealed that fathers had a good deal of knowledge of sickle cell disease and they acquired such knowledge through family interactions and experiencing caregiving in times of illness.

According to Van der Geest (2002), ‘most of the practical activities performed for elderly people are in fact, female tasks. Men rarely cook or wash’. Generally, a woman caring for the sick is a universal phenomenon and a man’s main contribution to care is to provide money and pay visits (Sackey, 2005).

2.2.5 Ghanaian context

In Ghana, there is often an abundance of support for the sick and their families, even in the era of the collapse of lineage or the ‘extended family’ system. Friends, workmates, classmates and establishments such as companies have stepped in to fill the vacuum (Owusu, 2005). In Ghana, family caregivers are generally likely to be women, in their role as mothers, sisters, daughters and wives. This is the case whether the seriously ill person is male, female, adult or a child (Manuh & Quashigah, 2005).

Majority of elderly Ghanaians are generally taken care of when ill by their children or grandchildren (Apt n.d:85 cited in Sackey, 2005). Ghanaians pride themselves on taking care of their older people and regard institutionalized care and euthanasia in “Western” countries as unfortunate developments, indications of a declining willingness to care for the elderly (Van der Geest, 2005).

According to Van der Geest (2002), among the Kwahu (Akan) caring for the sick is the responsibility of the children before the *abusua* (family) and in their absence the wives can offer care. A study by Apt (n.d:85 cited in Sackey, 2005) revealed that at least 50 percent of elderly men are nursed and cared for by their wives.

Responsibilities of individuals in the area of health care can be found in proverbs, adages and myths and the seriousness attached to these ensures the smooth running of social relations in the cultural setting (Sackey, 2005). Below are two relevant proverbs that may be used to determine caregiving arrangements in Akan culture;

- Se obi hew wo ma wo se fifir a, wo so hwe no ma ne se tutu (if someone takes care of you to grow your teeth, you must also take care of that person to loose his/her teeth).
- Nsa benkum guare nyimfa na nyimfa so guare benkum (the left hand washes the right hand and the right hand washes the left) (Sackey, 2005).

In other words, caregiving is seen as a moral obligation (Sackey, 2005).

2.2.6 Caregiver burden

When family/friends become caregivers, in addition to their own responsibilities, they take on the responsibilities of the patient and the household, which often leads to caregiver burden (e.g., Schott-Baer, 1993; Boyle et al., 2000; Kuijer et al., 2002 cited in Applebaum and Breitbart, 2012). Given et al. (2001a, p. 5 cited in Applebaum and Breitbart, 2012) describe caregiver burden as a "multidimensional biopsychosocial reaction resulting from an imbalance of care demands relative to caregivers' personal time, social roles, physical and emotional states, financial resources, and formal care resources given the other multiple roles they fulfill". Zarit, Reever, & Bach-Peterson (1980 cited in Carretero, Garces, Rodenas, & Sanjose, 2009) also explained caregiver burden as ''a state resulting from the action of taking care of a dependent or elderly person, a state which threatens the physical and mental health of the caregiver''. In addition, George and Gwyther (1986 cited in Carretero, Garces, Rodenas, & Sanjose, 2009) described caregiver burden as ''the persistent difficulty to provide care and the physical, psychological, and emotional problems which caregivers or family members can experience when caring for a relative with a disability or some type of deterioration''.

Informal caregivers are often unprepared for what this new role entails (Northouse et al., 2000; Carlson et al., 2001; Given et al., 2001b; Bishop et al., 2007 cited in Applebaum and Breitbart, 2012). Informal caregivers also often have a wide range of unmet needs (Hileman et al., 1992; Laizner et al., 1993; Hodgkinson et al., 2007; Kim & Given, 2008 cited in Applebaum and Breitbart, 2012).

Informal caregivers do not only face the physical and emotional demands associated with caregiving, but, in addition, the patients for whom they provide care may no longer be able to provide them with the emotional support that they once did (Francis et al., 2010 cited in Applebaum and Breitbart, 2012). Therefore, informal caregivers are often unprepared to provide instrumental support (i.e., the "doing" of caregiving) and also often may be in great need of emotional support themselves.

It is therefore not surprising that informal caregivers experience a range of psychological complications including fear, hopelessness, and mood disturbances (Dumont et al., 2006; Oldham et al., 2006 cited in Applebaum and Breitbart, 2012). Several studies have reported rates of anxiety and depression among family caregivers (Kris et al., 2006; Rivera, 2009 cited in Applebaum and Breitbart, 2012). For example, a longitudinal study of breast cancer patients and their principal caregivers by Grunfeld et al. (2004) revealed that more caregivers than patients were anxious (35% v. 19%) and also more caregivers than patients were depressed (30% v. 9%).

In addition to mental health issues, informal caregivers also experience a wide range of physical health complications as a result of their role including sleep difficulties (Cho et al., 2006), fatigue (Teel & Press, 1999), cardiovascular disease (Lee et al., 2003; von Kanel et al., 2008), poor immune functioning (Kiecolt-Glaser et al., 1987) and increased mortality (Schulz & Beach, 1999; Christakis & Allison, 2006). Several studies have also reported an increase in alcohol and tobacco use, lack of exercise, and decreased health service utilization among family caregivers (Sherwood et al., 2008).

Additionally, caring for a patient with a condition such as cancer places a large financial and temporal demand on caregivers (Hauser & Kramer, 2004; Grov et al., 2006 cited in Applebaum and Breitbart, 2012). Data from a national survey of caregivers showed that, on average, cancer caregivers provide care for 8.3 hours each day for 13.7 months (Yabroff & Kim, 2009), and that this care includes providing emotional, instrumental, tangible, and medical support. Moreover, the annual economic value of caregiving in the United States was estimated at $375 billion (National Alliance for Caregiving, 2009). Therefore, the burden experienced by informal caregivers is multifaceted and includes the potential for significant psychological, physical, temporal, and financial demands.

2.2.6.1 Caregiver emotional responses and overall mental health

Typically, caregivers experience both negative and positive feelings simultaneously (Kramer, 1997; Walker et al., 1995 cited in Lin, Fee and Wu, 2012). According to Savage and Bailey (2004), the negative impact of caregiving on the mental health of caregivers is substantiated in the literature. For example, the Victorian Carers Program conducted a population-based study in which differences in well-being between caregivers and non-caregivers were demonstrated

(Schofield et al., 1998 cited in Savage and Bailey, 2004). The researchers found less life satisfaction, less positive affect, and more negative affect among caregivers compared with non-caregivers, regardless of age or marital status. According to Australian Bureau of Statistics (ABS) (1998 cited in Savage and Bailey, 2004), approximately 30% of caregivers reported that their well-being had been affected by caregiving, and that they were often worried or depressed.

Research has well established that providing care to a loved one with cancer can impact caregiver depressive symptoms, burden, and anxiety (Pinquart & Sorenson, 2003b). Overall, caregivers report higher levels of depression and stress than non-caregivers (Pinquart & Sorenson, 2003a). An analysis of 152 family caregivers of patients with cancer who had died in the United States revealed that the majority of participants reported moderate to high levels of depressive symptoms (Given et al., 2004).

Studies about factors that negatively impact feelings of depression and burden have also been examined. A meta-analysis examining caregivers of different populations of patients in the United States described the associations between patient impairments, involvement of caregivers, and uplifts of caregiving with caregiver burden and depression. It was found that caregiver burden and depression were most strongly related to patient behaviour problems (Pinquart & Sorenson, 2003b). Morimoto, Schreiner & Asano (2003) had similar findings in an analysis of caregivers of stroke patients recruited through seven different neurological hospitals in Japan. It was reported that increased caregiving hours was significantly correlated to increased caregiver burden, which was found to relate to increased depressive symptoms in caregivers. These studies highlight the mental health impact that the various tasks and responsibilities of caring for a loved with cancer can have on the caregiver throughout the care trajectory.

Research has shown that certain aspects of caregiving cause higher levels of stress in caregivers, which contribute to feelings of depression and burden. Research by Tsai and Jirovec (2005) examined caregivers of chronically ill relatives and found that hours of care provided, gender, and age are important factors contributing to perceived stress and indirectly to caregiver depression. Higher perceived stress was significantly correlated with an increase in depressive symptoms, which can lead to poor health function, lower self-esteem, and lower marital satisfaction.

Savage and Bailey (2004), stated that some researchers have investigated the positive aspects of caring, such as the satisfaction experienced by caregivers in performing their caring role. Some important positive aspects of the caregiving role include giving pleasure to the care recipient, maintaining the dignity and maximising the potential of the care recipient, experiencing enhanced relationships, meeting perceived responsibilities, sharing mutual love and support, and developing personally (Nolan, Grant & Keady, 1996; Lundh, 1999 cited in Savage and Bailey, 2004).

Marks, Lambert, & Choi (2002) revealed that caregivers can acquire satisfaction from helping their family members. Schofield et al., (1998 cited in Savage and Bailey, 2004) reported that in the Victorian Carers Program research, 84% of caregivers indicated that they receive a great deal of satisfaction from caring. In addition, caregivers have also described some benefits of caring, such as a sense of closeness to the care recipient, and enhanced self-esteem (Ashworth & Baker, 2000 cited in Savage and Bailey, 2004). According to Australian Bureau of Statistics (ABS) (1998 cited in Savage and Bailey, 2004), 33% of caregivers indicated that their relationship with the care recipient was closer as a result of their caregiving role. It is possible that these positive aspects of caring would impact positively on the caregiver's overall mental health.

Research has established that caregiving can lead to positive psychological effects and health benefits for some caregivers (Foley, Tung, & Mutran, 2002; Miller, & Lawton, 1997 cited in Roth et al., 2009).

2.2.6.2 Caregiver overall physical health

Research has highlighted the impact that providing care to a family member or friend can have on the caregiver's overall physical health. A meta-analysis examining the difference in physical health between caregivers of frail older adults and non-caregivers reported that caregivers reported lower levels of physical health than their non-caregiver counterparts (Pinquart & Sorenson, 2003a). In a meta-analysis conducted by Vitaliano, Zhang, & Scanlan (2003 cited in walker, 2011) it was reported that caregivers had higher levels of stress hormones and lower levels of antibody responses than non-caregivers. In addition, caregivers exhibited a slightly greater risk for health problems than did non-caregivers. Another meta-analysis conducted by Schulz, Visintainer, & Williamson (1990), revealed that caregivers are more vulnerable to physical illness.

According to Center on Aging Society (2005), about one in ten (11%) caregivers reported that caregiving has caused their physical health to get worse. According to Ho, Collins, Davis & Doty (2005), in 2005, three-fifths of caregivers reported fair or poor health status, one or more chronic conditions, or a disability, compared with one-third of non-caregivers. In addition, caregivers also reported chronic conditions (including heart attack/heart disease, cancer, diabetes and arthritis) at nearly twice the rate of non-caregivers (45% vs. 24%). Studies demonstrate that caregivers suffer from increased rates of physical ailments (including acid reflux, headaches, and pain/aching) (National Alliance for Caregiving & Evercare, 2006), increased tendency to develop serious illness (Shaw et al., 1997) and have high levels of obesity and bodily pain (Barrow & Harrison, 2005). Studies has well documented that caregivers have diminished immune response, which leads to frequent infection and increased risk of cancers (Kiecolt-Glaser et al., 1991; Kiecolt-Glaser et al., 1996; Glaser and Kiecolt-Glaser, 1997). In addition, caregivers also suffer from slower wound healing (Kiecolt-Glaser et al., 1996). According to Carretero, Garces, Rodenas, & Sanjose (2009), the effects of providing care on caregivers physical health include negative evaluations of their own health, psychosomatic and immunological disorders, cardiovascular problems, and dependency in order to perform the activities of daily life.

Literature report that caregivers are at greater risk for poor physical health and also suggests that caregiving is an independent risk factor for mortality. In an analysis of 392 caregivers and 427 non-caregivers, it was found that caregivers who reported feeling burdened from providing care were 63% more likely to die within 4 years than caregivers who did not report emotional strain (Schulz & Beach, 1999). This suggests that caregivers who experience more burden and strain are at a greater risk of dying prematurely than caregivers who do not experience as much burden and persons who provide no care to their spouse. While the implications of this study are important, the population that was examined was elderly individuals with a disability. Contrary, Ahn et al. (2012) study on self-reported physical and mental health of older adults revealed that caregivers were more likely to be physically healthy compared to non-caregivers.

2.2.7 Factors influencing caregivers level of burden

Various variables have been studied in relation to caregiver burden. For example, employment of the caregiver has been viewed from different perspectives. On one hand, it has been seen as a stressor in which caregivers are caught between the demands for their time and energy on the job versus demands at home. However, it also appears that many caregivers have felt that their jobs were enjoyable resources that helped them to keep their sanity (Faria, 1998b cited in Faison, Faria and Frank, 1999).

Another factor that has consistently been found to be of importance to caregiver burden is quality of the relationship between caregiver and care recipient. It is believed that where there is positive quality of the relationship between caregiver and care recipient, there is decreased strain because caregiving is found to be meaningful (Robinson, 1990 cited in Faison, Faria and Frank, 1999).

In addition, the length of time in the caregiving role has shown some relevant differences in caregiver burden (Faison, Faria and Frank, 1999). A study of caregivers of dementia patients found that the caregivers' ability to tolerate problem behaviours increased with time as the disease progressed (Zarit et al., 1986 cited in Faison, Faria and Frank, 1999). This may be due to caregivers learning to manage the problems more effectively. On the contrary, Gaynor (1990 cited in Faison, Faria and Frank, 1999) studied 155 caregivers and found feelings of perceived burden to be higher among women who had been involved in caregiving for an extended time.

According to Faison, Faria and Frank (1999), health status of the caregiver has also been investigated in relation to caregiver burden. Several studies concluded that health impairments of caregivers are associated with increased burden including problems such as anxiety, sleeplessness, and general health problems (Bull, 1990; Faria, 1998a cited in Faison, Faria and Frank, 1999).

Research has established that a series of socio-demographic characteristics of the caregiver and the caregiver care recipient relation are associated with caregiver burden. For example, Navaie-Waliser et al. (2002) reported that the socio-demographic variables of caregivers associated with very high levels of burden include a young age, being a female, a low income level of the caregiver and the caregiver having a job.

Research has also documented that dependency for the activities of daily life, the progressive physical deterioration and the amount of activities for which the person is dependent appear strongly associated with caregiver burden (Logdson et al., 1998; Gaugler et al., 2000 cited in Carretero, Garces, Rodenas, & Sanjose, 2009). According to Neri et al. (2012), gender, age, income and low perceived social support were associated with adverse health and social outcomes.

2.2.7.1 Gender

According to Lin, Fee and Wu (2012), caregiving experience is likely to vary by caregivers' gender because men and women are socialized differently. Since women are socialized to nurture, they provide more help with hands-on tasks and longer hours of care than men (Neal et al., 1997; Pinquart & Sorenson, 2006 cited in Lin, Fee and Wu, 2012). Men are likely to use different strategies when dealing with problems that arise during caregiving than women, for example, by focusing on tasks and blocking emotions (Calasanti & King, 2007 cited in Lin, Fee and Wu, 2012).

Research has well established that caregiving is more stressful for women (both wives and daughters) than for men (both husbands and sons) (Miller & Cafasso, 1992; Skaff & Pearlin, 1992; Thompson, et al., 1993 cited in Walker, Pratt, & Eddy, 1995).

According to McGrath et al., (1992), women have higher rates of depression than men in the care giving role. These gender differences in levels of depressive symptoms and depression may be due to variations in stress exposure, coping responses used, the role of social support (Billings and Moos, 1984) and biological factors (McGrath et al., 1992).

In a systematic review of gender differences and caregiving, Yee and Schulz (2000) showed that women caregivers reported more psychiatric symptoms than men caregivers, including greater depression (Beach, Schulz, Yee, & Jackson, 2000), burden (Lutzsky & Knight,1994), and anxiety.

2.2.7.2 Age

Findings on the relevance of age are inconsistent. Generally, it is expected that older caregivers would experience worse physical health because of the association between age and decreases in physical health irrespective of the caregiving role (Rowe & Kahn, 1998 cited in Pinquart, & Sörensen, 2007) and also because caregiving-related stressors may have stronger negative effects on the physical health of older caregivers with pre-existing health problems (Pinquart, & Sörensen, 2007). Generally, older caregivers often experience worse health problems of their own but may also have fewer competing demands in their lives. A study by Henkle (1994 cited in Chappell and Dujela, 2008) found that older age was related to burden and stress. However, a study by Spaid and Barusch (1991 cited in Chappell and Dujela, 2008) report that, among spouse caregivers to seniors, the older the caregiver, the less the sense of strain because older caregivers have, in part, accepted the aging process. Research has established that caregiving is more developmentally on time for older adults than for younger adults (Neugarten, 1969 cited in Pinquart, & Sörensen, 2007) and also some sources of stress are less prevalent in older caregivers than younger caregivers, as a result age differences in health (physical health) might be smaller than expected (Pinquart, & Sörensen, 2007). Research has well documented that physical health status declines with increased age (Brunet et al., 1996; Singer, Hopman, & MacKenzie, 1999).

2.2.7.3 Social support

Research has established that the amount and quality of social support available to caregivers is an important factor in moderating the impact of caregiving (Savage & Bailey, 2004). Chang, Chiou and Chen (2010), argue that social support may have a buffering effect on caregiver burden. Song et al., (1997 cited in Chang, Chiou and Chen, 2010) found that social support was negatively associated with caregiver's burden; that is, caregivers who obtained more social support reported less burden. Strong relationships between the availability of support systems and caregiver distress have been reported (Li et al., 1997; Sander et al., 1997; Edwards and Scheetz, 2002 cited in Chang, Chiou and Chen, 2010).

Studies invariably indicate that more social support corresponds to less depressive symptomatology (Baumgarten et al., 1992; Schulz & Williamson, 1991) and lower perceived burden (Gallant & Connell, 1997). According to Clyburn et al., (2000), social support and caregiver burden have been found to mediate depression in caregivers.

Research on social support for family caregivers suggests that caregivers experience a lot of difficulties while caring for their loved ones which include: acceptance of the patient's diagnosis, commitment by others to the patient, informational needs related to the illness and management for helping accessing resources, need for respite care and direct help with care giving activities (Noberck, Chaftez, Skodol-Wilson & Weiss, 1991 cited in Phaladze, 2001).

Research has established that in indigenous population, one’s kinsfolk are often significant source of support in times of difficulty (Kilson 1974; Fayorsey 1995 cited in Maxwell et al., 2000).

2.2.7.4 Religion

Research has well documented that religion is associated with improved mental health (Smith, McCullough, & Poll, 2003; Hebert, Dang, & Schulz, 2007). For example, Hebert, Dang, & Schulz (2007), reported that religious attendance, prayer, and beliefs are associated with less depression in active caregivers. According to Picot, Debann, Namazi, & Wykle, (1997), religion may help alleviate the impact of caregiving burden/ stress. In addition, Nightingale (2003) reported that caregivers’ religious practices and spirituality affected how they felt about providing care and also their religion and spirituality helped them to deal with difficult challenges.

2.2.7.5 Chronic disease

Research has established that chronic disease generally has negative impact on the physical health while mental health status may remain relatively unaffected (Hopman et al., 2009). A study conducted by Hopman et al. (2009), revealed that female gender and comorbid conditions were associated with poorer health-related quality of life (HRQOL) while increased age was associated with poorer physical component summary (PCS) and better mental component summary (MCS).

2.2.8 HIV caregiving experiences and challenges

All over the world, informal caregivers play a major role in providing home care for people living with HIV/AIDS (PLWHA) (LeBlanc, London, & Aneshensel, 1997; Akintola, 2008 cited in Akintola, 2010). Globally, literature on family caregiving for people living with HIV/AIDS (PLWHA) tends to focus on the negative implications of caregiving for the caregiver, usually referred to as the burden of care (Akintola, 2010).

According to UNAIDS (2000), although the burden of care is borne predominantly by women and girls at the family level, men are increasingly willing to take on the physical care of sick partners and family members, and children are the least acknowledged carers within the home. Research has well documented that caregivers often experience negative consequences of HIV stigma, feel highly burdened, and experience mental and physical health problems because of the demands of their jobs (Bogart, et al., 2008; Holzemer, et al., 2007 cited in Singh, Chaudoir, Escobar, and Kalichman, 2011). For example, a study by Orner (2006 cited in Akintola, 2008) in South Africa reported that caregiving had a negative impact on the physical and mental health of family caregivers.

Caregivers may also be at higher risk of infection with HIV/AIDS and tuberculosis (Lindsey et al. 2003, Akintola 2006 cited in Akintola, 2008). In a qualitative analysis of caregivers in Ghana by Uys (2002 cited in Singh, Chaudoir, Escobar, and Kalichman, 2011) found that caregivers often felt the need to hide their care giving jobs from their friends and family members to avoid stigmatizing reactions from them. This secrecy often resulted in feelings of loneliness, isolation, and a lack of support from their social network. Another study in Ghana by Mwinituo & Mill (2006) found that caregivers experience stigma and discrimination, and caregivers reported loss of jobs and employment opportunities as a result of discrimination. They also found that informal caregivers in Ghana kept their care giving secret from family and others and, therefore, received little support from family. Santiesteban, Castro, & Calvo (2012 cited in Lua & Mustapha, 2012), also revealed that caregivers reported loss of jobs, employment opportunities and lack of respect from health workers.

Several studies has well documented that family caregivers of HIV-infected patients constantly suffer from significant stress and are associated with caregiving burden (Abasiubong, Bassey, Ogunsemi, & Udobang, 2011; Lee, Li, Jiraphongsa, & Rotheram-Borus, 2010 cited in Lua & Mustapha, 2012). According to Tarimo, Kohi, Outwater, and Blystad (2009), involvement in comprehensive informal care to loved ones suffering from AIDS may bring about substantial emotional and physical stress in the caregivers’ daily lives.

A review of mental health-related experiences and challenges of informal HIV/AIDS caregivers by Lua & Mustapha (2012) revealed that stress and depression, stigma and discrimination, insufficient support, role overload and extreme poverty are the main challenges experienced in caregiving. Research by Mitchell and Knowlton (2009) revealed that among caregivers, HIV caregiving-related stigma was associated with more depressive symptoms. Pirraglia et al., (2005 cited in Lua & Mustapha 2012) found that the burden of caregiving, medical comorbidities (other than HIV), illicit drug uses, other caring responsibilities (other than HIV patients), spending all day together and the duration of HIV diagnosis are strongly associated with depression.

Despite the focus on the negative implications of caregiving for the caregiver, research has demonstrated that caregiving for people living with HIV/AIDS can be rewarding and positive experience for caregivers (Apondi, et al., 2007; Chimwaza & Watkins, 2004; Powell- Cope & Brown, 1992 cited in Singh, Chaudoir, Escobar, and Kalichman, 2011). A study by Carlisle (2000 cited in Akintola, 2010) among family caregivers found that individuals find meaning in providing AIDS care to family members and friends. Akintola (2010) revealed that volunteer caregivers of people living with HIV/AIDS experience rewards from caregiving, in addition to the negative outcomes they experience.

Research has well documented that a variety of age categories are involved in caregiving for HIV/AIDS patients. According to Robson et al. (2006 cited in Lua & Mustapha 2012), young caregivers are usually responsible for domestic work (e.g. cooking, fetching water and wood) because they live in the same house with the sick parents or siblings. Becker (2007 cited in Lua & Mustapha 2012) argues that due to the impact of caring responsibilities of young caregivers, their school attendance become irregular or they could even completely dropout in the end. However, a study by Lindsey, Hirschfeld, & Tlou (2003 cited in Lua & Mustapha 2012), found that older caregivers reported feeling overwhelmed by the magnitude and multiplicity of tasks they had to perform.

2.2.9 Aging and chronic diseases

Naturally, when an individual is aging, his/her body change in various ways that affect the function of the cell and organ system. Ageing is associated with problems of non-communicable diseases (NCD) like cardiovascular diseases, cancers, type 2 diabetes and other non-fatal conditions. Wissler and Robert (1996) attributed the association between aging and cardiovascular diseases to morphological changes in the heart muscle, elastin, calcium, collagen and the conduction system. In 2005, there were 34 million people age 60 and over in Sub-Sahara Africa, this number is projected to increase by 50% by 2030. The expected 50% increase in the aging population makes it the most rapidly aging region. This increase in the number of older people will occur despite the excess HIV-related deaths that are experienced by many countries in the region (CPOP, 2006). Ghana has 4% of its total population aged 65 and above (World Population data sheet, 2012).

According to World Health Organisation (2004a) estimates, non-communicable diseases accounted for nearly 59% of the 57 million people who died in 2002. In the same year, non-communicable diseases also outstripped both communicable diseases, and injuries, as the leading cause of chronic illness worldwide, accounting for nearly 47% of the 1.49 billion years of healthy life "lost" to illness, as measured in disability-adjusted life year (DALY) (WHO, 2004b). WHO indicated that unhealthy diet and insufficient physical activity are among the major causal factors in coronary heart disease, cerebrovascular strokes, several forms of cancer, type 2 diabetes, hypertension, obesity, osteoporosis, dental caries, including other conditions.

Research has documented that most countries are experiencing epidemiological transition. For example, Agyei–Mensah & de-Graft Aikins (2010) has documented that Ghana is experiencing a fast epidemiological transition which has been identified as the major causes of morbidity and mortality in urban settings. The transition towards chronic diseases is due to several factors including the ageing of the population, the relative success of efforts to control communicable diseases, the globalization of risk factors for chronic diseases, greater participation of women in the workforce, urbanization and the accompanying trend towards more sedentary lifestyles, and the global marketing of tobacco (Magnusson, 2009). Research has established that chronic diseases do not only affect affluent countries, nor do they affect only those who have consciously chosen unhealthy lifestyles (Strong, Mathers, Leeder, & Beaglehole, 2005 and Suhrcke, Nugent, Stuckler, & Rocco, 2006 cited in Magnusson, 2009).

Africa faces a double burden of infectious and chronic diseases and many African health systems are weak to cope with the cumulative burden of infectious and chronic diseases (de-Graft Aikins et al., 2010). Research has established that Africa bears a significant proportion of the global burden of chronic diseases (de-Graft Aikins et al., 2010). According to projections by World Health Organisation (2005 cited in de-Graft Aikins et al., 2010), over the next ten years Africa will experience the largest increase in death rates from cardiovascular disease, cancer, respiratory disease and diabetes.

Ghana has the challenging task of facing the ‘double disease burden,’ which means it must deal simultaneously with acute communicable diseases and chronic illness (Kratzer, 2012). Epidemiological data shows a steady increase in prevalence rates since the 1950s (de-Graft Aikins, 2007). According to Bosu (2010), over the past 60 years, a number of studies have been conducted on cardiovascular diseases in Ghana. For example, a survey conducted by Colbourne, Edington, Hughes, & Ward-Brew (1950) in a village about 97 kilometres from Accra revealed that 5.5% of inhabitants had cardiovascular diseases. Research has established that individuals who live with chronic illnesses are mostly unaware and have poor knowledge and management of the condition(s) (Kagee, Roux, & Dick, 2007).

2.2.9.1 Diabetes caregiving experiences and challenges

Research has well documented that family members, friends, neighbours, or members of a specific support system such as a church or social organization may take up caregiving roles and responsibilities of the elderly with diabetes (Haas, 2006; Silliman, et al., 1996). Research by Hennessy, John & Anderson (1999) using focus groups of American Indians, revealed that caregivers reported their major challenges related to diabetes care management as anxiety about in-home care, coping with psychosocial issues, and decision making and communication with other family members. In addition, a study by Lackey and Gates (2001) on adults who had been caregivers as children reported that providing personal care was the most difficult task of caregiving and household tasks were the most time consuming. They also reported that caregiving affected their family life, school, and time with friends.

Studies has documented that a particular problem for family caregivers is the financial cost of diabetes (Awadalla, 2006). For example, a British study revealed that higher levels of strain were reported by caregivers who lost their earnings and only one-third of the caregivers received benefits from the state (Holmes, Gear, and Bottomley, 2003 cited in Awadalla, 2006). Research has also well established that when diabetes patients begin to experience diabetic complications, caregivers experience a reduction in social activities, increased family tensions and lost time from work, all of which have a negative impact on caregivers’ quality of life (Brod, 1998; Nabuurs-Franssen et al., 2005 cited in Awadalla, 2006).

Diabetes management involves numerous activities every day. Research has established that diabetes management requires performing some activities, such as eating the right foods at regular intervals in the day and also avoiding other activities, such as eating the wrong foods or eating at other times in the day or night (Maslow, 2011). Performance of these activities by caregivers of diabetes patients may contribute to caregiver stress. de-Graft Aikins (2007) study on everyday experiences of diabetes in Ghana revealed that caregivers of diabetes patients experience difficulties facilitating appropriate and sustainable diet management for diabetes patients. Another study in Ghana by Kratzer (2012) revealed that caregivers of diabetes patients reported they felt worried, lack of formal support and viewed caregiving as time consuming which often took their time away from work.

2.2.10 Summary of selected studies on challenges experienced by caregivers

Challenges experienced by caregivers are summarized according to the author, site of study, respondents, conceptual framework/research questions, research method and key findings (See Appendix A). All information extracted from the literature review on challenges experienced by caregivers are tabulated accordingly.

The total number of articles reviewed on challenges experienced by caregivers was twenty nine (24). Twenty six articles out of twenty nine studied both males and female. Only 3 articles studied women. Twenty four articles used quantitative method while the remaining five articles used qualitative method. The ages of caregivers in the review ranges from 12 to 98 years.

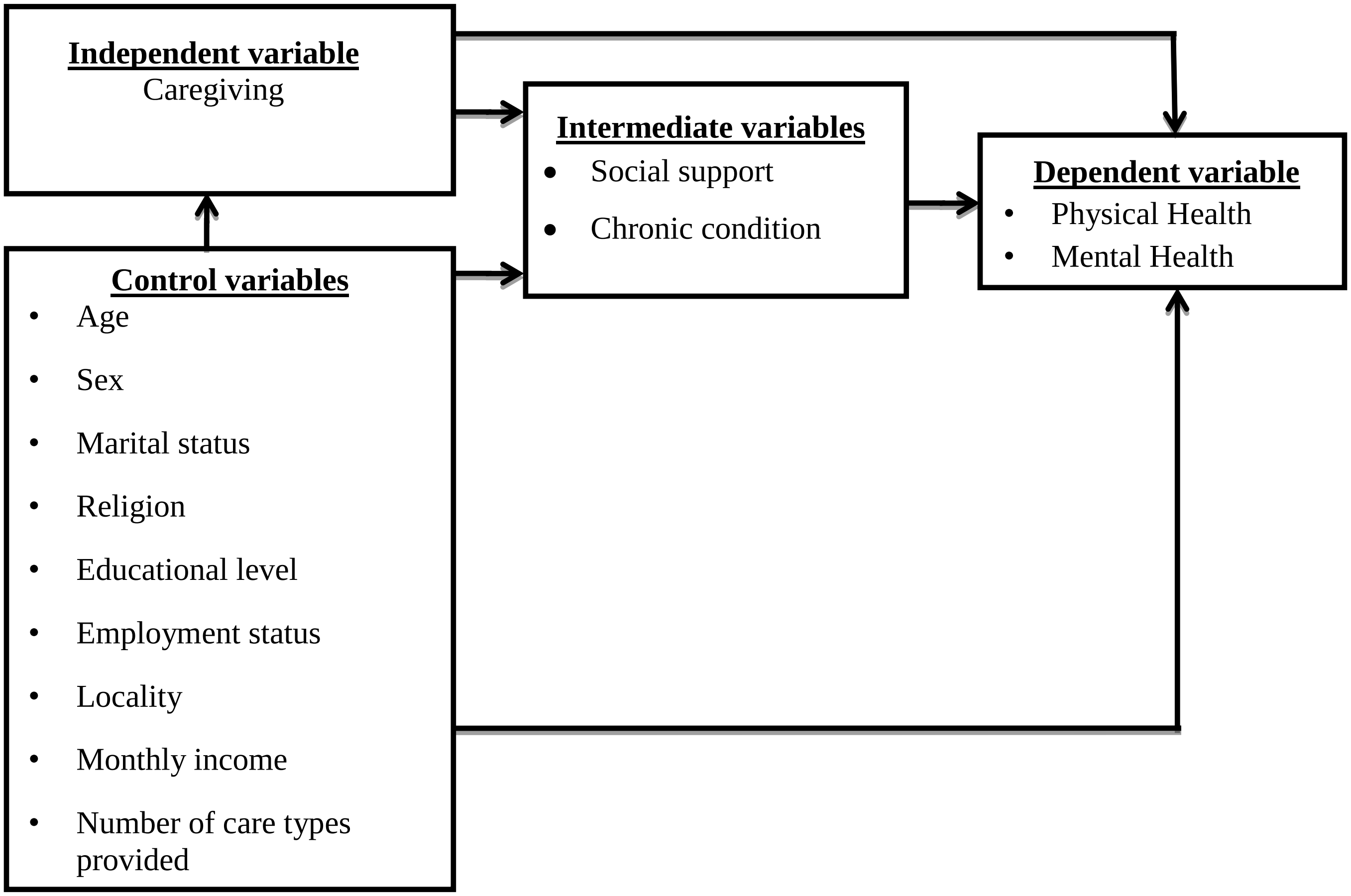
Twenty out of the twenty nine articles were conducted in North America (eighteen in United States of America and two in Canada). Only two were conducted in Asia (One in Japan and one in Korea) and six were conducted in Africa (three in South Africa, two in Tanzania and one in Ghana). In addition, only one article was conducted in South America (Brazil).

Twenty four articles reported negative caregivers outcomes while only five reported positive caregivers outcomes. Seven out of the twenty four articles on negative caregivers outcomes were related to depression and its symptoms. Only two were related to sleep difficulty and mortality respectively.

2.3 Conceptual framework

The present study draws on the several researches used to explain caregivers' burden. Figure 2.1 below gives the pictorial structure that guided the present study; thus showing the relationships among the various variables of interest.

Figure 2.1: Conceptual framework Adapted from ‘‘the changes in caregiver burden following nursing home placement’’ by Yeh, S-H., Johnson, M. A., & Wang, S-T., 2002, *International Journal of Nursing Studies*, 39(6), pp. 591–600.



The conceptual framework for the present study was based on a modification of the work of Yeh, Johnson and Wang, 2002. This framework is driven by the caregiving model proposed by Given et al. (1988) that identified possible sources of burden. The model represents potential caregiver reactions (i.e., burdens) that may influence one’s ability to maintain or modify the resources available to the caregiver in the caregiving environment. Two variables that might affect caregiver burden include the prior relationship between caregiver and care recipient and the characteristics of both the patient and caregiver respectively (Yeh, Johnson and Wang, 2002). The variables suggested as those most likely to affect caregivers' burden are the reciprocal effects of caregiving on the physical and emotional health of the caregiver, and the characteristics of the caregiver (e.g. age, religion and duration of care) (Yeh, Johnson and Wang, 2002).

It would be interesting to find out the physical and mental health outcomes of caregiving in Accra (Ga Mashie and Agbogbloshie) since it has been recognized that in Africa, the family provides most of the care for its sick and elderly population (Apt, 1995). Caregiving may result in decline in physical and mental health. It is expected that caregivers would report poor physical and mental health than non-caregivers because of their caregiving roles and responsibilities.

The intermediate variables in the present study were social support and chronic conditions. Strong relationships between the availability of support systems and caregiver distress have been reported (Pohl et al., 1994; Li et al., 1997; Sander et al., 1997; Edwards and Scheetz, 2002 cited in Chang, Chiou and Chen, 2010). It is expected that caregivers who receive social support would report better physical and mental health than caregivers who receive no social support.

The chronic condition status of a respondent will influence his/her physical and mental health. It is expected that respondents with no chronic condition(s) would report better physical health than respondents with chronic condition(s). A probable explanation is that physical health status declines with disease burden.

Age, sex, marital status, religion, educational level, employment status, locality, monthly income, and number of care types provided, for the purpose of the present study are used as control variables in this framework. Literature revealed that the control variables may influence caregivers' level of burden (Faria, 1998b cited in Faison, Faria and Frank, 1999; Faison, Faria and Frank, 1999; Savage and Bailey, 2004; Orner, 2006 cited in Akintola, 2008; Navaie-Waliser, et al., 2002). It would therefore be interesting to find out the effect of these variables on physical and mental health in the three study areas.

Research by Henkle (1994 cited in Chappell and Dujela, 2008) found that older age was related to caregiver burden and stress. However, Navaie-Waliser et al., (2002) reported that young age was associated with very high levels of burden. These studies imply that age is an influential factor in determining caregiver burden. It is expected that older respondents would report better mental health than younger respondents because younger respondents are more likely to be ill-prepared for their role. It is also expected that younger respondents would report better physical health than older respondents because older persons often experience worse health problems of their own as result of aging and its associated health complications.

Research has established that caregiving is more stressful for women (both wives and daughters) than for men (both husbands and sons) (Miller & Cafasso, 1992; Schulz & Williamson, 1991; Skaff & Pearlin, 1992; Thompson, Futterman, Gallagher-Thompson, Rose & Lovett, 1993; Williamson & Schulz, 1990 cited in Walker, Pratt, & Eddy, 1995). It is therefore, expected that male respondents would report better physical and mental health than female respondents.

Respondent's marital status may influence his/her physical and mental health. It is expected that respondents who are never married would report better mental health than respondents who are currently married because respondents who are currently married would have to perform their marital roles and responsibilities in addition to other roles and responsibilities which could result in stress and negatively influence their mental health.

Research has well documented that religious attendance, prayer, and beliefs are associated with less depression in active caregivers (Hebert, Dang, & Schulz, 2007). It is therefore expected that respondents who belong to a religious group would report better mental health than respondents who do not belong to any religious group. A probable explanation is that respondents who belong to a religious group may receive religious support (social support) from their group members which could have a positive influence on their mental health.

Education is an important indicator of the quality of life of an individual and a key determinant of social, economic and individual development. It is expected that respondents with higher education would report better mental health than caregivers with no formal education. A probable explanation is that respondents with higher education are more likely to engage in activities which could boost their mental health.

Research by Navaie-Waliser et al. (2002) reported that a caregiver having a job was associated with very high levels of burden. It is expected that unemployed respondents would report better mental health than employed respondents. A probable explanation is that employed respondents would have to combine their work roles and responsibilities with other roles and responsibilities which could result in stress and negative influence their mental health.

There is evidence of a relationship between neighbourhood characteristics (e.g., crime, access to amenities, neighbourliness and green space) and self-reported physical and mental health (De Vries et al., 2003; Maas et al., 2006). For example, living in a place a person dislikes can be a constant and long-term source of stress leading to more permanent psychosocial distress (Miller and Townsend, 2005). It is expected that respondents who reside at Ga Mashie (James Town and Ussher Town) would report better mental health than respondents who reside at Agbogbloshie. A probable explanation is that respondents who reside at Agbogbloshie are mostly migrants and may lack social support which could positively influence mental health.

Research by Navaie-Waliser et al. (2002) reported that a low income level of caregiver was associated with very high levels of burden. It is therefore expected that respondents who earn more than 300 Ghana Cedis would report better mental health than respondents who earn less than 100 Ghana Cedis.

Research by Gaugler et al. (2000 cited in Carretero, Garces, Rodenas, & Sanjose, 2009) reported a strong relationship between the amount of activities for which care recipient is dependent and caregiver burden. It is therefore expected that respondents who provide instrumental activities of daily living would report better mental health than respondents who provide basic activities of daily living.

In this study, the dependent variables are physical health and mental health. It is expected that the independent and control variables will influence physical and mental health.

2.4 Hypotheses

The present study proposes the following hypotheses:

1. Caregivers are less likely to report better physical health than non-caregivers

2. Caregivers are less likely to report better mental health than non-caregivers

3. Older respondents are more likely to report better mental health than young respondents

4. Male respondents are more likely to report better mental health than female respondents

5. Respondents who receive social support are more likely to report better mental health than respondents who receive no social support

CHAPTER THREE

METHODOLOGY OF THE STUDY

3.1 Introduction

The present study employed quantitative method and details of the quantitative method are presented in the subsequent sections below.

3.2 Sources of Data

This study utilized the second round of EDULINK Urban Health and Poverty Project. The purpose of the survey is to understand the relationship between population, health and poverty in Accra. EDULINK Urban Health and Poverty Project is a collaborative venture between the Regional Institute for Population Studies (RIPS) of the University of Ghana, University of Southampton, UK, University of Ibadan, Nigeria, University of Cape Coast, Ghana, and the Fourah Bay College, Sierra Leone. The purpose of the project is to set up the first of a series of urban field schools in West Africa that contribute towards the research and training of demographers in sub-region. EDULINK Urban Health and Poverty Project involve three main phases. Phase 1 is the establishment of a model urban field site. Phase 2 involves integration of fieldwork into teaching and learning programme and Phase 3 involve the communication of lessons learned. Under this project, James Town and Ussher Town in Ga Mashie and Agbogbloshie were established as model urban field sites to gather data from the residents for research purposes. The model urban field sites have contributed to knowledge on inequalities in health and human welfare of the people living in urban areas in Africa.

EDULINK Urban Health and Poverty Project have two waves. The first wave (baseline) was collected among residents of Ga-Mashie (James Town and Ussher Town) and Agbogbloshie between June 8th and July 7th 2010. The second round of EDULINK Urban Health and Poverty Project which was used by the present study was collected among residents of Ga-Mashie (James Town and Ussher Town) and Agbogbloshie between November 25th and December 22nd 2011. Data on caregiving was obtained from the survey where household heads were asked whether during the past year, they or someone in their household provided help to a relative or friend because this person has a long-term physical or mental illness or disability, or is getting old and weak.

3.3 Sampling technique

Accra has Sub-Metropolitan areas which are under the supervision of the Accra Metropolitan Assembly (A.M.A). James Town, Ussher Town and Agbogbloshie are under the Ashiedu-Keteke Sub Metropolitan Assembly. The sample was drawn from 29 enumeration areas (EA’s), each with 20 households systematically chosen to make up a total of 580 households. The number of EA’s and households in each locality was proportionated to the population size of the locality. The aim of this sampling procedure is to arrive at a survey with 500 households interviewed. Estimates from the Ghana Statistical Service indicates that the non-response rate in the Greater Accra Region is about 15%, and so an extra 15% of households were added to the 500 household to make it a total of 580. After informed consent was obtained from respondents, household questionnaires were administered to household heads and individual questionnaires were also administered. In each household, females aged 15 to 49 years and males aged 15 to 59 years were interviewed.

3.4 Sample size

In total, a representative sample size of 1,133 household heads was eligible to be interviewed for the household questionnaire. To gather data on caregiving, household heads were asked whether during the past year, they or someone in their household provided help to a relative or friend because this person has a long-term physical or mental illness or disability, or is getting old and weak. In total, 1,128 household heads responded to the question on caregiving. However, after filtering out the data with respect to the dependent variables namely physical health and mental health respectively, a sample size of 968 was derived for the present study.

3.5 Data analysis

Frequencies, percentages and charts were used to describe the characteristics of the sampled population. Chi-square test and Fisher's exact test were used to check for statistically significant relationships among sub-groups in the sampled population and physical and mental health at the bivariate stage of analysis. A binary logistic regression analysis was performed at the multivariate stage of analysis. All statistical analyses were performed using the statistical package for social sciences (SPSS) version 20.

3.6 Definition of terms

Caregiving in this study is defined as "the act of providing unpaid assistance or support to sick and elderly family members or friends who have physical, psychological or developmental needs". Therefore, respondents were asked during the past year, did they or someone in their household provided help to a relative or friend, because the person has a long-term physical or mental illness or disability, or is getting old and week.

3.7 Measures/variable definitions

3.7.1 Dependent variables/outcomes

Physical health was measured by how respondents see their health. For physical health, respondents were categorized as having excellent, very good, good, quit good and poor health.

To measure mental health status of respondents, they were asked questions about how they felt and how things have been during the past 4 weeks based on the K6 scale for measuring psychological distress. The K6 scale (Kessler Psychological Distress Scale) is a simple measure of psychological distress which consists of six questions about depressive and anxiety symptoms that a person has experienced in the most recent 4 week period (Kessler et al., 2003). Each question is rated on a 5 point Likert-type scale ranging from "none of the time" to "All of the time". Respondents were asked how much of the time in the past 4 weeks on the following questions;

a. Had they felt full of life and bounce?

b. Had they felt very nervous?

c. Had they felt so unhappy and not themselves that nothing could cheer them up?

d. Had they felt calm and peaceful?

e. Had they felt a lot of energy?

f. Had they felt downhearted and letdown?

g. Had they felt worn out?

h. Had they felt happy?

i. Had they felt worthless or hopeless?

Responses from respondents were scored based on the RAND 36-item health survey scoring with each of these responses given a score. The RAND 36-Item Health Survey taps eight health concepts namely physical functioning, bodily pain, role limitations due to physical health problems, role limitations due to personal or emotional problems, general mental health, social functioning, energy/fatigue, and general health perceptions. It also includes a single item that provides an indication of perceived change in health (Hays, Sherbourne, & Mazel, 1993). All the 9 questions were recoded to move in the same direction. Table 3.1 below shows how responses were scored based on the RAND 36-item health survey.

Table 3.1: Scoring Responses

Questions	Response	Original Response Value	Recoded Value
a, b, c, d, e, f, g ,h, i	None of the time	1	0
	A little of the time	2	25
	Some of the time	3	50
	Most of the time	4	75
	All of the time	5	100

The score for each of the 9 questions ranges from 0 to 100, with 100 representing the maximum score. The scores from all the 9 questions are then averaged together, to get to a total raw score. Table 3.2 below shows how total raw score for respondents were categorized.

Table 3.2: Total Score Categorization

Total Score	Categorization
0 - 25	Extremely poor
26 – 50	Poor
51 – 75	Moderate
76 - 100	Close to Perfect

3.7.2 Independent, control and intermediate variables

For comparison purposes, caregiving is measured by determining whether during the past year, a household head or someone in their household provided help to a relative or friend because this person has a long-term physical or mental illness or disability, or is getting old and weak. Those who responded "Yes" are classified as caregivers and those who responded "No" are classified as non-caregivers.

Social support was measured by whether in the last 12 months anyone in their household received any financial or in-kind support from their family, relative and friends who do not live with them. Social support has two categories: "Yes" and "No". Those who responded "Yes" received social support and those who responded "No" received no social support.

Chronic condition status of respondents was measured by whether they have ever been diagnosed by a medical professional that they have a chronic condition. Those who responded "Yes" have a chronic condition and those who responded "No" have no chronic condition.

Respondents' ages are classified into four age groups (15-24, 25-34, 35-44 and 45+).

Regarding sex, respondents are categorized as male and female.

For marital status, respondents are categorized as currently married, living together, never married, widowed, divorced and separated.

Religion was also categorized as No religion, Christians (which included Catholic, Protestants, Pentecostal/charismatic and other Christian), Islam, Traditionalist/Spiritualist and Other (which included Eastern religions).

For educational status, respondents are categorized as No education, Primary, Middle/JHS, Secondary/SHS and Higher education.

Also, respondent's employment status was categorized into employed and unemployed.

Regarding monthly income, respondents monthly income are categorized into less than 100, 101-200, 201-300 and more than 300.

With regards to number of care types provided by caregivers, five categories were identified: personal care (e.g. going to the toilet, washing, getting dressed, and eating), medical care (e.g. changing bandages and giving medicines), household activities (e.g. meal preparation, shopping, cleaning, laundry), watch over them (since their behaviour can be upsetting or dangerous to themselves or others) and help them get around (outside the home).

3.8 Limitation of study

This study has some limitations. A major limitation to the present study is that respondents were asked during the past year, did they or someone in their household provide help to a relative or friend, because this person has a long-term physical or mental illness or disability, or is getting old and weak, however, their mental health status were captured during the past 4 weeks before the survey. Therefore, I am making the assumption that their mental health status in the past 4 weeks was their status at the time of their caregiving experience.

Also, respondents were asked how they see their health and I am also making the assumption that their physical health status was their status at the time of their caregiving experience.

No data was collected on the duration of care provided which could have an impact on physical and mental health.

Also, no data are available of whether any of the caregivers are also care recipients.

In addition, no controls were included on the characteristics of care recipients and lack of data on the average number of hours per day/week that a respondent provided care.

In addition, this study was cross-sectional in nature, and consequently, did not give a better understanding of the impact of caregiving on physical and mental health.

Furthermore, the present study focused on Ga Mashie and Agbogbloshie, and as a result, findings cannot be generalized for the total population in Accra and Ghana at large.

Also, because data obtained in this study were based on self-report, not all responses on caregiving, physical health and mental health may have been accurate.

Lastly, it would have been interesting to analysis the types of care provided by caregivers in the bivariate analysis instead of multiple forms of care but the data did not allowed the researcher to analysis in that direction.

CHAPTER FOUR

THE STUDY AREA AND CHARACTERISTICS OF THE STUDY POPULATION

4.1 Introduction

This chapter looks at the profile of the study area (Ga Mashie and Agbogbloshie) and describes the background characteristics of the study population. The socio-demographic characteristics of the study population to a large extent determine the levels of caregiving, social support and physical and mental health. The difference in these characteristics, eventually explains the differentials in caregiving, social support and physical and mental health which are also explored in this section. Nine hundred and sixty-eight (968) adults in the ages 15–59 were considered as the sample from the population in Ga Mashie and Agbogbloshie. In this present study, the characteristics considered are age, sex, marital status, religion, educational level, employment status, locality, monthly income, chronic condition status, type of care provided, social support, physical health and mental health.

4.2 Study Area Profile

The study area consist of three localities namely James Town, Ussher Town Agbogbloshie. The localities were selected because of their unique features as urban (poor) communities; characterised by high population density and heterogeneity due to influx of migrants from other parts of the country (Agbogbloshie). In addition, the location of the areas also provides an appropriate setting for this study because of the complex interaction of social, economic and cultural dynamics at play.

James Town, Ussher Town and Agbogbloshie are located in the capital city of Ghana, Accra and are under the jurisdiction of the Ashiedu Keteke Sub-Metropolitan Assembly which is under the supervision of the Accra Metropolitan Assembly (A.M.A). The districts of James Town and Ussher Town constitute **Old Accra** or "**Ga-Mashie**" (Owusu and Afutu-kotey, 2010). Located directly east of the Korle Lagoon, James Town and Ussher Town are the oldest districts in the city of Accra, Ghana and communities were developed to some extent by the end of the 19th century. During the rapid growth of the city during the 20th century, Ga-Mashie (James Town and Ussher Town) became an area of a dense mixture of commercial and residential use (Razzu, 2005). Today, both James Town and Ussher Town remain fishing communities inhabited primarily by the indigenous Ga. Although in a state of decay following years of neglect by subsequent governments, the districts are popular tourist destinations for those seeking to see the remnants of Accra's colonial past. There is a popular lighthouse in James Town which was built by the British in 1871. However, it was replaced in the 1930s by the current Accra Light, which is 93 ft (28 m) tall with a visibility of 16 nautical miles (30 km).

Agbogbloshie covers approximately four acres and is situated on the banks of the Korle Lagoon, northwest of Accra's Central Business District (Safo, 2011). Agbogbloshie is known as a destination for legal and illegal exportation and environmental dumping of electronic waste (e-waste) from industrialized nations (Oteng-Ababio, 2012). According to oral tradition, Agbogbloshie used to be the resting place of Ga Chiefs because of the coolness of the area; with time, people began to settle in that part of Accra (Safo, 2011). During the 1980s, it was a place of shelter for refugees from the Kokomba and the Nanumba war in Northern Ghana. The community is now occupied by both Ga natives and a large number of in-migrants. A large proportion of the population in Agbogbloshie are economic migrants from northern and rural parts of Ghana. Living standards in the north and rural areas are growing worse, causing people to move to urban settings, such as Agbogbloshie (Oteng-Ababio 2012). Most inhabitants of Agbogbloshie are engaged in trading activities ranging from food to non-food items with some also working as artisans. Dwellings are wooden shacks that lack water and sanitation. Agbogbloshie has one of the big markets in Accra (Agbogbloshie market) which shares boundaries with the Kokomba yam market and the housing units of the Ghana Railway Company. Most of the food from the hinterland is transited in Agbogbloshie where it is distributed to other satellite markets in Accra. Agbogbloshie has currently earned the reputation as the hub for the most rapid installers of used components and has an extensive inventory of accumulated parts that others travel from far and near to source. Even the non-recyclable components meant for disposal such as wires are burned to harvest copper, which also has ready markets both internally and internationally (Oteng-Ababio, 2012).

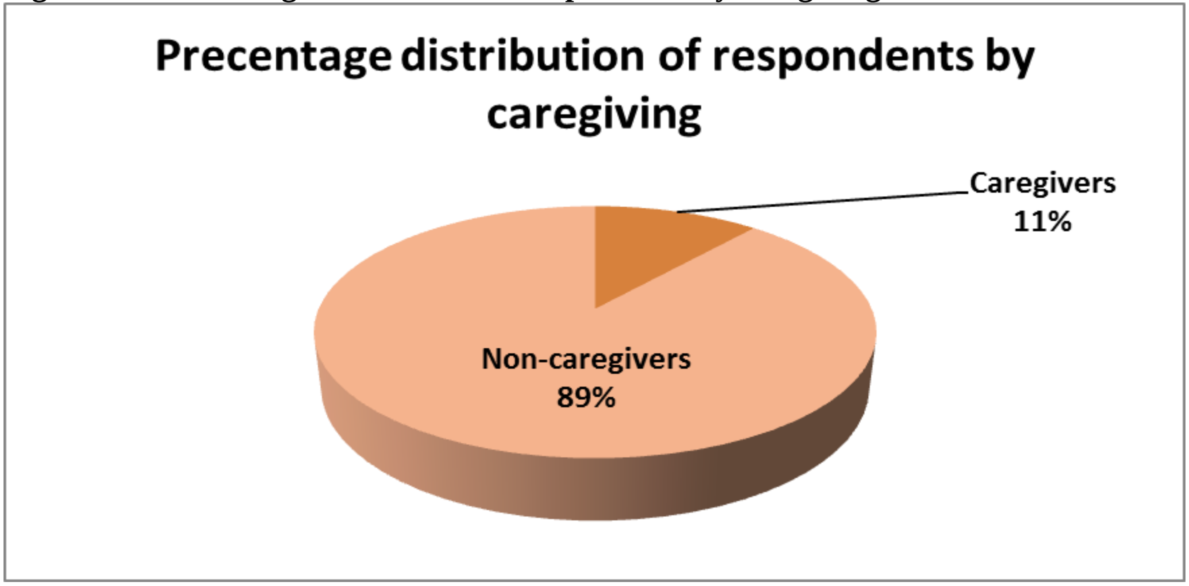
Estimates based on the 2010 Ghana Population and Housing Census put the population of Ussher Town at 27,624, Jamestown 16,221 and Agbogbloshie 8,305 (GSS, 2013). In all three communities, houses are built close to each other allowing little or no ventilation and hardly any space left for recreational activities. Some people sleep outside the rooms at night due to congestion in the rooms and sometimes due to the warm weather. With regard to health care access, inhabitants of all the three communities are served mainly by the Ussher Polyclinic which is situated in Ussher Town. Even though Agbogbloshie is farther away from the Ussher Polyclinic (compared to the other two communities), people from the community mainly depend on the Ussher Polyclinic for their health care needs.

4.3 Socio-economic and demographic characteristics of the study population

4.3.1 Caregiving distribution of respondents

Research has well established that caregiving has negative impact on caregivers (Savage and Bailey, 2004; Given et al., 2004; Vitaliano, Zhang, & Scanlan, 2003 cited in walker, 2011). For comparison purposes, respondents were classified as caregivers and non-caregivers. The percentage distribution of respondents is presented in Figure 4.1.

Figure 4.1: Percentage distribution of respondents by caregiving



Source: EDULINK Data, 2011.

Figure 4.1 shows that out of 968 respondents involved in this study, majority of respondents are non-caregivers compared to a little over one-tenth of respondents who are caregivers. This suggests that about 11 percent of respondents are caregivers while about 89 percent are non-caregivers. It is expected that caregivers would report poor mental health than non-caregivers because of their caregiving roles and responsibilities.

4.3.2 Age distribution of respondents

Age is one of the most important items on which information is collected in all censuses and surveys. This is because it is a basic demographic characteristic of individuals and is highly correlated with most of the population phenomena such as fertility, mortality, and migration. Age is an important demographic variable that influences caregivers’ challenges. Henkle (1994 cited in Chappell and Dujela, 2008) found older age was related to burden and stress. Respondents were classified into four different age groups (10 years interval). The age distribution of the study population is presented in Table 4.1 below.

Table 4.1: Age distribution of respondents

Age Group	Frequency	Percentage
15 - 24	324	33.5
25 - 34	308	31.8
35 - 44	205	21.2
45+	131	13.5
Total	**968**	**100**

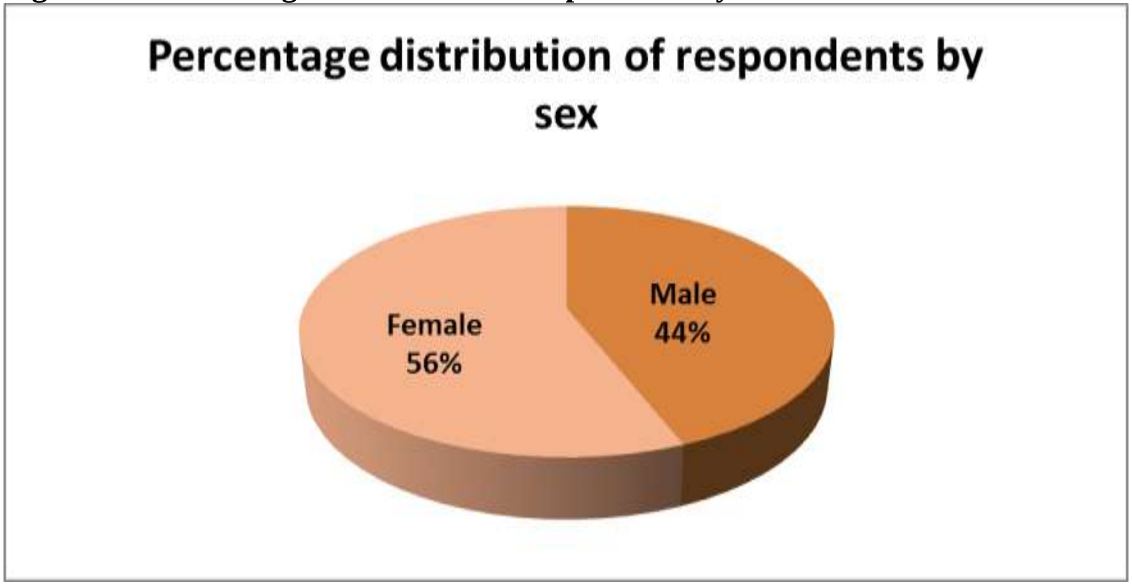
Source: EDULINK Data, 2011.

Table 4.1 shows that, the sample is predominantly made up of young adults. Out of 968 respondents who were involved in this study, 33.5 percent belonged to the age group 15 to 24. A little over one-fifth (21.2 percent) of respondents belonged to the age group 35 to 44 while 13.5 percent of respondents belonged to the age group 45+ respectively. It is expected that respondents aged 45+ would report poor physical health than respondents aged 15 to 24 because older persons often experience worse health problems of their own as result of aging and its associated health complications.

4.3.3 Sex distribution of respondents

Several studies have shown that caregiving experience is likely to vary by caregivers' gender (McGrath et al., 1992; Beach, Schulz, Yee, & Jackson, 2000; Yee and Schulz, 2000; Lin, Fee and Wu, 2012). Sex structure is an important demographic variable because it represents the number of people in a given sex in a society, as well as the assigning of social roles and responsibilities. Figure 4.2 shows the percentage distribution of respondents by sex.

Figure 4.2: Percentage distribution of respondents by sex



Source: EDULINK Data, 2011.

Figure 4.2 shows that out of 968 respondents involved in this study, 544 are females compared to 424 males. This suggests that about 56 percent of respondents are females while about 44 percent are males. It is expected that female respondents would report poor mental health than male respondents.

4.3.4 Marital status of respondents

The marital status of an individual influences his/her behaviour in the society based on societal norms or social responsibilities pertaining to marriage. Table 4.2 shows the distribution of respondents by their marital status.

Table 4.2: Marital status distribution of respondents

Marital Status	Frequency	Percentage
Never married	385	39.8
Living together	202	20.9
Currently married	227	23.5
Widowed	16	1.7
Divorced	58	6.0
Separated	80	8.3
Total	**968**	**100**

Source: EDULINK Data, 2011.

Table 4.2 shows that a little over one-fifth (20.9 percent) of the respondents are living together. About 39.8 percent of respondents are never married; about 23.5 percent of respondents are currently married, while about 8.3 percent of respondents are separated. In addition, about 1.7 percent of respondents are widowed while about 6.0 percent of respondents are divorced. It is expected that married respondents would report poor mental health than respondents who are never married because married respondents would have to perform their marital roles and responsibilities in addition to other roles and responsibilities.

4.3.5 Religious affiliation of respondents

Religion has been a powerful agency in society and performs many important social functions. Religion has the power to influence an individual’s behaviour, beliefs and attitudes. Research has well documented that religious attendance, prayer, and beliefs are associated with less depression in active caregivers (Hebert, Dang, & Schulz, 2007). For the purpose of this study Catholics, Protestants, Pentecostal/Charismatic and Other Christian have been classified as Christians. Table 4.3 shows the distribution of respondents by their religious affiliation.

Table 4.3: Distribution of religious affiliation of respondents

Religious Affiliation	**Frequency**	**Percentage**
No Religion	71	7.3
Christian	772	79.8
Islam	103	10.6
Traditionalist/Spiritualist	15	1.5
Other religion	7	0.7
Total	**968**	**100**

Source: EDULINK Data, 2011.

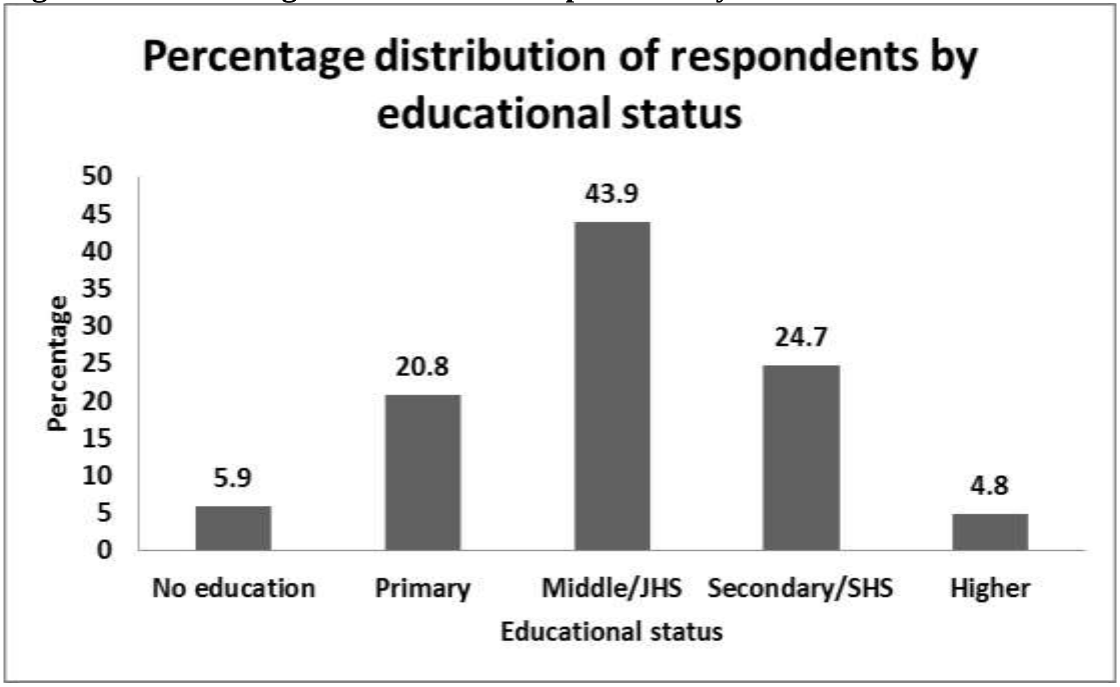
Table 4.3 shows that about 79.8 percent of respondents are Christians. This reflects the situation at the national level because Ghana is largely regarded as a “Christian nation”. Muslims make up approximately 11 percent of the total number of respondents (103 out of 968 people). About 0.7 percent of respondents are affiliated to Other Religion while about 1.5 percent of respondents are affiliated to the “Traditional/Spiritualist” category. In addition, about 7.3 percent are affiliated to the “No Religion” category. It is expected that respondents who belong to a religious group would report better mental health than respondents who does not belong to any religious group.

4.3.6 Educational status of respondents

Education is an important demographic variable because it is widely acknowledged as providing people with the knowledge and skills that can lead to better quality of life and make people more receptive to new ideas. The level of education of a person has been found to be a major determinant of the type of employment one does and also to be positively correlated with income

(Schultz, 1984). Figure 4.3 shows the percentage distribution of respondents by educational status.

Figure 4.3: Percentage distribution of respondents by educational status



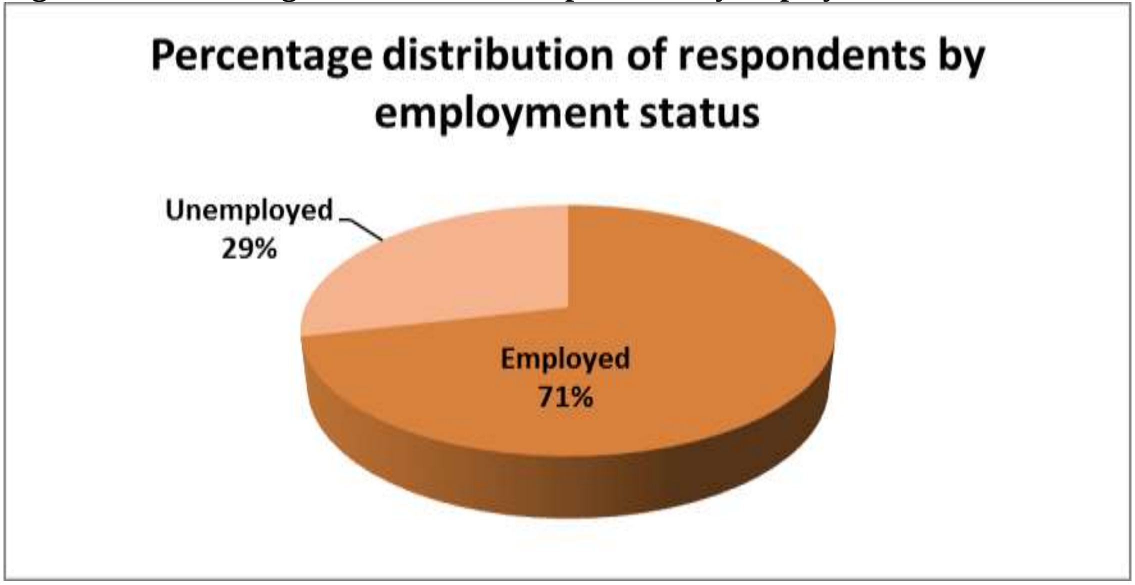
Source: EDULINK Data, 2011.

Figure 4.3 shows that about 43.9 percent of respondents (425 out of 968 people) have completed Middle school or Junior High School (JHS). This information does not depict a good picture of the level of education in the three localities because the middle school or JHS level is part of the basic education school system in Ghana. The basic education level is generally regarded as a level that does not expand ones' knowledge base. Furthermore, about 20.8 percent of respondents (201 out of 968 people) have completed primary school education, which is also part of the basic education level in Ghana. About 24.7 percent of respondents have completed Secondary school or Senior High School (SHS) while about 4.8 percent of respondents have completed Higher education (polytechnic, university etc.). In addition, about 5.9 percent of respondents have no formal education. This suggests that, most of the respondents are educated and their educational background may influence some of their life choices and decision making. It is expected that respondents with no formal education would report poor mental health than respondents with higher education.

4.3.7 Employments status of respondents

Employment status is one of the most important items on which information is collected in all censuses and surveys. This is because it is a socio-economic characteristic of individuals. The employment status of an individual has an influence on the type of job being done. Research by Navaie-Waliser et al. (2002) reported that a caregiver having a job was associated with very high levels of burden. Figure 4.4 shows the percentage distribution of respondents by employment status.

Figure 4.4: Percentage distribution of respondents by employments status



Source: EDULINK Data, 2011.

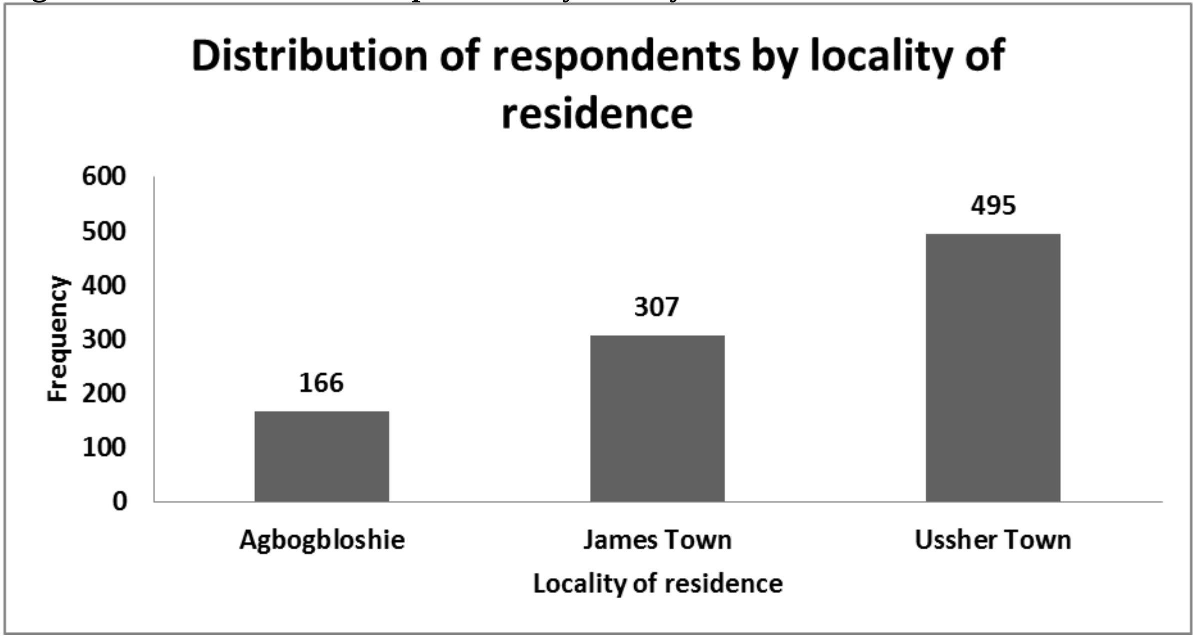
Figure 4.4 shows that out of 968 respondents involve in this study, 690 are employed compared to 278 who are unemployed. This suggests that about 71 percent of respondents are employed while about 29 percent are unemployed. Among respondents who are employed, a little over half (53.2 percent) are engaged in sales and services while about one-third (32.8 percent) are engaged in skilled and unskilled manual work (See Table 4.4 in Appendix B).

In addition, about 2 percent of respondents, representing 14 out of 690 respondents are engaged in agriculture work while about one-tenth of respondents (10 percent) are engaged in professional/technical/managerial/clerical work. It is expected that unemployed respondents would report better mental health than employed respondents.

4.3.8 Locality of residence of respondents

Locality of residence is one of the most important items on which information is collected in all censuses and surveys. Respondents were classified into three localities namely Agbogbloshie, James Town and Ussher Town. Figure 4.5 shows the distribution of respondents by locality of residence.

Figure 4.5: Distribution of respondents by locality of residence



Source: EDULINK Data, 2011.

Figure 4.5 shows that 495 respondents, representing a little above half (51.1 percent) reside in Ussher Town while 307 respondents, representing about 31.7 percent reside in James Town. In addition, 166 respondents, representing about 17.1 percent reside in Agbogbloshie. Since both James Town and Ussher Town are fishing communities inhabited primarily by the indigenous Ga and Agbogbloshie consists of economic migrants from northern and rural parts of Ghana. It is expected that respondents who reside in Agbogbloshie would report poor mental health than respondents who reside at James Town.

4.3.9 Monthly income of respondents

Income status of an individual can affect his/her quality of life. Research by Navaie-Waliser et al. (2002) reported that a low income level of caregiver was associated with very high levels of burden. For the purpose of this study, income was classified into less than 100 (equivalent to less than \$164), 101–200 (equivalent to \$165 - \$328), 201-300 (equivalent to \$329 - \$492) and more than 300 (equivalent to \$493 and above). The fieldwork ended in 23rd December 2011and the dollar exchange to the Ghana cedi was 1.64 Ghana cedis. Table 4.5 shows the distribution of respondents by monthly income.

Table 4.5: Distribution of respondents by monthly income

Monthly income	Frequency	Percentage
Less than 100 (less than \$164)	267	37.1
101 – 200 (\$165 - \$328)	218	30.3
201 – 300 (\$329 - \$492)	89	12.4
More than 300 (\$493 and above)	145	20.2
Total	**719**	**100**

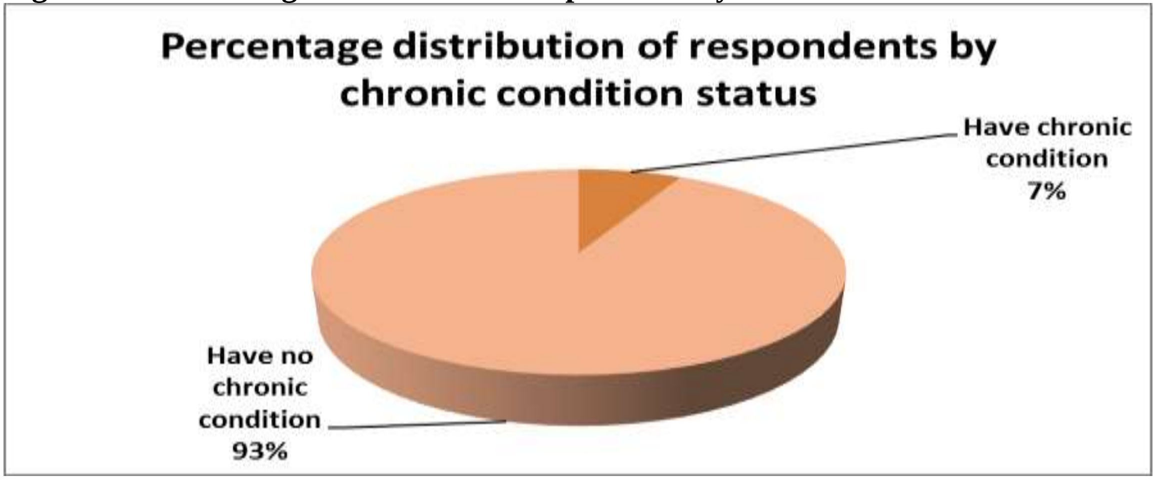
Source: EDULINK Data, 2011.

Table 4.5 shows that 267 respondents, representing about 37.1 percent earn less than 100 Ghana cedis monthly. About 30.3 percent of respondents, representing 218 out of 716 respondents earn between 101 and 200 Ghana cedis monthly while about 12.4 percent of respondents, representing 89 out of 719 respondents earn between 201 and 300 Ghana cedis monthly. In addition, 145 respondents, representing about 20.2 percent earn more than 300 Ghana cedis. Majority of respondents (67.4 percent) earn less than 200 Ghana cedis and this phenomenon is not surprising since a little over half (53.7 percent) are engaged in sales and services while about one-third (30.9 percent) of respondents are engaged in skilled and unskilled manual work (See Table 4.6 in Appendix B). It is expected that respondents who earn less than 100 Ghana cedis would report poor mental health than respondents who earn more than 300 Ghana cedis.

4.3.10 Chronic condition status of respondents

The chronic condition status of caregivers will influence their caregiving experiences. A study by Ho, Collins, Davis & Doty (2005) reported that three-fifths of caregivers reported one or more chronic conditions compared with one-third of non-caregivers. For the purpose of this study, chronic condition means a respondent being diagnosed with heart disease, stroke, diabetes, chronic lung disease, hypertension, cancer or a malignant tumor, asthma, arthritis, kidney disease or liver disease. Figure 4.6 shows the percentage distribution of respondents by chronic condition status.

Figure 4.6: Percentage distribution of respondents by chronic condition status



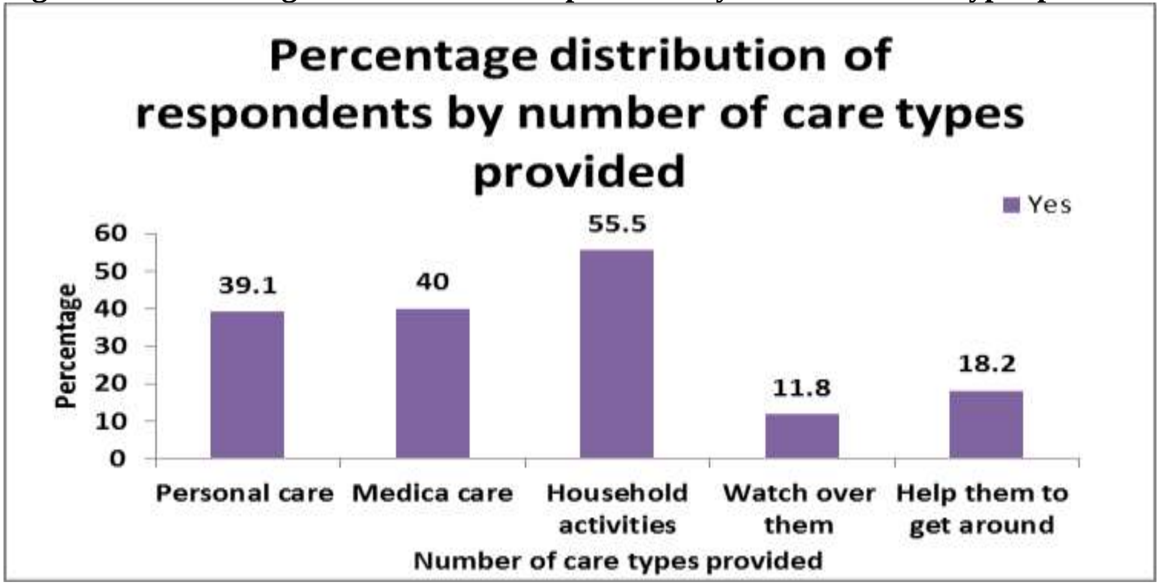
Source: EDULINK Data, 2011.

Figure 4.6 shows that out of 968 respondents involved in this study, 895 have no chronic condition(s) compared to 73 who have chronic condition(s). This suggests that about 93 percent of respondents have not been diagnosed by a medical professional that they have any chronic condition while about 7 percent of respondents have been diagnosed by a medical professional that they have a chronic condition. Although majority of respondents have not been diagnosed by a medical professional that they have any chronic condition, it does not imply that they are not living with a chronic condition. Among respondents living with a chronic condition, about half (50.7 percent) have been diagnosed with hypertension while a little over one-third (35.6 percent) have been diagnosed with asthma (See Table 4.7 in Appendix B). It is expected that respondents with a chronic condition would report poor mental health than respondents without any chronic condition.

4.3.11 Number of care types provided of respondents

The type of care a caregiver provides may influence the challenges he/she faces. Research by Gaugler et al. (2000 cited in Carretero, Garces, Rodenas, & Sanjose, 2009) reported a strong relationship between the amount of activities for which care recipient is dependent and caregiver burden. Figure 4.7 shows the percentage distribution of respondents by number of care types provided.

Figure 4.7: Percentage distribution of respondents by number of care types provided



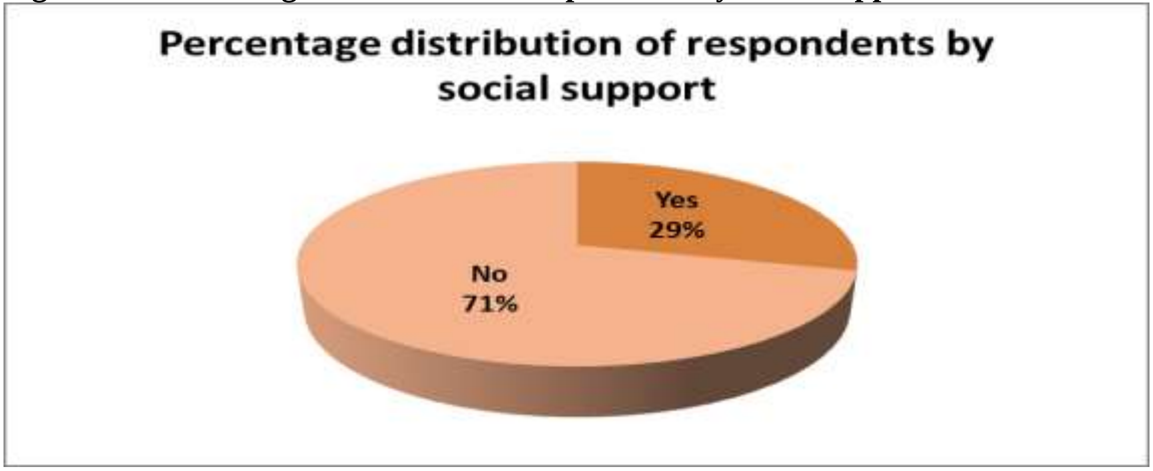
Source: EDULINK Data, 2011.

Figure 4.7 shows that about 39.1 percent, representing 43 out of 110 caregivers provide personal care such as going to the toilet and washing while about 40 percent, representing 44 out of 110 caregivers provide medical care such as changing bandages and giving medicines. About 55.5 percent, representing 61 out of 110 caregivers help with household activities such as meal preparation and shopping while about 11.8 percent, representing 13 out of 110 caregivers help with watching over care recipients. In addition, about 18.2 percent, representing 20 out of 110 caregivers help care recipients to get around outside the home. About half of respondents (50.1 percent) provided one form of care while about 8.2 percent of respondents provided five different types of care (See Table 4.8 in Appendix B). It is therefore expected that respondents who provide less than two activities would report better physical and mental health than respondents who provide more than two activities.

4.3.12 Social support of respondents

Social support may have a buffering effect on caregiver burden (Chang, Chiou and Chen, 2010). Song et al. (1997 cited in Chang, Chiou and Chen, 2010) have documented that when social support increases caregiver's burden decreases and vice versa. For the purpose of this study, social support means any financial or in-kind support received from family, relatives or friends who do not live one. Figure 4.8 shows the percentage distribution of respondents by social support.

Figure 4.8: Percentage distribution of respondents by social support



Source: EDULINK Data, 2011.

Figure 4.8 shows that out of 968 respondents involved in this study, 280 receive social support compared to 688 who receive no social support. This suggests that about 29 percent of respondents receive social support while about 71 percent of respondents receive no social support. It is expected that respondents who receive no social support would report poor mental health than respondents who receive social support.

4.3.13 Physical health status of respondents

Several studies have documented that health status of the caregivers influence their burden (Bull, 1990; Faria, 1998a cited in Faison, Faria and Frank, 1999; Faison, Faria and Frank, 1999). For the purpose of this study, self-rated health status was used as a proxy for physical health and physical health status was assessed on a five-point scale: “excellent”, “very good”, “good”, “quite good” and “poor”. Table 4.9 shows the distribution of respondents by physical health status.

Table 4.9: Distribution of respondents by physical health status

Physical Health Status	Frequency	Percentage
Poor	38	3.9
Quite Good	97	10.0
Good	333	34.4
Very Good	354	36.6
Excellent	146	15.1
Total	**968**	**100**

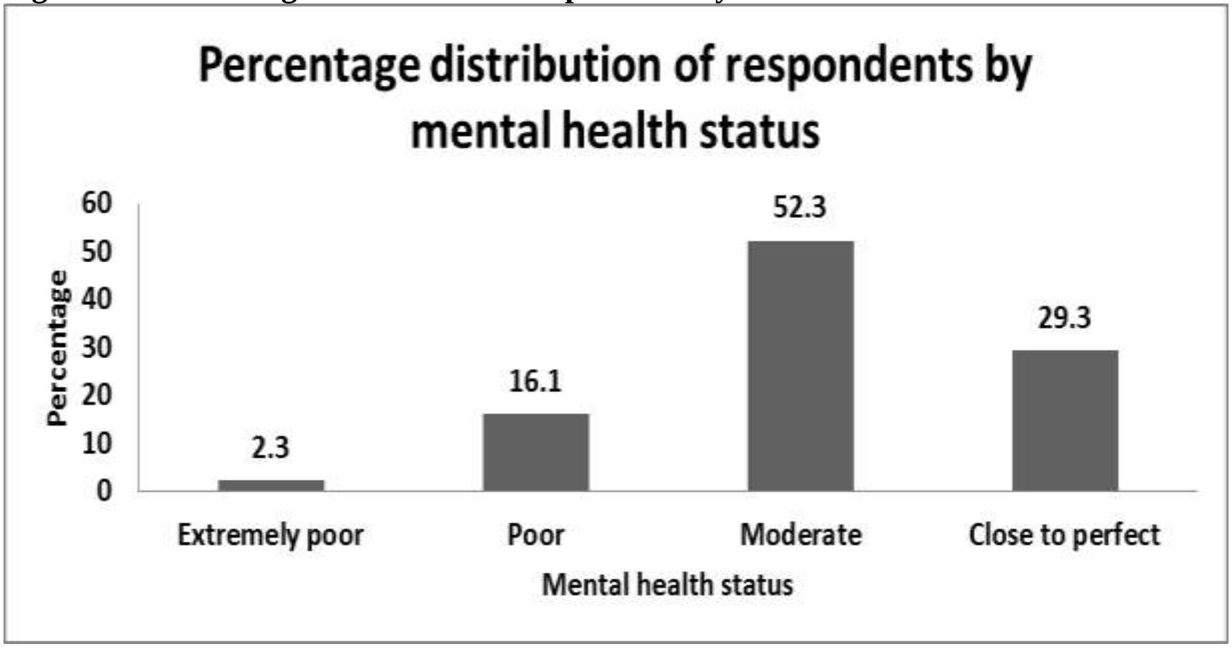
Source: EDULINK Data, 2011.

Table 4.9 shows that about 3.9 percent, representing 38 out of 968 respondents reported their physical health status as poor. About 10 percent, representing 97 out of 968 respondents reported their physical health status quite good while about 34.4 percent, representing 333 out of 968 respondents reported their physical health status as good. In addition, about 36.6 percent of respondents reported their health status as very good while about 15.1 percent, representing 146 out of 968 respondents reported their physical health status as excellent.

4.3.14 Mental health status of respondents

In the literature, the negative impact of caregiving on the mental health of caregivers is substantiated (Savage and Bailey, 2004). Orner (2006 cited in Akintola, 2008) reported that caregiving had a negative impact on the mental health of family caregivers. For the purpose of this study, the RAND 36-item health survey scale was used to score respondents responses on psychosocial health and mental health was assessed on a four-point scale: “close to perfect”, “moderate”, “poor” and “extremely poor”. Figure 4.9 shows the percentage distribution of respondents by mental health status.

Figure 4.9: Percentage distribution of respondents by mental health status



Source: EDULINK Data, 2011.

Figure 2.9 shows that more than half of respondents reported their mental health as moderate, representing 506 out of 968 respondents. About 29.3 percent, representing 284 out of 968 respondents, reported their mental health as close to perfect while about 2.3 percent, representing 22 out of 968 respondents, reported their mental health as extremely poor. In addition, about 16.1 percent, representing 156 out of 968 respondents, reported their mental health as poor.

CHAPTER FIVE

PHYSICAL AND MENTAL HEALTH OUTCOMES OF CAREGIVING

5.1 Introduction

This chapter discusses the differentials in physical and mental health outcomes. Differences in physical and mental health outcomes are related to some socio-demographic characteristics of respondents. Other factors such as social support also account for difference in physical and mental health outcomes. In this study, the association between these factors with physical and mental health outcomes is explored using cross tabulations. All associations were tested at 95% confidence level, meaning any variable under consideration is significant if it has a significant value of less than 5% (that is 0.05). For the purpose of this analysis, extremely poor and poor mental health has been merged. Multicollinearity between the control variables were measured by using Variance Inflation Factor (VIF) and Tolerance statistic. The tolerance levels and variance inflation factors were within the acceptable range. Thus, multicollinearity was not found to be a problem. In addition, some of the sample sizes were small. As a result Fisher’s exact test was used since Fisher's exact test is employed when sample sizes are small.

The chapter is divided into three sections. The first section focused on the association between caregiving and physical and mental health outcomes while the second section focused on the association between background characteristics and physical and mental health outcomes. The final section is on the association between background characteristics and social support.

5.2 Association between caregiving and physical and mental health outcomes

Caregiving can influence the physical and mental health outcomes of respondents. Table 5.1 shows that slightly more than three quarters (75.5%) of all the caregivers reported good and very good physical health while a little less than three quarters (70.4%) of non-caregivers reported good and very good physical health respectively. The general pattern shows that non-caregivers reported better physical health than caregivers. The reason for this may be that the caregivers may face more challenges due to their caregiving roles and responsibilities that can make them report poorer physical health. The p-value of 0.354 in Table 5.1 indicates that the association between caregiving and physical health is not statistically significant though.

Table 5.1 shows that more than half of caregivers reported moderate (52.7%) mental health while 3 out of every 10 caregivers reported close to perfect mental health. However, a little over half (52.2%) of non-caregivers reported moderate while almost 3 out 10 every non-caregivers reported close to perfect mental health respectively. The general pattern shows that the mental health status reported by caregiver and non-caregivers is very close. The p-value of 0.948 in Table 5.1 indicates that the association between caregiving and mental health is also not statistically significant.

5.3 Association between background characteristics and physical and mental health outcomes

5.3.1 Age and physical and mental health outcomes

Research by Henkle (1994 cited in Chappell and Dujela, 2008) found that older age was related to burden and stress. Table 5.1 shows that approximately 6 percent of respondents aged 45+ years reported poor physical health. A reason for this may be that old people are likely to report poorer health (Ferraro, 1980; Mitrushina & Satz, 1991; Fillenbaum, 1979 cited in Wu et al., 2013). In addition, the proportion of those with excellent physical health decreased with age with the exception of 15-24 age category. The p-value of 0.019 in Table 5.1 indicates that the association between age and physical health is statistically significant.

It can be seen from Table 5.1 that, the proportion reporting poor mental health increases with age with the exception of 25-34 age category. While 8 out of every 10 (80.3%) respondents aged 45+ years reported poor and moderate mental health, just about 6 out of every 10 (66.2%) respondents aged 25-34 years reported so. The p-value of 0.030 in Table 5.1 indicates that the association between age and mental health is statistically significant.

The results shows that age is strongly associated with physical (p-value= 0.019) and mental health (p-value= 0.030) than caregiving. Therefore, based on the analysis, as people age they are more likely to report poor physical and mental health irrespective of their caregiving role.

5.3.2 Sex and physical and mental health outcomes

According to Lin, Fee and Wu (2012), caregiving experience is likely to vary by caregivers' sex because men and women are socialized differently regarding caregiving. Normally, normally women are expected to give more care to the sick and elderly. Table 5.1 shows that approximately 2 percent of males reported poor physical health compared to 5 percent of females who reported poor physical health. But, equal proportion of males and females reported very good physical health. The percentage of males who reported excellent physical health is twice that for females. The general pattern shows males reported better physical health than females. A reason for this may be that women tend to take on a wider set of caregiving roles and responsibilities than men (Neal et al., 1997; Pinquart & Sorenson, 2006 cited in Lin, Fee and Wu, 2012). The p-value of 0.000 in Table 5.1 indicates that the association between sex and physical health is statistically significant.

It can be seen from Table 5.1 that a little more than a third (35.2%) of males reported close to perfect mental health while almost one-fourth (24.8%) of females reported close to perfect mental health. The general pattern shows that males reported better mental health than females. A reason for this may be that women tend to take on a wider set of caregiving roles and responsibilities than men (Neal et al., 1997; Pinquart & Sorenson, 2006 cited in Lin, Fee and Wu, 2012). The p-value of 0.002 in Table 5.1 indicates that the association between sex and mental health is statistically significant.

5.3.3 Marital status and physical and mental health outcomes

The marital status of an individual influences his/her behaviour in the society because of societal norms or social responsibilities pertaining to marriage. For the purpose of this analysis living together is merged with currently married. Table 5.1 shows that slightly less than three quarters (73.6%) of respondents who are living together/currently married reported good and very good physical health compared to almost two-thirds (66.2%) of respondents who are widowed, divorced or separated reported so. In addition, almost 2 out of every 10 respondents who are never married reported excellent physical health. The p-value of 0.203 in Table 5.1 indicates that the association between marital status and physical health is not statistically significant.

Table 5.1 shows that almost one-fifth (19.3%) of respondents who are living together/currently married reported poor mental health while one-fifth (20.1%) of respondents who are widowed/divorced/separated reported poor mental health. In addition, slightly more than one-third (33.8%) of respondents who are never married reported close to perfect mental health. The p-value of 0.180 in Table 5.1 indicates that the association between marital status and mental health is not statistically significant.

5.3.4 Religion and physical and mental health outcomes

Research has well documented that religious attendance, prayer, and beliefs are associated with less depression in active caregivers (Hebert, Dang, & Schulz, 2007). Table 5.1 shows that slightly less than three quarters (73.2%) of respondents with no religion reported good and very good physical health while almost 7 out of every 10 (70.8%) respondents who belonged to a religious group reported good and very good physical health. The p-value of 0.893 in Table 5.1 indicates that the association between religion and physical health is not statistically significant.

It can be seen from Table 5.1 that more than half (57.7%) of respondents with no religion reported moderate mental health while 5 out of every 10 (51.8%) respondents who belonged to a religious group reported moderate mental health. The p-value of 0.285 in Table 5.1 indicates that the association between religion and mental health is not statistically significant.

5.3.5 Education and physical and mental health outcomes

Education provides people with the knowledge and skills that can lead to better quality of life. Education can also help caregivers' to learn about health and best practices of caregiving. Table 5.1 shows that a little over two-thirds (68.5%) of respondents with no education reported good and very good physical health while a little less than three quarters (71.7%) of respondents with higher education reported good and very good physical health. The p-value of 0.011 in Table 5.1 indicates that the association between education and physical health is statistically significant.

It can be seen from Table 5.1 that the proportion of respondents with close to perfect mental health increased with increasing education. This pattern indicates that as respondent's educational level increases the likelihood of the respondent reporting close to perfect mental health increases. In addition, slightly more than a quarter (26.3%) of respondents with no education reported poor mental health while slightly less than a quarter (23.9%) of respondents with higher education reported poor mental health. The p-value of 0.000 in Table 5.1 indicates that the association between education and mental health is statistically significant.

5.3.6 Employment status and physical and mental health outcomes

Faria (1998b cited in Faison, Faria and Frank, 1999) have documented that many caregivers have felt that their jobs were enjoyable resources that helped them to keep their sanity. Table 5.1 shows that almost 4 out of every 10 (38.3%) employed respondents reported very good physical health while 3 out of every 10 (32.4%) unemployed respondents reported very good physical health. The general pattern shows that the physical health statuses of employed and unemployed respondents are close with exception of very good and excellent physical health categories. The p-value of 0.186 in Table 5.1 indicates that the association between employment status and physical health is not statistically significant.

Table 5.1 shows that more than half (52.6%) of employed respondents reported moderate mental health while 5 out of every 10 (51.4%) unemployed respondents reported moderate mental health. A general pattern shows that the mental health statuses of employed and unemployed respondents are close. The p-value of 0.926 in Table 5.1 indicates that the association between employment status and mental health is not statistically significant.

5.3.7 Locality of residence and physical and mental health outcomes

Locality of residence is an important factor that can influence health status. For the purpose of this analysis, James Town and Ussher Town are classified as Ga-Mashie. Table 5.1 shows that a little over one-third (35.5%) of respondents who resides in Ga-Mashie reported good physical health while a little more than one-fourth (28.9%) of respondents who resides in Agbogbloshie reported good physical health. The general pattern shows that respondents who reside in Agbogbloshie reported better physical health than respondents who resides in Ga-Mashie. A reason for this may be that most inhabitants of Agbogbloshie are engaged in manual labour, petty trading and other trading activities. Since one need better physical health to engage in these activities, they reported their physical health as better. The p-value of 0.126 in Table 5.1 indicates that the association between locality and physical health is not statistically significant.

It can be seen from Table 5.1 that almost 2 out of every 10 (18.5%) respondents who resides in Ga-Mashie reported poor mental health while approximately 18 percent of respondents who resides in Agbogbloshie reported poor mental health. The p-value of 0.625 in Table 5.1 indicates that the association between locality and mental health is not statistically significant.

5.3.8 Monthly income and physical and mental health outcomes

Research by Navaie-Waliser et al. (2002) reported that low income level of a caregiver was associated with very high levels of burden. Table 5.1 shows that the proportion of those with quite good physical health decreased with increasing monthly income. This pattern indicates that as a respondent's monthly income increases the likelihood of the respondents reporting quite good physical health decreases. Slightly less than three quarters (74.5%) of respondents who earn more than 300 Ghana cedis reported good and very good physical health while slightly more than three quarters (76.2%) of respondents who earn between 101 and 200 Ghana cedis reported good and very good physical health. In addition, higher proportion of respondents who earn between 201 and 300 Ghana cedis reported excellent physical health. The p-value of 0.122 in Table 5.1 indicates that the association between monthly income and physical health is not statistically significant.

Table 5.1 shows that the proportion of those with close to perfect mental health increased with increase in monthly income with exception of respondents who earn more than 300. Also, 2 out of every 10 (22.5%) respondents who earn less than 100 Ghana cedis reported poor mental health while 1 out of every 10 (15.2%) of respondents who earn more than 300 Ghana cedis reported poor mental health. It is worth noting that the number of dependents a respondent has may have an impact on his/her monthly income which can directly or indirectly influence the respondent's mental health. The p-value of 0.127 in Table 5.1 indicates that the association between monthly income and mental health is not statistically significant.

5.3.9 Chronic condition status and physical and mental health outcomes

The chronic condition status of caregivers will influence their caregiving experiences. Table 5.1 shows that 7 percent of respondents who have been diagnosed with chronic condition reported poor physical health while approximately 3 percent of respondents who have not been diagnosed with chronic condition reported poor physical health. A general pattern shows that respondents who have not been diagnosed with chronic condition reported better physical health than respondents who have been diagnosed with chronic condition. A reason for this may be that management of chronic conditions such as diabetes involves numerous activities every day and performance of these activities may contribute to stress which may result in respondents who have been diagnosed with chronic condition reporting their physical health as poor. The p-value of 0.000 in Table 5.1 indicates that the association between chronic condition status and physical health is statistically significant.

Table 5.1 shows that almost 2 out of every 10 (20.3%) respondents who have been diagnosed with chronic condition reported poor mental health while slightly less than one-fifth (18.0%) of respondents who have not been diagnosed with chronic condition reported poor mental health. In addition, more than half (52.6%) of respondents who have not been diagnosed with chronic condition reported moderate mental health. The p-value of 0.812 in Table 5.1 indicates that the association between chronic condition status and mental health is not statistically significant.

5.3.10 Number of care types provided and physical and mental health outcomes

Research by Gaugler et al. (2000 cited in Carretero, Garces, Rodenas, & Sanjose, 2009) reported a strong relationship between the amount of activities for which care recipient is dependent and caregiver burden. For the purpose of this analysis, multiple forms of care provided was used instead of type of care. Table 5.1 shows that approximately 16 percent of respondents who provided 1 to 2 number of care types reported quite good physical health while about 8 percent of respondents who provided more than 2 number of care types reported quite good physical health. In addition, approximately 16 percent of respondents who provided no care reported excellent physical health. The p-value of 0.360 in Table 5.1 indicates that the association between number of care types provided and physical health is not statistically significant.

Table 5.1 shows that a little over half (51.9%) of respondents who provide no care reported moderate mental health while more than half (59.4%) of respondents who provide between 1 and 2 number of care types provided reported moderate mental health. In addition, slightly less than a quarter (24.7%) of respondents who provide between 1 and 2 number of care types provided reported close to perfect mental health while slightly more than one-third (34.6%) of respondents who provide more than 2 number of care types provided reported close to perfect mental health. The p-value of 0.752 in Table 5.1 indicates that the association between multiple forms of care and mental health is not statistically significant.

5.3.11 Social support and physical and mental health outcomes

Studies invariably indicate that more social support corresponds to lower perceived burden (Gallant & Connell, 1997). Table 5.1 shows that higher proportion (15.6%) of respondents who receive no social support reported excellent physical health while approximately 14 percent of respondents who receive social support reported excellent physical health. The general pattern shows that the physical health status of respondents who received social support and those who receive no social support is very close. The p-value of 0.788 in Table 5.1 indicates that the association between social support and physical health is not statistically significant.

Table 5.1 shows that more than half (54.1%) of respondents who receive no social support reported moderate mental health while approximately 48 percent of respondents who receive social support reported moderate mental health. In addition, approximately 19 percent of respondents who receive no social support reported poor mental health while approximately 18 percent of respondents who receive social support reported poor mental health. The p-value of

0.067 in Table 5.1 indicates that the association between social support and mental health is not statistically significant.

Table 5.1: Percentage distribution of respondents by background characteristics and physical and mental health outcomes

	Physical Health							Mental Health				
Background characteristics	**Poor**	**Quite good**	**Good**	**Very good**	**Excellent**	**χ2**	**p-value**	**Poor**	**Moderate**	**Close to perfect**	**χ2**	**p-value**
Caregiving						**4.362****	**0.354**				**0.107**	**0.948**
Caregivers	3.6	11.9	39.1	36.4	9.0			17.3	52.7	30.0		
Non-caregivers	4.0	9.8	33.8	36.6	15.8			18.5	52.2	29.3		
Age						**19.774**	**0.019**				**13.999**	**0.030**
15 – 24	4.6	7.1	35.8	36.4	16.1			16.4	52.5	31.1		
25 – 34	2.6	9.4	31.8	39.0	17.2			16.2	50.0	33.8		
35 – 44	3.4	10.7	32.7	39.5	13.7			20.5	54.1	25.4		
45+	6.1	17.7	39.3	26.2	10.7			26.2	54.1	19.7		
Sex						**24.908**	**0.000**				**12.329**	**0.002**
Male	2.4	8.2	31.8	36.6	21.0			16.5	48.3	35.2		
Female	5.1	11.4	36.4	36.6	10.5			19.9	55.3	24.8		
Marital status						**10.973**	**0.203**				**6.273**	**0.180**
Not in union	4.4	7.8	35.1	34.8	17.9			16.6	49.6	33.8		
Living together/Married	3.5	10.5	34.7	38.9	12.4			19.3	54.1	26.6		
Widowed/Divorced/Separated	3.9	14.3	31.8	34.4	15.6			20.1	53.9	26.0		
Religion						**1.162****	**0.893**				**2.513**	**0.285**
No religion	4.2	7.1	32.4	40.8	15.5			21.1	57.7	21.2		
Religion	3.9	10.3	34.6	36.2	15.0			18.2	51.8	30.0		
Employment						**4.812**	**0.186**				**0.155**	**0.926**
Employed	3.8	9.8	34.3	38.3	13.8			18.4	52.6	29.0		
Unemployed	4.3	10.4	34.5	32.4	18.4			18.3	51.4	30.3		

Education						**30.761**	**0.011**				**29.949**	**0.000**
No education	0.0	15.8	21.1	47.4	15.7			26.3	52.6	21.1		
Primary	4.5	11.4	41.4	30.8	11.9			21.4	57.2	21.4		
Mid./JHS	4.2	9.5	33.4	40.0	12.9			18.1	54.8	27.1		
Sec/SHS	2.9	8.8	32.6	33.5	22.2			13.4	46.9	39.7		
Higher	8.7	8.7	39.1	32.6	10.9			23.9	34.8	41.3		
Locality						**7.199**	**0.126**				**0.939**	**0.625**
Agbogbloshie	3.0	7.8	28.9	45.2	15.1			18.1	55.4	26.5		
Ga-Mashie	4.1	10.5	35.5	34.8	15.1			18.5	51.6	29.9		
Monthly income						**17.569****	**0.122**				**9.944**	**0.127**
Less than 100	4.1	12.8	34.8	35.6	12.7			22.5	52.4	25.1		
101- 200	1.9	11.9	35.8	40.4	10.0			18.3	53.7	28.0		
201 – 300	3.3	10.1	32.6	36.0	18.0			11.2	52.8	36.0		
More than 300	4.8	4.2	32.4	42.1	16.5			15.2	51.0	33.8		
Chronic condition						**26.445****	**0.000**				**0.427**	**0.812**
Have chronic condition	7.4	13.5	35.1	33.1	10.9			20.3	50.7	29.0		
Have no chronic condition	3.3	9.4	34.3	37.2	15.8			18.0	52.6	29.4		
Number of care types provided						**8.210****	**0.360**				**1.913**	**0.752**
No care	3.9	9.6	33.9	36.7	15.9			18.6	51.9	29.5		
1 - 2	4.4	15.9	39.1	36.2	4.4			15.9	59.4	24.7		
More than 2	3.8	7.7	38.5	34.6	15.4			19.2	46.2	34.6		
Social support						**1.054**	**0.788**				**5.416**	**0.067**
Yes	3.9	10.0	33.9	38.6	13.6			17.5	47.9	34.6		
No	3.9	10.1	34.6	35.8	15.6			18.8	54.1	27.1		

Source: EDULINK Data, 2011. **Fisher's exact test****

5.4 Association between background characteristics and Social support

5.4.1 Caregiving and Social support

Table 5.2 shows that generally both caregivers and non-caregivers did not received enough social support. Approximately, 32 percent of caregivers received social support while about 29 percent of non-caregivers received social support. The p-value of 0.477 in Table 5.2 indicates that the association between caregiving and social support is not statistically significant.

5.4.2 Age and Social support

Table 5.2 shows that slightly more than one-third (34.4%) of respondents aged 45+ received social support while slightly less than a quarter (23.9%) of respondents aged between 35 and 44 received social support. The general pattern shows that social support decreased with increase in age with exception of respondents aged 45+. The p-value of 0.214 in Table 5.2 indicates that the association between age and social support is not statistically significant.

5.4.3 Sex and Social support

It can be seen from Table 5.2 that, the proportion of social support received by males and females are very close. Higher proportion of females (29.2%) received social support than males (28.5%). The p-value of 0.814 in Table 5.2 indicates that the association between sex and social support is not statistically significant.

5.4.4 Marital status and Social support

Table 5.2 shows that almost equal proportion of respondents who are never married and living together/married received social support. In addition, slightly more than a quarter (26%) of respondents who are widowed/divorced/separated received social support. The p-value of 0.661 in Table 5.2 indicates that the association between marital status and social support is not statistically significant.

5.4.5 Religion and Social support

Table 5.2 shows that respondents in the "no religion" category received almost equal proportion (28.2%) of social support as respondents who belonged to a religious group (29.0%). The p-value of 0.884 in Table 5.2 indicates that the association between religion and social support is not statistically significant.

5.4.6 Education and Social support

It can be seen from Table 5.2 that higher proportion of respondents with higher education (32.6%) received social support than respondents with no formal education (14%). The general pattern shows social support increased with increase in educational level. This pattern indicates that as educational level of a respondent increases the likelihood of the respondent receiving social support increases. The p-value of 0.068 in Table 5.2 indicates that the association between education and social support is not statistically significant.

5.4.7 Employment status and Social support

Table 5.2 shows that higher proportion of unemployed respondents (34.5%) received social support than employed respondents (26.7%). A reason for this may be that relatives and friends will be more willing to provide social support to an individual who is unemployed than one who is employed. The p-value of 0.015 in Table 5.2 indicates that the association between employment status and social support is statistically significant.

5.4.8 Locality of residence and Social support

It can be seen from Table 5.2 that higher proportion of respondents who reside in Ga-Mashie (30.7%) received social support than respondents who reside in Agbogbloshie (20.5%). A reason for this may that in indigenous population one's kinsfolk are often significant source of support in times of difficulty (Kilson 1974; Fayorsey 1995 cited in Maxwell et al., 2000). It must be noted that, Ga-Mashie are inhabited primarily by the indigenous Ga. The p-value of 0.008 in Table 5.2 indicates that the assocaition between locality and social support is statistically significant.

5.4.9 Monthly income and Social support

It can be seen from Table 5.2 that almost one-third (33%) of respondents who earn between 101 and 200 Ghana cedis received social support while slightly more than a quarter (25.8%) of respondents who earn less than 100 Ghana cedis received social support. The p-value of 0.046 in Table 5.2 indicates that the association between monthly income and social support is statistically significant.

5.4.10 Chronic condition status and Social support

Table 5.2 shows that higher proportion of respondents who have been diagnosed with chronic condition (35.6%) received social support than respondents who have not been diagnosed with chronic condition (28.4%). A reason for this may be that it is very expensive to manage chronic conditions such as diabetes and as a result relatives and friends will be more willing to provide social support to an individual with a chronic condition than an individual without any chronic condition. The p-value of 0.190 in Table 5.2 indicates that the association between chronic condition status and social support is not statistically significant.

5.4.11 Number of care types provided and Social support

It can be seen from Table 5.2 that higher proportion of respondents who provide more than 2 forms of care (34.6%) received social support than respondents who provide no care (20%). The general pattern shows that social support increased with increase in the number of care types provided. This pattern indicates that as the number of care types provided by a respondent increases the likelihood of the respondent receiving social support increases. The p-value of 0.046 in Table 5.2 indicates that the association between number of care types provided and social support is statistically significant.

In summary, the analysis in this chapter revealed that age, sex, educational status and chronic condition status were significantly associated with physical health. The analysis also revealed that age, sex and educational status were significantly associated with mental health. Furthermore, the analysis also revealed that employment status, locality of residence, monthly income, and number of care types provided were significantly associated with social support.

Table 5.2: Percentage distribution of respondents by background characteristics and social support

Background characteristics	Social Support		χ2	p-value
	Yes	No		
Caregiving			**0.505**	**0.477**
Caregivers	31.8	68.2		
Non-caregivers	28.6	71.4		
Age			**4.483**	**0.214**
15 – 24	29.6	70.4		
25 – 34	29.2	70.8		
35 – 44	23.9	76.1		
45+	34.4	65.6		
Sex			**0.055**	**0.814**
Male	28.5	71.5		
Female	29.2	70.8		
Marital status			**0.829**	**0.661**
Never married	29.9	70.1		
Living together/Married	29.1	70.9		
Widowed/Divorced/Separated	26.0	74.0		
Religion			**0.021**	**0.884**
No religion	28.2	71.8		
Religion	29.0	71.0		
Education			**8.745**	**0.068**
No education	14.0	86.0		
Primary	25.9	74.1		
Middle/JHS	30.4	69.6		
Secondary/SHS	31.8	68.2		
Higher	32.6	67.4		
Employment status			**5.963**	**0.015**
Employed	26.7	73.3		
Unemployed	34.5	65.5		
Locality			**6.948**	**0.008**
Agbogbloshie	20.5	79.5		
Ga-Mashie	30.7	69.3		
Monthly income			**8.001**	**0.046**
Less than 100	25.8	74.2		
101 – 200	33.0	67.0		
201 – 300	18.0	82.0		
More than 300	29.7	70.3		

Chronic condition			**1.719**	**0.190**
Have chronic condition	35.6	64.4		
Have no chronic condition	28.4	71.6		
Number of care types provided			**8.001**	**0.046**
No Care	20.0	80.0		
1 – 2	33.3	66.7		
More than 2	34.6	65.4		

Source: EDULINK Data, 2011.

CHAPTER SIX

DETERMINANTS OF PHYSICAL AND MENTAL HEALTH OUTCOMES AMONG RESPONDENTS

6.1 Introduction

This chapter focuses on factors associated with physical and mental health outcomes among respondents. Binary logistic regression was used to determine the effects of each variable on physical and mental health of respondents. For the purpose of this study, physical health and mental health (dependent variables) are categorized as “poor” and “better”. Regarding physical health, “poor” and “quite good” are categorized as “poor” while “good”, “very good” and “excellence” are categorized as “better”. Similarly, for mental health, “moderate” and “close to perfect” are categorized as “better”. The rationale is that some of the categories had fewer cases and as a result was added to other categories. Since both physical health and mental health have two categories, the binary logistic regression is appropriate for the analysis. Three different models are used to determine the effects of each variable on physical and mental physical respectively. The independent effect of caregiving was examined, as well as the influence of social support and chronic condition with caregiving on physical and mental health. In addition, the effects of some background characteristics of respondents were examined. It must be noted that, type of care was excluded from the analysis because it measures the same outcome as caregiving. In addition, interaction terms between caregiving and sex, age, social support respectively were tested and they were not statistically significant. As a result they were removed from the model.

6.2 The influence of caregiving on physical health

The results of Model 1 presented in Table 6.1 show the relationship between caregiving and physical health. The R-square of the model ($R^2 = 0.000$) in Table 6.1 suggests that caregiving does not predict physical health of respondents. This implies that other factors predict/explain their physical health. Although, there was no significant relationship between caregiving and physical health ($p=0.628$), caregivers are 12.8 percent less likely to report better physical health than non-caregivers. This result is consistent with most studies done on the effect of caregiving on physical health. The following found that caregivers report poor physical health than non-caregivers: Pinquart & Sorenson (2003a), (2003b); Schulz, Visintainer, & Williamson (1990); Vitaliano, Zhang, & Scanlan (2003). A reason for this may be that caregivers have less time to care for themselves because of their caregiving roles and responsibilities.

6.3 Relationship between caregiving, social support, chronic condition and physical health

The results of Model 2 presented in Table 6.1 show the relationship between caregiving, social support, chronic condition and physical health. The R-square of the model ($R^2 = 0.035$) in Table 6.1 suggests that the overall impact of the variables considered in this study predict/explain about 3.5 percent of the variation in physical health. Model 2 compared to Model 1 shows that there was an increase of 3.5 in the R^2 when social support and chronic condition was introduced into the model. Table 6.1 indicates that caregivers are 13.6 percent less likely to report better physical health than non-caregivers. On the other hand, respondents who received social support are 4.8 percent more likely to report better physical health than respondents who received no social support, to report better physical health. The relationship between social support and physical health was also not statistically significant (p=0.822).

The chronic condition status of respondents was significantly (p=0.000) related to physical health. Respondents who have not been diagnosed with any chronic condition are 247.5 percent more likely to report better physical health than respondents who have been diagnosed with a chronic condition.

6.4 Other determinants of physical health among respondents in Accra

The results of Model 3 presented in Table 6.1 show the relationship between some background characteristics of the respondents and their physical health. Table 6.1 shows an $R^2 = 0.074$ which suggest that the overall impact of the variables considered in this study predict/explain about 7.4 percent of the variation in physical health. Comparing model 3 to the previous models, it can be seen that certain socio-demographic variables influence physical health. Consistently, caregiving was not statistically significant (p=0.775) determinant of physical health after controlling for some socio-demographic characteristics of the respondents. Although, caregiving was not statistically significant, caregivers are 8.1 percent less likely to report better physical health than non-caregivers. This finding of the present study rejects the hypothesis that caregivers are less likely to report better physical health than non-caregivers. A reason for this may be that caregivers have less time to care for themselves because of their caregiving roles and responsibilities.

Social support was also consistently not statistically significant determinant of physical health after taking into consideration the influence of other variables (p=0.726). Respondents who received social support are 7.8 percent more likely to report better physical health compared to respondents who received no social support. This result supports findings of Ahn et al. (2012) who found in their study on self-reported physical and mental health of older adults that social support was not significantly associated with physical health.

It can also be observed from Table 6.1 that respondents aged 45+ are 58.2 percent less likely to report better physical health than respondents aged 15 to 24 (the reference category). The relationship between respondents aged 45+ and physical health was statistically significant (p=0.016). This result is consistent with the findings of most studies done on the effect of caregiving on physical health which indicate that caregivers in older ages are associated with poor physical health (Brunet et al., 1996; Singer, Hopman, & MacKenzie, 1999; Kim & Schulz, 2008; Vitaliano, Zhang, & Scanlan, 2003; Navaie-Waliser et al., 2002). The general pattern indicates that there is a decrease in better physical health when age increases. A plausible explanation is that age is associated with decrease in physical health irrespective of caregiving role (Rowe & Kahn, 1998 cited in Pinquart & Sörensen, 2007).

The relationship between sex of respondents and physical health was not statistically significant. Males are 48.8 percent more likely to report better physical health than their female counterparts. In the bivariate analysis of this study, the results indicate that females reported the highest proportion of poor physical health and males reported the highest proportion of excellent physical health.

Furthermore, marital status does not have a statistically significant relationship with physical health. But respondents who are living together/currently married are 2.5 percent more likely to report better physical health than respondents who are single (never married). A plausible explanation is that living together or being married has some advantages such as eating more nutritious meals at home which reduces one's risk of getting sick.

The religious affiliation of respondents does not have statistically significant relationship with physical health. Respondents who belonged to a religious group are 24.1 percent less likely to report better physical health than respondents who belonged to no religious group.

In addition, the level of education does not have statistically significant relationship with physical health. However, the general pattern indicates that there is increase in better physical health when educational level increases except higher education. Respondents who had attained higher education are 12.2 percent less likely to report better physical health.

Employment status of respondents does not have statistically significant relationship with physical health. Employed respondents are 24.8 percent more likely to report better physical health than unemployed respondents.

In addition, the relationship between locality of residence and physical health was not statistically significant. Respondents who reside in Agbogbloshie are 32 percent more likely to report better physical health than respondents in Ga Mashie.

It can also be observed from Table 6.1 that respondents who earn more than 300 Ghana cedis are 105.7 percent more likely to report better physical health than respondents who earn less than 100 Ghana cedis. The relationship between respondents who earn more than 300 Ghana cedis and physical health was statistically significant (p=0.042). This result supports findings of Ahn et al. (2012) on self-reported physical and mental health of older adults, and a meta-analysis of Pinquart & Sörensen (2007) on correlates of physical health of informal caregivers, who reported that higher income is associated with better physical health. According to Ahn et al. (2012), there is a positive relationship between higher income and reporting better physical health. The general pattern indicates that there is increase in better physical health when monthly income increases.

The chronic condition status of respondents was significantly (p=0.001) related to physical health. Respondents who have not been diagnosed with any chronic condition are 153.5 percent more likely to report better physical health than respondents who have been diagnosed with a chronic condition. This result support findings of Hopman et al. (2009) on associations between chronic disease, age and physical and mental health status. They reported that chronic disease has a significant negative impact on physical health. Research has well established that physical health status declines with the presence of disease (Singer, Hopman, & MacKenzie, 1999; Brunet et al., 1996 cited in Hopman et al., 2009). A plausible explanation is that management of chronic conditions such as diabetes involves numerous activities every day and performance of these activities may contribute to stress which may negatively influence the physical health of respondents who have been diagnosed with chronic condition.

Table 6.1: Relationship between some background characteristics and physical health

Variables	Physical Health					
	Model 1		Model 2		Model 3	
	Nagelkerke $R^2 = 0.000$		Nagelkerke $R^2 = 0.035$		Nagelkerke $R^2 = 0.074$	
	Co-efficient (β)	Odds Ratio [Exp (B)]	Co-efficient (β)	Odds Ratio [Exp (B)]	Co-efficient (β)	Odds Ratio [Exp (B)]
Intercept	1.836**	6.271	0.714**	2.041	0.669	1.952
Caregiving						
Caregivers	-0.137	0.872	-0.146	0.864	-0.085	0.919
Non-caregivers (RC)	-	1.000	-	1.000	-	1.000
Social Support						
Yes			0.047	1.048	0.075	1.078
No (RC)			-	1.000	-	1.000
Chronic Condition						
Have chronic condition (RC)			-	1.000	-	1.000
Have no chronic condition			1.246**	3.475	0.930*	2.535
Age						
15 – 24 (RC)					-	1.000
25 – 34					-0.139	0.871
35 – 44					-0.172	0.842
45+					-0.873*	0.418
Sex						
Male					0.398	1.488
Female (RC)					-	1.000
Marital Status						
Never married (RC)					-	1.000
Living together/married					0.250	1.025
Widowed/Divorced/Separated					-0.116	0.891
Religion						
No religion (RC)					-	1.000
Religion					-0.275	0.759

Education						
No education (RC)					-	1.000
Primary					0.084	1.088
Middle/JHS					0.270	1.310
Secondary/SHS					0.346	1.414
Higher					-0.130	0.878
Employment						
Employed					0.221	1.248
Unemployed (RC)					-	1.000
Locality						
Agbogbloshie					0.278	1.320
Ga Mashie (RC)					-	1.000
Monthly Income						
Less than 100 (RC)					-	1.000
101 – 200					0.297	1.346
201 – 300					0.289	1.335
More than 300					0.721*	2.057
Unable to estimate income					0.207	1.230

Source: EDULINK Data, 2011. **RC= Reference Category** ***P<0.050** ****P<0.000**

Note: Type of care was excluded because it was highly correlated with caregiving.

6.5 The influence of caregiving on mental health

The results of Model 4 presented in Table 6.2 show the relationship between caregiving and mental health. The R-square of the model ($R^2 = 0.000$) in Table 6.2 suggests that caregiving does not predict mental health of respondents. This implies that other factors predict/explain their mental health. Although, there was no significant relationship between caregiving and mental health (p=0.748), caregivers are 8.9 percent more likely to report better mental health than non-caregivers. This result is consistent with some studies done on the effect of caregiving on mental health. The following reported that caregiving can lead to positive psychological effects and health benefits for some caregivers: Foley, Tung, & Mutran (2002); Miller, & Lawton (1997 cited in Roth et al., 2009). A plausible explanation is that people with sound mental health are more likely to be caregivers than those with poor mental health.

6.6 Relationship between caregiving, social support, chronic condition and mental health

The results of Model 5 presented in Table 6.2 show the relationship between caregiving, social support, chronic condition and mental health. The R-square of the model in Table 6.2 suggests that caregiving and social support predict about 0.2 percent of the variation in mental health. Model 2 compared to model 1 shows that there was an increase of 0.2 percent in the R^2 when social support was introduced into the model. Table 6.2 indicates that caregivers are 8.6 percent more likely to report better mental health than non-caregivers. However, the relationship between caregiving and mental health was not statistically significant (p=0.758). On the other hand, respondents who received social support are 9.4 percent more likely to report better mental health than respondents who received no social support. The relationship between social support and mental health was also not statistically significant (p=0.629). In addition, the chronic condition status of respondents was not significantly (p=0.408) related to physical health. Respondents who have not been diagnosed with any chronic condition are 27.8 percent more likely to report better physical health than respondents who have been diagnosed with a chronic condition.

6.7 Other determinants of mental health among respondents in Accra

The results of Model 6 presented in Table 6.2 show the relationship between some background characteristics of respondents and mental health. Table 6.2 shows an $R^2 = 0.042$ which suggest that the overall impact of the variables considered in this study predict/explain about 4.2 percent of the variation in mental health. Comparing model 3 to the previous models, it can be seen that certain socio-demographic variables influence mental health. Consistently, caregiving was not statistically significant (p=0.712) determinant of mental health after controlling for some socio-demographic characteristics of the respondents. This result support findings of Ahn et al. (2012) who found in their study on self-reported physical and mental health of older adults that caregiving was not associated with mental health. Although, caregiving was not statistically significant, caregivers are 10.6 percent more likely to report better mental health than non-caregivers. This finding of the present study rejects the hypothesis that caregivers are less likely to report better mental health than non-caregivers. A plausible explanation is that caregiving can lead to positive psychological effects and health benefits for some caregivers.

Social support was also consistently not statistically significant determinant of mental health after taking into consideration the influence of other variables (p=0.599). However, respondents who received social support are 10.6 percent more likely to report better mental health compared to respondents who received no social support. This finding of the study rejects the hypothesis that respondents who receive social support are more likely to report better mental health than respondents who receive no social support. A plausible explanation is that social support can moderate the impact of caregiving.

It can be observed from Table 6.2 that respondents aged 45+ are 54.7 percent less likely to report better mental health than respondents aged 15 to 24 (the reference category). The relationship between respondents aged 45+ and mental health was statistically significant (p=0.016). This result support finding of Neri et al. (2012) who found in their study on relationships between gender, age, family conditions, physical and mental health, and social isolation of elderly caregivers that older age was associated with poor mental health. The general pattern indicates that there is a decrease in better mental health when age increases. A plausible explanation is that as one ages, one's mental health deteriorates. Upon the basis of these results, the hypothesis that older respondents are more likely to report better mental health than younger respondents is rejected.

The relationship between sex of respondents and mental health was not statistically significant. Males are 14.3 percent more likely to report better mental health than their female counterparts. In the bivariate analysis of this study, the results indicate that females reported the highest proportion of poor and poor mental health. Upon the basis of these findings, the hypothesis that male respondents are more likely to report better mental health than female respondents is rejected.

Furthermore, marital status of respondents was not statistically significant with mental health. However, living together/married respondents are 3.9 percent more likely to report better mental health than respondents who are single (never married).

The religious affiliation of respondents was not statistically significant with mental health. Respondents who belonged to a religious group are 17.8 percent more likely to report better mental health than respondents who belonged to no religious group.

Table 6.2 further indicates that generally there is an increase in better mental health when level of education increases except higher education. Respondents who had attained Secondary/SHS education are 123.8 percent more likely to report better mental health than respondents with no formal education. The relationship between respondents who had attained Secondary/SHS education and mental health was statistically significant (p=0.036). This result supports findings of Ahn et al. (2012) who found in their study on self-reported physical and mental health of older adults that higher educated respondents reported better mental health than respondents with less than a high school education. A plausible explanation is that as one’s educational level increases one is more likely to engage in activities that will boost his/her mental health.

Employment status of respondents was not statistically significant with mental health. Employed respondents are 3.8 percent more likely to report better mental health than unemployed respondents.

In addition, locality of residence was not significantly related to mental health. Respondents who reside in Agbogbloshie are 6.3 percent more likely to report better mental health than respondents in Ga Mashie.

It can be seen from Table 6.2 that respondents who earn between 201 and 300 Ghana cedis are 160.7 percent more likely to report better mental health than respondents who earn less than 100 Ghana cedis. The relationship between respondents who earn between 201 and 300 Ghana cedis and mental health was statistically significant (p=0.011). Respondents who earn more than 300 Ghana cedis are 65.8 percent more likely to report better mental health than respondents who earn less than 100 Ghana cedis. In addition, respondents who earn between 101 and 200 Ghana cedis are 34.1 percent more likely to report better mental health than respondents who earn less than 100 Ghana cedis. This result supports findings of Ahn et al. (2012) who found in their study on self-reported physical and mental health of older adults that higher income was positively associated with better mental health.

The chronic condition status of respondents was not significantly related to mental health. Respondents who have not been diagnosed with any chronic condition are 0.9 percent more likely to report better mental health than respondents who have been diagnosed with a chronic condition.

In summary, the analysis in this chapter revealed that older age (45 years and above), earning more than 300 Ghana cedis, and having no chronic condition were significantly related to physical health. In addition, the analysis also revealed that older age (45 years and above), secondary/SHS education, and earning between 201 and 300 Ghana cedis were significantly related to mental health.

Table 6.2: Relationship between some background characteristics and mental health

Variables	**Mental Health**					
	Model 4		**Model 5**		**Model 6**	
	Nagelkerke R^2 = 0.000		**Nagelkerke R^2 = 0.002**		**Nagelkerke R^2 = 0.042**	
	Co-efficient (β)	**Odds Ratio [Exp (B)]**	**Co-efficient (β)**	**Odds Ratio [Exp (B)]**	**Co-efficient (β)**	**Odds Ratio [Exp (B)]**
Intercept	1.481**	4.396	1.230**	3.422	0.669	1.952
Caregiving						
Caregivers	0.086	1.089	0.082	1.086	0.102	1.106
Non-caregivers (RC)	-	1.000	-	1.000	-	1.000
Social Support						
Yes			0.090	1.094	0.101	1.106
No (RC)			-	1.000	-	1.000
Chronic Condition						
Have chronic condition (RC)			-	1.000	-	1.000
Have no chronic condition			0.245	1.278	0.009	1.009
Age						
15 – 24 (RC)					-	1.000
25 – 34					-0.097	0.907
35 – 44					-0.357	0.700
45+					-0.792*	0.453
Sex						
Male					0.133	1.143
Female (RC)					-	1.000
Marital Status						
Never married (RC)					-	1.000
Living together/married					0.039	1.039
Widowed/Divorced/Separated					0.080	1.083
Religion						
No religion (RC)					-	1.000
Religion					0.164	1.178

Education						
No education (RC)					-	1.000
Primary					0.343	1.409
Middle/JHS					0.545	1.725
Secondary/SHS					0.805*	2.238
Higher					0.022	1.023
Employment						
Employed					0.038	1.038
Unemployed (RC)					-	1.000
Locality						
Agbogbloshie					0.062	1.063
Ga Mashie (RC)					-	1.000
Monthly Income						
Less than 100 (RC)					-	1.000
101 – 200					0.294	1.341
201 – 300					0.958*	2.607
More than 300					0.506	1.658
Unable to estimate income					0.095	1.099

Source: EDULINK Data, 2011. RC= Reference Category *P<0.050 **P<0.000

Note: Type of care was excluded because it was highly correlated with caregiving.

CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter summarizes the findings and discussions of the present study. This chapter is divided into three main sections. The first section presents the study findings while the second section presents the conclusion of the study. Lastly, the final section presents appropriate recommendation(s).

7.2 Summary

One of society's great resources for the provision of care is its numerous family members who provide care to ill or disabled relatives. Although caregivers perform important services for their society, friends and relatives, caregiving resulting in a decline in physical and emotional health, increased depressive symptoms, and a decreased sense of well-being. The present study examined the relationship between caregiving and physical and mental health of respondents in Accra (Ga Mashie and Agbogbloshie). The specific objectives of this study were as follows:

1. To find out the levels of caregiving and social support and the status of physical and mental health within the study areas/population.
2. To examine the association between caregiving and physical and mental health of respondents in the study areas/population.
3. To examine the factors which are related to physical and mental health of respondents in the study areas/population.

4. To make recommendation(s) for policy.

The study utilized the second round of EDULINK Urban Health and Poverty Project which was collected among residents of Ga-Mashie (James Town and Ussher Town) and Agbogbloshie between November 25th and December 22nd 2011. The sample was drawn from 29 enumeration areas (EA's), each with 20 households systematically chosen to make up a total of 580 households. The number of EA's and households in each locality was proportionated to the population size of the locality. In each household, females aged 15 to 49 years and males aged 15 to 59 years were interviewed. The sample size for the present study was 968 respondents aged 15 to 59 years.

Frequencies, percentages and charts were used to describe the characteristics of the sampled population. In addition, Chi-square test and Fisher's exact test were used to ascertain the association amongst the variables in this study. A binary logistic regression analysis was performed to describe six main models in determining the relationship among the variables and physical and mental health of respondents in Accra (Ga Mashie and Agbogbloshie).

Findings showed that majority of respondents were non-caregivers (89 percent) and more than half of the respondents (56 percent) were females. About one-third of respondents (33.5 percent) were aged 15 to 24, with 39.8 percent of respondents were never married. The majority of respondents were Christians (79.8 percent), with 43.9 percent having middle/J.H.S education. Six hundred and ninety respondents were employed (71 percent), with a little over half (51.1 percent) from Ussher Town. Two hundred and sixty seven respondents had their monthly income less than 100 Ghana cedis and majority of them (93.0 percent) had not been diagnosed by a medical professional that they have any chronic condition. The majority of respondents received no social support (71 percent). A higher proportion of respondents (36.6 percent) reported “very good” physical while a little over half of respondents (52.3 percent) reported “moderate” mental health.

The associations of variables with physical health, mental health and social support were also explored. The findings of the present study revealed that age, sex, education and chronic condition status were significantly associated with physical health. On the other hand, age, sex and education were significantly associated with mental health. In addition, employment status, locality, monthly income, and number of care types provided were significantly associated with social support.

The present study also answered the five main hypotheses. Despite caregiving been statistically insignificant with better physical health, caregivers were 8.1 percent less likely to report better physical health than non-caregivers. Upon this result, the first hypothesis was rejected. Also, despite caregiving been statistically insignificant with better mental health, caregivers are 10.6 percent more likely to report better mental health than non-caregivers. Upon this result, the second hypothesis was rejected. The third hypothesis was rejected because older respondents were 54.7 percent less likely to report better mental health than younger respondents. Despite sex been statistically insignificant with better mental health, male respondents were more likely to report better mental health than female respondents. As a result, the fourth hypothesis was rejected. Lastly, respondents who received social support were 10.6 percent more likely to report better mental health compared to respondents who received no social support. Social support was statistically insignificant with better mental health and hence the fifth hypothesis was rejected.

In the binary logistic regression models, caregiving was not significantly associated with physical and mental health. This result support findings of Ahn et al. (2012) who found in their study on self-reported physical and mental health of older adults that caregiving was not associated with mental health. Caregiving often requires substantial social support and in Ghana, there is often an abundance of support for the sick and their family (Owusu, 2005). This may be a plausible explanation to why caregiving is not significantly associated with physical and mental health in Accra.

Also, the results showed that age, monthly income, and chronic condition status were significantly related to physical health. In addition, the result also showed that age, education, and monthly income were significantly related to mental health. The general pattern indicates that better physical health decreases as age increases. This result was found in other studies (Brunet et al., 1996; Singer, Hopman, & MacKenzie, 1999). It was also found that generally as educational level increases better physical health increases except higher education. Furthermore, the general pattern indicates that better physical health increases as monthly income increases. Respondents who earned more than 300 Ghana cedis were 105.7 percent more likely to report better physical health than respondents who earned less than 100 Ghana cedis. This result supports other studies that higher income is associated with better physical health (Ahn et al., 2012; Pinquart & Sörensen, 2007). Respondents who have not been diagnosed with any chronic condition are 153.5 percent more likely to report better physical health than respondents who have been diagnosed with a chronic condition. This result support findings of Hopman et al. (2009).

The binary logistic regression also revealed that better mental health decreases as age increases. Older respondents were 54.7 percent less likely to report better mental health than younger respondents. This result support finding of Neri et al. (2012). Employed respondents were 3.8 percent more likely to report better mental health than unemployed respondents even though the relationship between employment status and mental health was not statistically significant.

7.3 Conclusion

The findings of the present study indicates that caregivers are less likely to report better physical health but they are more likely to report better mental health, although there was no significant relationship between caregiving and physical health and mental health respectively. This means that caregiving was not related to physical and mental health within the study communities. Although physical health improves as level of education increases, respondents with higher education were less likely to have better physical health. Although there was no significant relationship between sex and physical and mental health respectively, males were more likely to report better physical health and better mental health than their female counterparts. Furthermore, respondents who received social support were more likely to report better physical health and better mental health than respondents who received no social support, although there was no significant relationship between social support and physical and mental health respectively. The findings of the study indicates that older age (45 years and above), earning more than 300 Ghana cedis, and having no chronic condition were significantly related to physical health. Also, older age (45 years and above), secondary/SHS education, and earning between 201 and 300 Ghana cedis were significantly related to mental health.

7.4 Recommendations for policy and future research

Based on the findings of the present study, the following recommendations are made:

1. Public health interventions to improve physical health and mental health should target the aged who are most vulnerable.
2. National ageing policy should be strengthened by the ministry of employment and social welfare to further reduce the vulnerability of the aged.
3. The present study provides valuable insights regarding physical health and mental health of caregivers. However, there were variables within caregiving literature that were not incorporated into this study, as such future research in the study area could consider those variables. Future research could consider variables such as care recipient's behaviour problems, cognitive impairment, and functional disabilities, the duration and amount of care provided, caregiver and patient consideration, the relationship between caregiver and care recipient, living with care recipient, characteristics of care recipient, and social isolation.
4. The present study provides only a snapshot of the mental health and physical health of caregivers. However, to better understand the impact of caregiving on physical and mental health of caregivers, qualitative studies are needed to examine the nuances of experience and long-term caregiving outcomes.

REFERENCES

Aboderin, I., 2004. Decline in material family support for older people in urban Ghana, Africa: Understanding processes and causes of change. *Journals of Gerontology series B: Psychological Sciences and Social Sciences, 59*(3), pp. S128-S137.

Agyei-Mensah, S., & de-Graft Aikins A., 2010. Epidemiological transition and the double burden of disease in Accra, Ghana. *Journal of Urban Health,* 87(5), pp. 879-897.

Ahn, S., Angela K. Hochhalter, A.K., Moudouni, D.K.M., Smith, M.L., & Ory, M.G., 2012. Self-reported physical and mental health of older adults: The roles of caregiving and resources. *Maturitas*, 71(1), pp. 62– 69.

Akintola, O., 2008. Defying all odds: coping with the challenges of volunteer caregiving for patients with AIDS in South Africa. *Journal of Advanced Nursing*, 63(4), pp. 357–365.

Akintola, O., 2010. Perceptions of rewards among volunteer caregivers of people living with AIDS working in faith-based organizations in South Africa: a qualitative study. *Journal of the International AIDS Society*, 13, pp. 22.

Alzheimer's Association & National Alliance for Caregiving, 2004. *Families Care: Alzheimer's Caregiving in the United States*. Chicago, IL: Alzheimer's Association and Bethesda, MD: National Alliance for Caregiving.

Antwi, P. & Atobrah, D., 2005. Stigma in the care of people living with HIV/AIDS and cancer in Accra. In: C. Oppong, P. Antwi, and K. Waerness, eds. 2009. *Care of the seriously sick and dying: Perspective from Ghana*. Bergen: Allkopi. Ch.5.

Antwi, P., 2005. Palliative Care: In the family and hospice. In: C. Oppong, P. Antwi, and K. Waerness, eds. 2009. *Care of the seriously sick and dying: Perspective from Ghana*. Bergen: Allkopi, pp. 290-300.

Applebaum, A.J., & Breitbart, W., 2012. *Care for the cancer caregiver: A systematic review*. Cambridge: Cambridge University Press.

Awadalla, A.W., Ohaeri, J.U., FRCPsych, Al-Awadi, S.A., & Tawfiq, A.M., 2006. Diabetes mellitus patients' family caregivers' subjective quality of life. *Journal of the National Medical Association*, 98(5), pp. 727-736.

Ayernor, P.K., 2012. Diseases of ageing in Ghana. *Ghana Medical Journal*, 46(2), pp. 18–22.

Barratt, J., International Federation on Ageing, 2007. *Major developments and trends in creating enabling environments for older persons*. New York, February 7-9, 2007, New York: United Nations.

Barrow, S. & Harrison, R., 2005. Unsung heroes who put their lives at risk? Informal caring, health, and neighborhood attachment. *Journal of Public Health*, 27(3), pp. 292-297.

Baumgarten, M., Battista, R.N., Infante-Rivard, C., Hanley, J.A., Becker, R., & Gauthier, S., 1992. The Psychological and Physical health of family members caring for an elderly person with dementia. *Journal of Clinical Epidemiology*, 45(1), pp. 61-70.

Beach, S.R., Schulz, R., Yee, J.L., & Jackson, S., 2000. Negative and positive health effects of caring for a disabled spouse: Longitudinal findings from the Caregiver Health Effects Study. *Psychology and Aging*, 15(2), pp. 259-271.

Beaglehole, R., & Yach, D., 2003. Globalization and the prevention and control of non-communicable diseases: the neglected chronic diseases of adults. *Lancet*, 362(9387), pp. 903-908.

Blanchard, A., Hodgson, J., Lamson, A., & Dosser, D., 2009. Lived experiences of adult children who have a parent diagnosed with Parkinson's disease. *The Qualitative Report*, 14(1), pp. 61-80.

Blum, K., & Sherman, D.W., 2010. Understanding the experience of caregivers: A focus on transitions. *Seminars in Oncology Nursing*, 26(4), pp. 243-258.

Blumenthal, H.T., 2003. The aging-disease dichotomy: true or false? *The Journals of Gerontology Series B*: *Psychological Sciences and Social Sciences*, 58(2), pp. 138-145.

Bosu W.K., 2010. Epidemic of hypertension in Ghana: A systematic review. *BMC Public Health*, 10, pp. 418.

Brunet, D.G., Hopman, W.M., Singer, M.A., Edgar, C.M., & MacKenzie, T.A., 1996. Measurement of health-related quality of life in multiple sclerosis patients. *Canadian Journal of Neurological Sciences*, 23(2), pp. 99–103.

Bucher, J.A., Loscalzo, M., James Zabora, J., Houts, P.S., Hooker, C., & BrintzenhofeSzoc, K., 2001. Problem-solving cancer care education for patients and caregivers. *Cancer Practice*, 9(2), pp. 66-70.

Caregiving in the United States. (2009).National Alliance for Caregiving in collaboration with American Association of Retired Persons [AARP] (2009). Retrieved from http://www.caregiving.org/data/Caregiving_in_the_US_2009_full_report.pdf [Accessed Nov., 2012].

Carretero, S., Garces, J., Rodenas, F., & Sanjose, V., 2009. The informal caregiver's burden of dependent people: Theory and empirical review. *Archives of Gerontology and Geriatrics*, 49(1), pp. 74–79.

Center on Aging Society, 2005. *How Do Family Caregivers Fare? A Closer Look at Their Experiences.* (Data Profile, Number 3). Washington, D.C.: Georgetown University.

Chang, H-Y., Chiou, C-J., & Chen, N-S., 2010. Impact of mental health and caregiver burden on family caregivers' physical health. *Archives of Gerontology and Geriatrics*, 50(3), pp. 267–271.

Chappell, N.L., & Dujela, C., 2008. Caregiving: Predicting at risk status. *Canadian Journal on Aging*, 27(2), pp. 169-179.

Cho, M.H., Dodd, M.J., Lee, K.A., Padilla, G., & Slaughter, R., 2006. Self-reported sleep quality in family caregivers of gastric cancer patients who are receiving chemotherapy in Korea. *Journal of Cancer Education*, 21(1), pp. 37-41.

Chockalingam, A., Campbell, N.R., & Fodor, J.G., 2006. Worldwide epidemic of hypertension. *Canadian Journal of Cardiology*, 22(7), pp. 553-555.

Chou, K. R., LaMontagne, L. L., & Hepworth, J. T., 1999. Burden experienced by caregivers of relatives with dementia in Taiwan. *Nursing Research*, 48, pp. 206-214.

Cousins, R., Davis, A. D. M., Turnbull, C. J., & Playfer, J. R., 2002. Assessing caregiving distress: A conceptual analysis and a brief scale. *British Journal of Clinical Psychology*, 41(4), pp. 387-403.

Christakis, N.A. & Allison, P.D., 2006. Mortality after the hospitalization of a spouse. *New England Journal of Medicine*, 354(7), pp. 719-730.

Clyburn, L., Stones, M., Hadjistavropoulos, T., & Tuokko, H., 2000. Predict depression in caregiver burden and in Alzheimer's disease. *Journals of Gerontology series B: Psychological Sciences and Social Sciences*, 55(1), pp. S2-S13.

Cochrane, J.J. Goering, P.N., & Rogers, J.M., 1997. The mental health informal caregivers epidemiological survey. *American Journal of Public Health*, 87(12), pp. 2002-2007.

Colbourne, M.J., Edington, G.M., Hughes, M.H., & Ward-Brew A., 1950. A medical survey in a gold coast village. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 44(3), pp. 271-290.

Connell, P.J., 2003. *A phenomenological study of the lived experiences of adult caregiving daughters and their elderly mothers*. PhD. Unpublished. University of Florida.

Coughlin, J., 2010. Estimating the impact of caregiving and employment on well-being. *Outcomes and Insights*, 2(1), pp. 1-7.

CPOP, 2006. *Aging in Sub-Saharan Africa: Recommendations for Furthering Research*. Washington, D.C.: The National Academies Press.

de-Graft Aikins, A., 2007. Everyday experiences of diabetes in Ghana: challenges for self-care, psychosocial support and advocacy [ppt]. Available at: < http://www.google.com.gh/url?sa=t&rct=j&q=ama-de-graft-aikins-everyday-experiences-of-diabetes-ncd-workshop-12-april1.ppt&source=web&cd=1&cad=rja&ved=0CCsQFjAA&url=http%3A%2F%2Fwww.apccafrica.org%2Fwp-content%2Fuploads%2F2012%2F04%2FAma-de-Graft-Aikins-Everyday-Experiences-of-Diabetes-NCD-Workshop-12-April1.ppt&ei=J-JnUfWWNOmb0wXkvYGAAw&usg=AFQjCNGa4vWN9CpJ1GFZB9tmtCzdXahqjA&bvm=bv.45175338,d.d2k> [Accessed 12 April 2013].

de-Graft Aikins, A., 2007. Ghana's neglected chronic disease epidemic: A developmental challenge. *Ghana Medical Journal*, 41(4), pp. 154-159.

de-Graft Aikins, A., Addo, J., Ofei, F., Bosu, W.K., & Agyemang, C., 2012. Ghana’s burden of chronic non-communicable diseases: Future directions in research, practice and policy. *Ghana Medical Journal*, 46(2), pp. 1-3.

de-Graft Aikins, A., Unwin, N., Agyemang, C., Allotey, P., Campbell, C., & Arhinful, D., 2010. Tackling Africa's chronic disease burden: From the local to the global. *Globalization and Health*, 6, pp. 5.

de Vries, S., Verheij, R. A., Groenewegen , P. P., & Spreeuwenberg, P., 200. Natural environments -- healthy environments? An exploratory analysis of the relationship between greenspace and health. *Environment and Planning A*, 35(10), pp. 1717-1731.

Dennis-Antwi, J.A., Culley, L., Hiles, D.R., & Dyson, S.M., 2011. ‘I can die today, I can die tomorrow’: lay perceptions of sickle cell disease in Kumasi, Ghana at a point of transition. *Ethnicity & Health*, 16 (4-5), pp. 465-481.

Faison, K.J., Faria, S.H., & Frank D., 1999. Caregivers of Chronically Ill Elderly: Perceived Burden. *Journal of Community Health Nursing*, 16(4), pp. 243-253.

Family Caregiver Alliance (FCA), 2006. *Caregiver Assessment: Principles, Guidelines and Strategies for Change*. Report from a National Consensus Development Conference (Vol. I). San Francisco: Author.

Family Caregiver Alliance (FCA), 2006. Fact sheet: Caregiver health. Retrieved from http://caregiver.org/caregiver/jsp/content_node.jsp?nodeid=1822. [Accessed Feb., 2013].

Fatoye, F. O., Komolafe, M. A., Adewuya, A. O., & Fatoye, G. K., 2006. Emotional distress and self-reported quality of life among primary caregivers of stroke survivors in Nigeria. *East African Medical Journal*, 83(5), pp. 271-279.

Fayorsey, C., 1995. Ga women's autonomy: A critique of the concepts and economy of the household and family. *African Anthropology*, 2 (1), pp. 91–130.

Ferrucci, L., 2008. The Baltimore Longitudinal Study of Aging (BLSA): A 50-year-long journey and plans for the future. *The Journals of Gerontology Series B*: *Psychological Sciences and Social Sciences*, 63(12), pp. 1416–9.

Fletcher, B.S., Miaskowski, C., Given, B., & Schumacher, K., 2012. The cancer family caregiving experience: An updated and expanded conceptual model. *European Journal of Oncology Nursing*, 16(4), pp. 387-398.

Foley, K.L., Tung, H.J., & Mutran, E.J., 2002. Self-gain and self-loss among African-American and White caregivers. *Journals of Gerontology series B: Psychological Sciences and Social Sciences*, 57(1), pp. S14–S22.

Gallant, M.P., & Connel, C.M., 1997. Predictors of decreased self-care among spouse caregivers of older adults with dementing illnesses. *Journal of Aging and Health*, 9(3), pp. 373-395.

Gaugler, J. E., Zarit, S. H., & Pearlin, L. I., 2003. The onset of dementia caregiving and its longitudinal implications. *Psychology and aging*, 18(2), pp. 171-80.

Gaugler, J. E., Kane, R. L., Kane, R. A., & Newcomer, R., 2005. Unmet care needs and key outcomes in dementia. *Journal of the American Geriatrics Society*, 53, pp. 2098-2105.

Ghana Statistical Service (GSS), 2013. *2010 Population and housing census*. Accra: GSS.

Giovannetti, E.R., Wolff, J.L., Frick, K.D., & Boult, C., 2009. Construct validity of the work productivity and activity impairment questionnaire across informal caregivers of chronically ill older patients. *Value Health*, 12(6), pp. 1011-1017.

Given, B., Wyatt, G., Given, C., Gift, A., Sherwood, P., DeVoss, D., & Rahbar, M., 2004. Burden and depression among caregivers of patients with cancer at the end of life. *Oncology Nursing Forum*, *31*(6), pp. 1105-1117.

Glaser, R. & Kiecolt-Glaser, J.K., 1997. Chronic stress modulates the virus-specific immune response to latent herpes simplex virus Type 1. *Annals of Behavioral Medicine*, 19(2), pp. 78-82.

Gruetzner, H.M. 2001. *Alzheimer's: A Caregiver's Guide and Sourcebook*. New Jersey: John Wiley & Sons.

Grunfeld, E., Coyle, D., Whelan, T., Clinch, J., Reyno, L., Earle, C.C., Willan, A., Viola, R., Coristine, M., Janz, T., & Glossop, R., 2004. Family caregiver burden: Results of a longitudinal study of breast cancer patients and their principal caregivers. *Canadian Medical Association Journal*, 170(12), pp. 1795–1801
.

Haas, B.L., 2006. Caring for community-dwelling older adults with diabetes: Perspectives from health care providers and caregivers. *Diabetes Spectrum*, 19(4), pp. 240-244.

Hancock, K., Chang, E., Chenoweth, L., Clarke, M., Carroll, A., & Jeon, Y-H., 2003. Nursing needs of acutely ill older people. *Journal of Advanced Nursing*, 44(5), pp. 507-16.

Hauser, J.M. & Kramer, B.J., 2004. Family caregivers in palliative care. *Clinical Geriatric Medicine*, 20(4), pp. 671-688.

Hays, R.D., Sherbourne, C. D., & Mazel, R. M., 1993. The RAND 36-Item Health Survey 1.0. *Health Economics*, 2(3), pp.217-27.

Hebert, R.S., Dang, Q., & Schulz, R., 2007. Religious beliefs and practices are associated with better mental health in family caregivers of patients with dementia: Findings from the reach study. *American Journal of Geriatric Psychiatry*, 15(4), pp. 292-300.

Hennessy, C.H., John, R., & Anderson, L.A., 1999. Diabetes education need of family members caring for American Indian elders. *The Diabetes Educator*, 25(5), pp. 747–754.

Henry, R., & Fayorsey, C., 2002. *Coping with pregnancy: experiences of adolescents in Ga Mashie, Accra*. Calverton, Maryland: ORC Macro.

Hepburn, K. W., Lewis, M., Narayan, S., Center, B., Tornatore, J., Bremer, K. L., & Kirk, L. N., 2005. Partners in Caregiving: A Psycho-education Program Affecting Dementia Family Caregivers' Distress and Caregiving Outlook. *Clinical Gerontologist*, 29(1), pp. 53-69.

Hermanns, M., & Mastel-Smith, B., 2012. Caregiving: A Qualitative Concept Analysis. *The Qualitative Report*, 17(75), pp. 1-18.

Hirst, M., 2002. Transitions to informal care in Great Britain during the 1990s. *Journal of Epidemiology and Community Health*, 56(8), pp. 579–587.

Ho, A., Collins, S., Davis, K. & Doty, M., 2005. *A Look at Working-Age Caregivers Roles, Health Concerns, and Need for Support* (Issue Brief). New York: The Commonwealth Fund.

Hopman, W.M., Harrison, M.B., Coo, H., Friedberg, E., Buchanan, M., & Van Den Kerkhof, E.G., 2009. Associations between chronic disease, age and physical and mental health status. *Chronic Disease in Canada*, 29(2), pp. 108-116.

Hudson, P. & Payne, S., 2009. The future of family caregiving: Research, social policy and clinical practice. In: P. Hudson, & S. Payne, eds. *Family Carers in Palliative Care: A Guide for Health and Social Care Professionals*. Oxford: Oxford University Press.

Huerta, E., & Grey, N., 2007. *Cancer control opportunities in low- and middle- income countries*. Washington, D.C.: National Academies Press.

Kagee, A., Roux M.L., & Dick, J., 2007. Treatment Adherence among primary care patients in a historically disadvantage community in South Africa. A qualitative study. *Journal of Health Psychology*, 12(3), pp. 444-460.

Kaufman, J.S., Owoaje, E.E., James, S.A., Rotimi, C.N., & Cooper, R.S., 1996. Determinants of hypertension in West Africa: Contribution of anthropometric and dietary factors to urban-rural and socioeconomic gradients. *American Journal of Epidemiology*. 143(12), pp. 1203-1218.

Kessler, R.C., Barker, P.R., Colpe, L.J., Epstein, J.F., Gfroerer, J.C., Hiripi, E., Howes, M.J., Normand, S.L.T., Manderscheid, R.W., Walters, E.E., and Zaslavsky, A.M., 2003. Screening for serious mental illness in the general population. *Archives of General Psychiatry*. 60(2), pp. 184-189.

Kiecolt-Glaser, J., Glaser, R., Gravenstein, S., Malarkey, W.B. & Sheridan, J., 1996. Chronic stress alters the immune response to influenza virus vaccine in older adults. *Proceedings of the National Academy of Sciences of the United States of America*, 93(7), pp. 3043-3047.

Kiecolt-Glaser, J.K., Dura, J.R., Speicher, C.E., Trask, O.J., & Glaser, R., 1991. Spousal caregivers of dementia victims: Longitudinal changes in immunity and health. *Psychosomatic Medicine*, 53(4), pp. 345-362.

Kiecolt-Glaser, J.K., Glaser, R., Shuttleworth, E.C., Dyer, C.S., Ogrocki, P., & Speicher, C.E., 1987. Chronic stress and immunity in family caregivers of Alzheimer's disease victims. *Psychosomatic Medicine*, 49(5), pp. 523-535.

Kiecolt-Glaser, J.K., Marucha, P.T., Malarkey, W.B., Mercado, A.M. & Glaser, R., 1996. Slowing of wound healing by psychological stress. *Lancet*, 346(8984), pp. 1194-1196.

Kilson, M., 1974. *African urban kinsmen: The Ga of Central Accra*. London: Hurst Publishers.

Kim, Y., and Schulz, R., 2008. Family caregivers' strains: comparative analysis of cancer caregiving with dementia, diabetes, and frail elderly caregiving. *Journal of aging and health*, 20(5), pp. 483-503.

Kramer, B. J., 1993. Marital history and prior relationship as predictors of positive and negative outcomes among wife caregivers. *Family Relations*, 42, pp. 367-375.

Kratzer, J., 2012. Structural barriers to coping with type 1 diabetes mellitus in Ghana: Experiences of diabetic youth and their families. *Ghana Medical Journal*, 46(2), pp. 39-45.

Lackey, N.R., & Gates, M.F., 2001. Adults' recollections of their experiences as young caregivers of family members with chronic physical illnesses. *Journal of Advanced Nursing*, 34(3), pp. 320-328.

Lee, S., Colditz, G.A., Berkman, L.F., & Kawachi, I., 2003. Caregiving and risk of coronary heart disease in U.S. women: A prospective study. *American Journal of Preventive Medicine*, 24(2), pp. 113-119.

Lin, I-F., Fee, H. R., & Wu, H-S., 2012. Negative and Positive Caregiving Experiences: A closer look at the intersection of gender and relationship. *Family Relations*, 61(2), pp. 343–358.

Lua, P.L. & Mustapha, N., 2012. Mental health-related experiences and challenges of informal HIV/AIDS caregivers: A brief review and analysis. *Journal of Psychiatry*, 13(2).

Lutzsky, S. M., & Knight, B. G., 1994. Explaining gender diferrences in caregiver distress: The roles of emotional attentiveness and coping styles. *Psychology and Aging*, 9(4), pp. 513-519.

Maas, J., Verheij, R.A., Groenewegen, P.P., de Vries, S., Spreeuwenberg, P., 2006. Green space, urbanity, and health: how strong is the relation? *Journal of Epidemiology and Community Health*, 60(7), pp. 587–592.

Magnusson, R.S., 2009. Rethinking global health challenges: Towards a ‘global compact’ for reducing the burden of chronic disease. *Public Health*, 123(3), pp. 265–274.

Manuh, T., & Quashigah, K., 2005. Legal and Ethical Issues in the Care of of the Seriously Ill in Ghana. In: C. Oppong, P. Antwi, and K. Waerness, eds. 2009. *Care of the seriously sick and dying: Perspective from Ghana.* Bergen: BRIC. Ch.3.

Marks, N.F., Lambert, J.D., & Choi, H., 2002. Transitions to caregiving, gender, and psychological well-being: A prospective U.S. national study. *Journal of Marriage and Family*, 64(3), 657-667.

Martire, L. M., Keefe, F. J., Schulz, R., Ready, R., Beach, S. R., Rudy, T. E., & Starz, T. W., 2006. Older spouses’ perceptions of partners’ chronic arthritis pain: Implications for spousal responses, support provision, and caregiving experiences. *Psychology and Aging*, 21, pp. 222-230.

Maslow, K., 2011. Dementia, diabetes and family caregiving. *Aging & Mental Health*, 15(8), pp. 933–935.

Maxwell, D., Levin, C., Armar-Klemesu, M., Ruel, M., Morris, S., & Ahiadeke, C., 2000. *Urban livelihoods and food and nutrition security in Greater Accra, Ghana*. IFPRI Research Report 112. Washington, D.C.: International Food Policy Research Institute.

Mba, C. J., 2010. Population ageing in Ghana: research gaps and the way forward. *Journal of Aging Research*, 2010, pp. 1-8.

McGrath, E. E., Keita, G. P. E., Strickland, B. R., & Russo, N. F. E., 1992. *Women and Depression: Risk Factors and Treatment Issues*. Washington, D.C.: American Psychological Association.

Miller, B., & Lawton, M., 1997. Symposium: positive aspects of caregiving. *The Gerontologist*, 37(2), pp. 216–217.

Miller, D.B., & Townsend, A., 2005. Urban hassles as chronic stressors and adolescent mental health: the urban hassles index. *Brief Treatment and Crisis Intervention*, 5(1), pp. 85-94.

Mitchell, M.M., & Knowlton, A., 2009. Stigma, disclosure, and depressive symptoms among informal caregivers of people living with HIV/AIDS. *AIDS Patient Care and STDs*, 23(8), pp. 611-7.

Montgomery, R.J.V., Rowe, J.M., & Kosloski, K., 2007. Family caregiving. In: J. A. Blackburn & C. N. Dulmus, eds. *Handbook of Gerontology: Evidence-Based Approaches to Theory, Practice, and Policy*. New Jersey: John Wiley & Sons.

Morimoto, T., Schreiner, A. S, & Asano, H., 2003. Caregiver burden and health-related quality of life among Japanese stroke caregivers. *Age and Aging*, 32(2), pp. 218-223.

Mui, A. C., 1992. Understanding caregiving impact on women caregivers of frail elderly: A United States national study. Hong Kong Journal of Gerontology, 6(2), 22-33.

Murray C., & Lopez, A., 1996. *The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020*. Global burden of disease and Injury Series, Vol. 1. Cambridge: Harvard University Press.

Mwinituo, P.P., and Mill, J.E., 2006. Stigma Associated With Ghanaian Caregivers of AIDS Patients. *Western Journal of Nursing Research*, 28(4), pp. 369-382.

National Academy of Sciences, 2006. Aging in Sub-Saharan Africa: Recommendations for Furthering Research. In: B. Cohen, and J. Menken, eds. 2006. *Aging in Sub-Saharan Africa: Recommendations for Furthering Research*. Washington, D.C.: The National Academic Press. Ch. 1. Available: http://www.nap.edu/catalog/11708.html. [Accessed Dec., 2012].

National Alliance for Caregiving & AARP, 2004. *Caregiving in the U.S.* Washington, DC: National Alliance for Caregiving.

National Alliance for Caregiving & Evercare, 2006. *Evercare Study of Caregivers in Decline: A Close-up Look at the Health Risks of Caring for a Loved One*. Bethesda, Maryland: National Alliance for Caregiving.

National Alliance for Caregiving (NAC), 2009. Caregiving in the United States, 2009. Available: http:// www.caregiving.org/data/CaregivingUSAllAgesExec-Sum.pdf. [Accessed Dec., 2012].

National Research Council (US) Committee on Population, 2006. Aging in Sub-Saharan Africa: Recommendations for Furthering Research. In: B. Cohen, & J. Menken, eds. 2006. *Aging in Sub-Saharan Africa: Recommendations for Furthering Research.* Washington, D.C.: The National Academic Press. Ch. 1. Available at: http://www.ncbi.nlm.nih.gov/books/NBK20296/ [Accessed Dec., 2012].

Narayan, S., Lewis, M., Tornatore, J., Hepburn, K., & Corcoran-Perry, S., 2001. Subjective responses to caregiving for a spouse with dementia. *Journal of Gerontological Nursing*, 27(3), pp. 19-28.

Navaie-Waliser, M., Feldman, P.H., Gould, D.A., Levine, C.L., Kuerbis, A.N. & Donelan, K., 2002. When the caregiver needs care: The plight of vulnerable caregivers. *American Journal of Public Health*, 92(3), pp. 409–413.

Neri, A.L., Yassuda, M.S., Fortes-Burgos, A.C.G., Mantovani, E.P., Arbex, F.S., Torres, S.V.S., Perracini, M.R.,& Guariento, M.E., 2012. Relationships between gender, age, family conditions, physical and mental health, and social isolation of elderly caregivers. *International Psychogeriatric Association*, 24(3), pp. 472-83.

Neugarten, B. L., 1969. Continuities and discontinuities of psychological issues into adult life. *Human Development*, 12(2), 121–130.

Nightingale, M.C., 2003. Religion, spirituality, and ethnicity: What it means for caregivers of persons with alzheimer's disease and related disorders. *Dementia*, 2(3), pp. 379-391.

Oppong, C., Antwi, P., & Waerness, K., eds. 2009. *Care of the seriously sick and dying: Perspective from Ghana.* Bergen: BRIC.

Owusu, S.K., 2005. Care of the terminally Ill in Ghana: A Physician's Perspective. In: C. Oppong, P. Antwi, and K. Waerness, eds. 2009. *Care of the seriously sick and dying: Perspective from Ghana.* Bergen: BRIC. Ch.2.

Patterson, T. L., & Grant, I., 2003. Interventions for caregiving in dementia: Physical outcomes. *Current Opinion in Psychiatry*, 16(6), pp. 629-633.

Pearlin, L. K., Mullan, J. T., Semple, S. J., & Skaff, M. M., 1990. Caregiving and the stress process: An overview of concepts and their measures. *Gerontologist*, 30(5), pp. 583-594.

Phaladze, N.A., 2001. The plight of family caregivers in home based care in Botswana. *Botswana Notes and Records*, 33, pp. 73-81.

Picot, S. J., Debanne, S. M., Namazi, K. H., & Wykle, M. L., 1997. Religiosity and perceived rewards of black and white caregivers. *The Gerontologist*, 37(1), pp. 89-101.

Pillemer, K, Suitor, J. H., & Wethington, E., 2003. Integrating theory, basic research, and intervention: Two case studies from caregiving research. *The Gerontologist*, *43*(1), pp. 19-28.

Pinquart, M., & Sörensen, S., 2003a. Differences between caregivers and non-caregivers in psychological health and physical health: A meta-analysis. *Psychological Aging*, 18(2), pp. 250-267.

Pinquart, M., & Sörensen, S., 2003b. Associations of stressors and uplifts of caregiving with caregiver burden and depressive mood: A meta-analysis. *Journal of Gerontology*, 58(2), pp. 112-128.

Pinquart, M., & Sörensen, S., 2007. Correlates of physical health of informal caregivers: A meta-analysis. *The Journals of Gerontology Series B*: *Psychological Sciences and Social Sciences*, 62(2), pp. 126–37.

Pirl,W.F., 2004. Evidence report on the occurrence, assessment, and treatment of depression in cancer patients. *Journal of the National Cancer Institute Monographs*, 32, pp. 32–39.

Pitkeathley, B., 1989. *"It's my Duty Isn't it?"*. London: Souvenir Press.

Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, 2011. *World Population Prospects: The 2010 Revision and World Urbanization Prospects: The 2011 Revision*. Available at: http://esa.un.org/unpd/wup/unup/p2k0data.asp [Accessed Nov., 2012].

Population Reference Bureau (PRB), (2012). World Population Data Sheet. Available at: http://www.prb.org/Publications/Datasheets/2012/world-population-data-sheet/data-sheet.aspx. [Accessed Feb., 2013].

Population Reference Bureau (PRB). (2008). World Population Data Sheet. Available at: http://www.prb.org/pdf08/08WPDS_Eng.pdf. [Accessed Feb., 2013].

Population Research and Outcome Studies Unit, 2007. *The health and wellbeing of adult family carers in South Australia: An epidemiological analysis 1994-2004*. Adelaide: Department of Health.

Ramashala, M.F., 2002. *Living arrangements, poverty and the health of older persons in Africa*. New York: United Nations.

Rossi, P. G., Beccaro, M., Miccinesi, G., Borgia, P., Costantini, M., Chini, F., Baiocchi, D., De Giacomi, Grimaldi, M., Montella, M., & the ISDOC Working Group. (2007). Dying of cancer in Italy: impact on family and caregiver. The Italian survey of dying of cancer. *Journal of Epidemiology and Community Health*, 61(6), pp. 547-554.

Rosswurm, M., Larrabee, J. H., & Zhang, J., 2002. Training family caregivers of dependent elderly adults through on-site and communications program. *Journal of Gerontological Nursing*, 28(7), pp. 27-38.

Roth, D.L., Perkins, M., Wadley, V.G., Temple, E.M., William, E., & Haley, W.E., 2009. Family Caregiving and emotional strain: Associations with quality of life in a large national sample of middle-aged and older adults. *Quality of Life Research*, 18(6), pp. 679–688.

Rowe, J. W., & Kahn, R. L., 1998. *Successful aging*. New York: Pantheon.

Sackey, B. M., 2005. Family Networking and Relationships in the Care of the Seriously Ill. In: C. Oppong, P. Antwi, and K. Waerness, eds. 2009. *Care of the seriously sick and dying: Perspective from Ghana.* Bergen: BRIC. Ch.7.

Sanjo, M., Morita, T., Miyashita, M., Shiozaki, M.,; Sato, K.,; Hirai, K., Shima, Y., & Uchitomi, Y., 2009. Caregiving Consequences Inventory: a measure for evaluating caregiving consequences from the bereaved family member's perspective. *Psychology*, 18(6), pp. 657-66.

Savage, S., & Bailey, S., 2004. The impact of caring on caregivers' mental health: a review of the literature. Australian Health Review, 27(1), pp. 103-109.

Scharlach, A., 2008. Historical overview. *Journal of Social Work Education,* 44(3), pp. 17-26.

Scherbring, M., 2002. Effect of caregiver perception of preparedness on burden in an oncology population. *Oncology Nursing Forum*, 29(6), pp. 70-76.

Schulz, R. & Beach, S.R., 1999. Caregiving as a risk factor for mortality: The caregiver health effects study. *Journal of the American Medical Association*, 282(23), pp. 2215-2219.

Schulz, R., & Williamson, G., 1991. A 2-year longitudinal study of depression among Alzheimer's caregivers. *Psychology and Aging*, 6(4), pp. 569-578.

Schulz, R., Visintainer, P., & Williamson, G. M. 1990. Psychiatric and physical morbidity effects of caregiving. *Journal of Gerontological Sciences*, 45(5), pp. 181-191.

Schulz, R., Newsom, J., Mittelmark, M., Burton, L., Hirsch, C., & Jackson, S., 1997. Health effects of caregiving: The caregiver health effects study: An ancillary study of the cardiovascular health study. *Annals of Behavioral Medicine*, 19(2), pp. 110-116.

Schumacher, K. L., Stewart, B. J., Archbold, P. G., Caparro, M., Mutale, F., & Agrawal, S., 2008. Effects of caregiving demand, mutuality, and preparedness on family caregiver outcomes during cancer treatment. *Oncology Nursing Forum*, 35(1), pp. 49-56.

Schumacher, K.L., Stewart, B.J., Archbold, P.G., Dodd, M.J., & Dibble, S.L., 2000. Family caregiving skill: Development of the concept. *Research in Nursing and Health,* 23(3), pp. 191-203.

Shaw, W.S., Patterson, T.L., Semple, S.J., Ho, S., Irwin, M.R., Hauger, R.L., & Grant, I., 1997. Longitudinal analysis of multiple indicators of health decline among spousal caregivers. *Annals of Behavioral Medicine,* 19(2), pp. 101-109.

Sherwood, P.R., Given, B.A., Donovan, H., Baum, A., Given, C.W., Bender, C.M., & Schulz, R., 2008. Guiding research in family care: A new approach to oncology caregiving. *Psycho-Oncology*, 17(10), pp. 986–996.

Siefert, M. L., Williams, A., Dowd, M. F., Chappel-Aiken, L., & McCorkle, R., 2008. The caregiving experience in a racially diverse sample of cancer family caregivers. *Cancer Nursing*, 31(5), pp. 399-407.

Silliman, R.A., Bhatti, S., Khan, A., Dukes, K.A., & Sullivan, L.M., 1996. The care of older persons with diabetes mellitus: Families and primary care physicians. *Journal of the American Geriatrics Society*, 44(11), pp. 1314-21.

Sims-Gould, J., & Martin-Matthews, A., 2007. Family Caregiving or Caregiving Alone: Who Helps the Helper?. *Canadian Journal on Aging*, 26(1), pp. 27-45.

Singer, M.A., Hopman, W.M., & MacKenzie, T.A., 1999. Psychological adjustment in four chronic medical conditions. *Quality of Life Research*, 8, pp. 687–91.

Singh, D., Chaudoir, S.R., Escobar, M.C., & Kalichman, S., 2011. Stigma, burden, social support, and willingness to care among caregivers of PLWHA in home based care South Africa. *AIDS Care*, 23(7), pp. 839–845.

Smith, T. B., McCullough, M. E., Poll, J., 2003. Religiousness and depression: evidence for a main effect and the moderating influence of stressful life events. *Psychological Bulletin*, 129(4), pp. 614-636.

Tarimo, E.A.M., Kohi, T.W., Outwater, A., & Blystad, A., 2009. Gender roles and informal care for patients with AIDS: A qualitative study from an urban area in Tanzania. *Journal of Transcultural Nursing*, 20(1), pp. 61-68.

Teel, C.S. & Press, A.N., 1999. Fatigue among elders in caregiving and noncaregiving roles. *Western Journal of Nursing Research*, 21(4), pp. 498-520.

Teri, L., Logsdon, R.G., Uomoto, J., et al., 1997. Behavioral treatment of depression in dementia patients: a controlled clinical trial. *The Journals of Gerontology Series B*: *Psychological Sciences and Social Sciences*, 52(4), pp. 159-166.

Traeger, L., Greer, J.A., Fernandez-Robles, C., Temel, J.S., and Pirl, W.F., 2012. Evidence-based treatment of anxiety in patients with cancer. *Journal of Clinical Oncology*, 30(11), pp. 1197-1205.

Tsai, P-F., & Jirovec, M. M. (2005). The relationships between depression and other outcomes of chronic illness caregiving. *BMC Nursing*, 4(1), pp. 3.

UNAIDS, 2000. *Caring for carers: Managing stress in those who care for people with HIV and AIDS*. UNAIDS Best practice collection. Geneva: UNAIDS.

United Nations (UN), 2002. Population Division: *World Urbanization Prospects: The 2001 Revision.* New York: United Nations.

Van der Geest, S. 2002. Respect and reciprocity: Care of elderly people in rural Ghana. *Journal of Cross-Cultural Gerontology,* 17(1), pp. 3–31.

Van der Geest, S., 2005. End-of-life Care in Ghana and the Netherlands: Good Death, Bad Death and Euthanasia. In: C. Oppong, P. Antwi, and K. Waerness, eds. 2009. *Care of the seriously sick and dying: Perspective from Ghana.* Bergen: BRIC. Ch.10.

Van Houtven, C. H., Voils, C.I., & Weinberger, M., 2011. An organizing framework for informal caregiver interventions: detailing caregiving activities and caregiver and care recipient outcomes to optimize evaluation efforts. *BMC Geriatrics*, 11, pp. 77.

Velkoff, V.A., & Kowal, P.R., 2006. Aging in Sub-Saharan Africa: The Changing Demography of the Region. In: B. Cohen, and J. Menken, eds. 2006. *Aging in Sub-Saharan Africa: Recommendations for Furthering Research.* Washington, D.C.: The National Academic Press. Ch. 2. Available at: http://www.nap.edu/catalog/11708.html [Accessed Dec., 2012].

Vitaliano, P. P., Zhang, J., & Scanlan, J., 2003. Is caregiving hazardous to one's physical health? A meta-analysis. *Psychological Bulletin*, 129(6), pp. 946-72.

von Kanel, R., Mausbach, B.T., Patterson, T.L., Dimsdale, J.E., Aschbacher, K., Mills, P.J., Ziegler, M.G., Ancoli-Israel, S., & Grant, I., 2008. Increased Framingham coronary heart disease risk score in dementia caregivers relative to non-caregiving controls. *Gerontology*, 54(3), pp. 131-137.

Walker, A. J., Pratt, C.C., & Eddy, L., 1995. Informal Caregiving to Aging Family Members: A Critical Review. *Family Relations*, 44(4), pp. 402-411.

Walker, A., 2011. *Perceptions of family cancer caregivers in Tanzania: A qualitative study*. Mph. Unpublished. University of Pittsburgh.

Walker, A.J., Pratt, C.C., & Eddy, L., 1995. Informal caregiving to aging family members: A critical review. *Family Relations*, 44(4), pp. 402-411.

Wight, R. G., Aneshensel, C. S., & LeBlanc, A. J., 2003. Stress buffering effects of family support in AIDS caregiving. *AIDS Care*, 15(5), pp. 595-613.

Williams, J. K., Ayres, L., Specht, J., Sparbel, K., & Klimek M. L., 2009. Caregiving by teens for family members with Huntington disease. *Journal of Family Nursing*, 15(3), pp. 273-294.

Wissler, R.W., & Robert, L., 1996. Ageing and cardiovascular diseases: A summary of the English minister International Arteriosclerosis symposium. *Circulation*, 93(9), pp. 1608-12.

World Health Organization, 2004a. *World report on knowledge for better health: Strengthening health systems*. Geneva: Switzerland.

World Health Organization, 2004b. *Developing Integrated Response of Health Care Systems to Rapid Population Ageing: Intra II Ghana National Report*. Geneva: Switzerland.
World Health Organization, 2005. Preventing chronic diseases: a vital investment: WHO global report. Geneva: Switzerland.

Wu, S., Wang, R., Zhao, Y., Ma, X., Wu, M., Yan, X., & He, J., 2013. The relationship between self-rated health and objective health status: a population-based study. BMC Public Health, 13, pp. 320.

Yabroff, K.R. & Kim, Y., 2009. Time costs associated with informal caregiving for cancer survivors. *Cancer*, 115(18), pp. 4362-4373.

Yee, J.L., & Schulz, R., 2000. Gender differences in psychiatric morbidity among family caregivers. A review and analysis. *The Gerontologist*, 40(2), pp. 147-164.

Yeh, S-H., Johnson, M. A., & Wang, S-T., 2002. The changes in caregiver burden following nursing home placement. *International Journal of Nursing Studies*, 39(6), pp. 591–600.

Zarit, S., 2006. Assessment of Family Caregivers: A Research Perspective. In: Family Caregiver Alliance, ed. *Caregiver Assessment: Voices and Views from the Field*. Report from a National Consensus Development Conference (Vol. II) (pp. 12 – 37). San Francisco: Family Caregiver Alliance.

APPENDICES

Appendix A

Table 1: Summary of selected studies on challenges experienced by caregivers

Author(s)/Year	Site of study	Respondents (sample size, sex, age)	Conceptual framework/Research questions	Research Method	Key findings
Grunfeld et al. (2004)	Canada (Ontario)	89, Women, 19–82.	N/A	Quantitative	• More caregivers were anxious and depressed • Caregivers had a higher level of perceived burden
Cho et al. (2006)	Korea	103, Male and female, N/A.	N/A	Quantitative	• Most family caregivers had poor sleep quality
Teel & Press (1999)	United States (Mid-Western medical center)	125, Male and female, Early 70s.	N/A	Quantitative	• Caregivers reported more fatigue, less energy, and more sleep difficulty than did control participants
Lee, Colditz, Berkman & Kawachi (2003)	United States	54,412, Women, 46-71.	N/A	Quantitative	• No evidence of increased coronary heart disease risk among caregivers compared to non-caregivers

von Kanel et al. (2008)	United States (San Diego Alzheimer's Disease Research Center)	106, Male and female, 55 years or older.	N/A	Quantitative	• Caregivers had higher Framingham coronary heart disease risk score than non-caregivers • Caregivers had a higher blood pressure risk score than non-caregivers
Kiecolt-Glaser et al. (1987)	United States (Ohio State)	68, Male and female, 34-82.	N/A	Quantitative	• Caregivers appear more distressed and had poorer immune function than non-caregivers
Schulz & Beach (1999)	United States	819, Male and female, 66-96.	N/A	Quantitative	• Caregiving is an independent risk factor for mortality • Caregivers who provide support and reported caregiving strain are 63% more likely to die within 4 years than non-caregivers
Christakis & Allison (2006)	United States	518,240, Male and female, 65-98.	N/A	Quantitative	• Hospitalization of a spouse is associated with an increased risk of death, for both men and women

Lin, Fee & Wu (2012)	United States	1,552, Male and female, 65 or older	N/A	Quantitative	• Female and adult-child caregivers reported having more negative experiences than male and spouse caregivers • Wife caregivers were least likely to report positive experiences • Care recipients' problem behavior and dependency contributed to caregivers' negative experiences • Reciprocal help, the availability of other caregivers, and support from friends or relatives contributed to caregiver's positive experiences
Walker (2011)	Tanzania	15, Male and female, 35-77.	N/A	Qualitative	• Caregivers reported financial difficulty as the patient was often the main source of income for the household

Given et al. (2004)	United States (Mid-Western)	152, Male and female, 25-84.	• What are the effects of caregiver age, sex, education, relationship to the patient, employment status, reports of patients' symptoms, patient cancer type, stage of cancer, and time from the patient's diagnosis to death, on caregiver depressive symptoms • The primary framework was based on the work of Given & Given, (1991, 1994)	Quantitative	• Caregivers who were adult children of patients and who were employed reported high levels of depressive symptoms. • Feeling abandoned was more prevalent in female, non-spouse, and adult children caregivers • Caregivers whose patients died early following diagnosis reported the highest depressive symptoms, burden, and impact on schedule.
Morimoto, Schreiner & Asano (2003)	Japan	100, Male and female, N/A.	N/A	Quantitative	• Increased caregiving hours was significantly related to increased burden • Increased burden was significantly related to decreased health-related quality of life among stroke caregivers

Tsai and Jirovec (2005)	United States	507, Male and female, 60 years and older.	N/A	Quantitative	• Hours of care, age, and gender predicted caregivers' outcomes • Age was also found to predict physical function • Social support had no impact on perceived caregiver stress
Marks, Lambert, & Choi (2002)	United States	8,286, Male and female, 19 and older.	N/A	Quantitative	• Depressive symptoms and other negative effects were found to be associated with caregiving • The transition to caregiving for primary kin was associated with an increase in depressive symptoms • Caregiving leads to both negative and positive dimensions of psychological well-being
Kiecolt-Glaser et al. (1991)	United States	138, Male and female, N/A.	N/A	Quantitative	• Caregivers showed decrements relative to controls on three measures of cellular

					immunity • Caregivers reported significantly more days of infectious illness, primarily upper respiratory tract infections • Caregivers had a much greater incidence of depressive disorders than controls
Kiecolt-Glaser et al. (1996).	United States	64, Male and female, NA.	N/A	Quantitative	• Caregivers showed a poorer antibody response following vaccination relative to control subjects • Caregivers showed clear deficits relative to controls in both their cellular and humoral immune responses to influenza virus vaccine
Glaser and Kiecolt-Glaser (1997)	United States	129, Male and female, N/A.	N/A	Quantitative	• Caregivers had significantly higher antibody titers to the total viral antigen than controls • Caregivers had a poorer HSV-1

					specific T-cell response than controls • Caregivers reported significantly more days ill than controls
Kiecolt-Glaser et al. (1996)	United States	26, Women, 47-81 years.	N/A	Quantitative	• Complete wound healing took significantly longer in caregivers • Caregivers had a significantly poorer response to lipopolysaccharide • Caregivers produced less interleukin-1β in response to stimulation
Akintola (2010)	South Africa (KwaZulu-Natal Province)	55, Male and female, 19-55 years.	• Choice and social exchange theory	Qualitative	• Volunteers report experiencing a number of intrinsic and extrinsic rewards as part of their caregiving experiences
Singh, Chaudoir, Escobar & Kalichman, (2011)	South Africa (KwaZulu-Natal Province)	358, Male and female, N/A.	N/A	Quantitative	• The experiences of personal discrimination and severe caregiver burden were low but HIV/AIDS stigma was high.

					• Caregivers in home based care reported receiving adequate support from nurses and community care workers
Akintola (2008)	South Africa	20, Male and female, 27-55 years.	N/A	Qualitative	• Volunteers experienced stigma and discrimination • The physical condition of patients was a stressor for volunteers.
Mwinituo & Mill (2006)	Ghana (Accra)	15, Male and female, 12-80 years.	N/A	Qualitative	• Stigma associated with AIDS resulted in caregivers providing care to their relatives in absolute secrecy • Loss of job due to discrimination • Caregivers received limited support from the extended family members • Caregivers often experienced disregard, disrespect, and a lack of sympathy when interacting with health care workers

Tarimo, Kohi, Outwater & Blystad (2009)	Tanzania (Dar es Salaam)	20, Male and female, 16-70 years.	N/A	Qualitative	• Caregivers experienced physical, social, and economic hardships.
Mitchell and Knowlton (2009)	United States (Baltimore)	207, Male and female, 18 and above.	N/A	Quantitative	• Stigma was associated with higher levels of depressive symptoms among HIV caregivers • Greater disclosure of caregiving status was associated with fewer depressive symptoms
Ahn et al. (2012)	United States (Texas)	1071, Male and female, 60 years and older.	N/A	Quantitative	• Caregivers were more likely to be physically healthy • Social support was not associated with physical health • Better physical and mental health outcomes were common for caregivers and non-caregivers who reported having more resources
Kim, & Schulz, 2008	United States	606, Male and female, 18 years and older	• Traditional stress-coping perspective and Illness,	Quantitative	• Caregiving involvement and caregiving outcomes

			appraisal, and coping perspective		differed among the caregiving groups • Caregiver's emotional stress was significantly associated with older age, female gender, greater caregiving burden, and currently providing care. • Greater levels of physical strain were significantly associated with older age, female gender, lower education, and greater caregiving burden.
Hopman et al. 2009.	Canada (Ontario, Manitoba and Saskatchewan)	2418, Male and female, 25 years and Above	N/A	Quantitative	• Female gender and comorbid conditions were associated with poorer health-related quality of life • Increased age was associated with poorer physical component summary and better mental component summary

Foley, Tung, & Mutran, 2002.	United States (North Carolina)	481, Males and female, 65 years and older	Stress and coping framework	Quantitative	• Stronger preference for family care was associated with more self-gain among Whites only • Role conflict was unrelated to self-gain • Role conflict was related to more self-loss for African Americans and Whites
Neri et al., 2012.	Brazil (Campinas)	176, Males and females, 65 years and older	N/A	Quantitative	• Gender, age, income and low perceived social support were associated with adverse health and social outcomes

Appendix B

Table 4.4: Distribution of respondents by occupational types

Occupational Types	Frequency	Percentage
Professional/Technical/Managerial/Clerical	69	10.0
Sales and Services	367	53.2
Agriculture	14	2.0
Skilled and Unskilled Manual	226	32.8
Other	14	2.0
Total	**690**	**100**

Source: EDULINK Data, 2011.

Table 4.6: Distribution of respondents by occupational types

Occupational Status	Frequency	Percentage
Professional/Technical/Managerial/Clerical	76	10.6
Sales and Services	386	53.7
Agriculture	14	1.9
Skilled and Unskilled Manual	222	30.9
Other	21	2.9
Total	**719**	**100**

Source: EDULINK Data, 2011.

Table 4.7: Distribution of respondents by chronic condition

Chronic Condition	Frequency	Percentage
Stroke	5	6.8
Diabetes	5	6.8
Hypertension	37	50.7
Asthma	26	35.6
Total	**73**	**100**

Source: EDULINK Data, 2011.

Table 4.8: Distribution of respondents by multiple forms of care

Multiple Forms of Care	**Frequency**	**Percentage**
No Care	15	13.6
1	56	50.9
2	13	11.8
3	14	12.7
4	3	2.7
5	9	8.2
Total	**110**	**100**

Source: EDULINK Data, 2011.