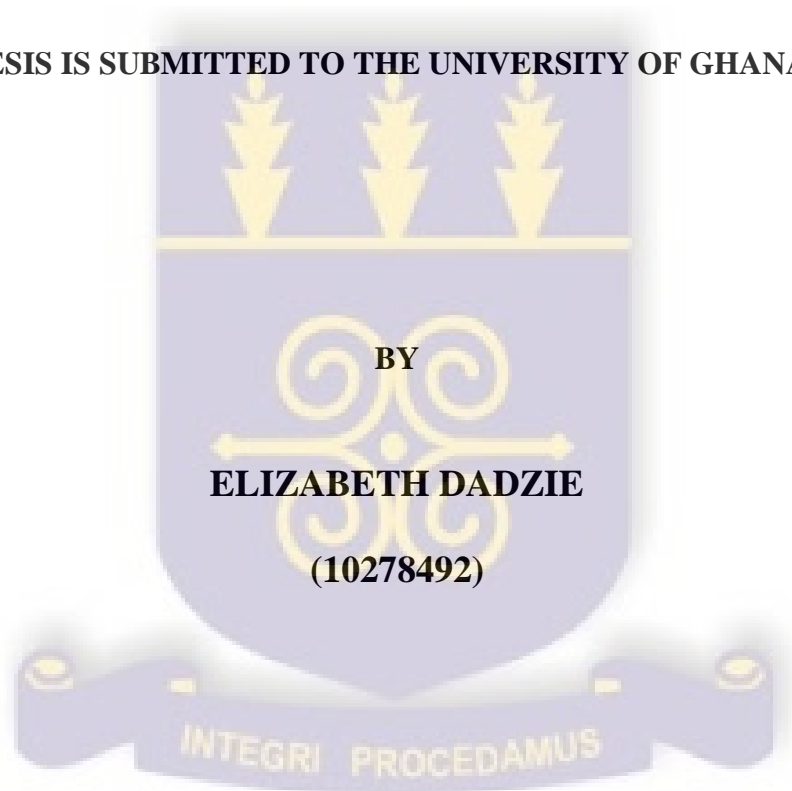


**PREDICTORS OF MENTAL HEALTH AMONG INFORMAL
CAREGIVERS OF STROKE PATIENTS**

THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON



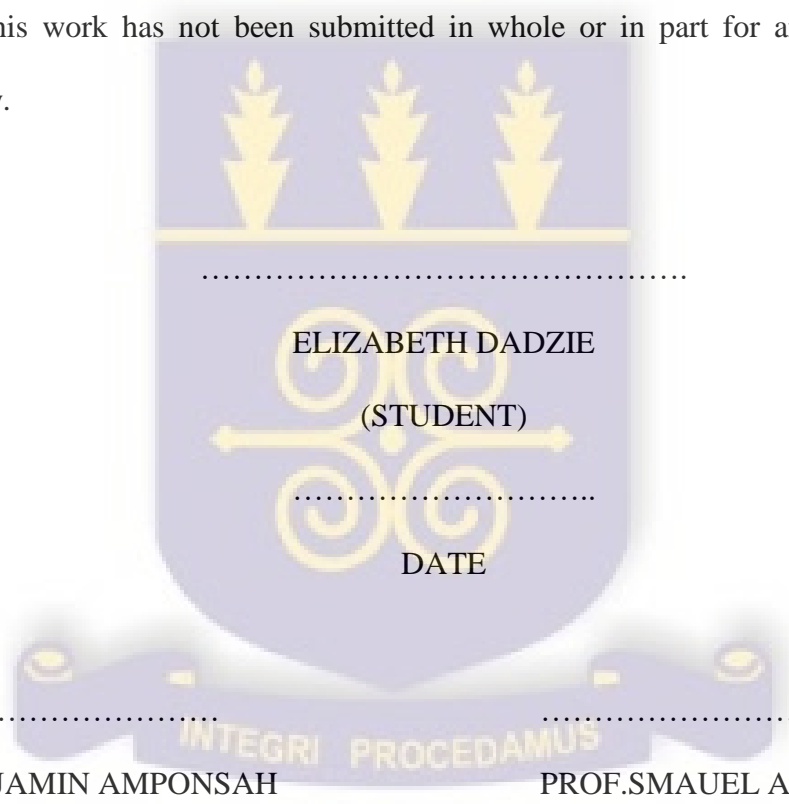
**IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF
MPHIL PSYCHOLOGY DEGREE**

JULY, 2015

Predictors of Mental Health Among Informal Caregivers of Stroke Patients

DECLARATION

I Elizabeth Dadzie wish to declare that except for reference and other citation, which have wholly been acknowledged, this work is originally done by me as a student after a research conducted under the supervision of Dr. Benjamin Amponsah and Prof. Samuel A. Danquah as part of satisfying my obligation to the Department of Psychology, University Of Ghana, Legon. This work has not been submitted in whole or in part for any degree of this University.



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Predictors of Mental Health Among Informal Caregivers of Stroke Patients

ABSTRACT

Learning to live with and take care of a family member with stroke is immensely complex and demanding. Without appropriate support and coping strategies, informal caregivers are at risk of their own general health decreasing thus becoming a patient themselves. The study therefore examined predictors of mental health among informal caregivers of stroke patients /survivors. A sample of one hundred (150) participants were purposively sampled using a cross sectional research design at the Korle-Bu Teaching Hospital. The results was analyzed using Independent samples t-Test, Pearson product moment r and multiple regression to identify and predict the relationships between the variables. The Findings suggest that informal caregivers of stroke patients and non-caregivers did not differ on psychological wellbeing. However, informal caregivers of stroke patients experienced psychological distress than the non-caregivers. Older and younger informal caregivers of stroke patients differed on psychological wellbeing (age predicted psychological distress). A positive significant relationship existed between negative religious coping and psychological wellbeing and a significant negative relationship with psychological distress. Stress did not moderate the relationship between social support, religious coping and psychological distress. Findings, implications and limitations are discussed in relation to theories and recommendations for future work.

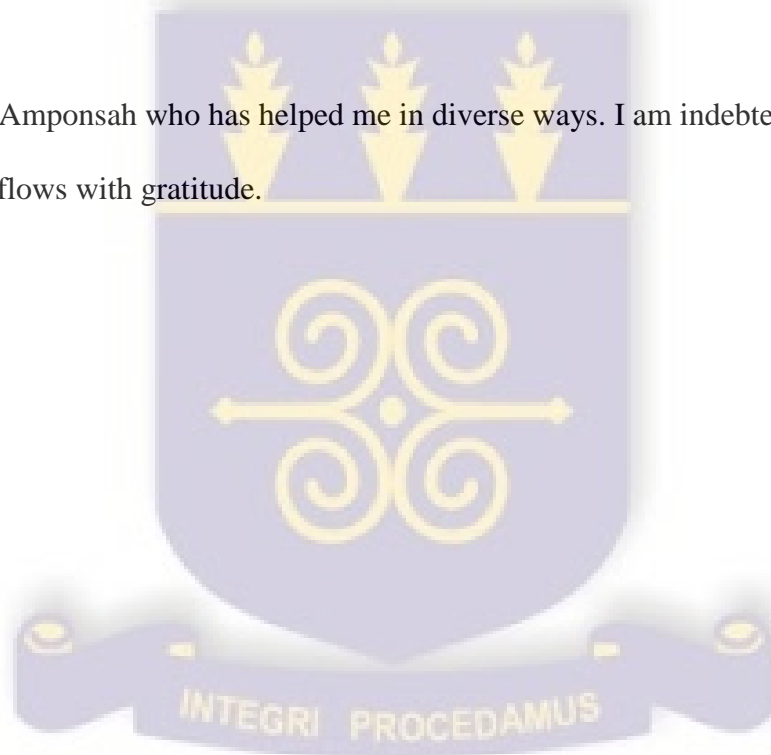
Predictors of Mental Health Among Informal Caregivers of Stroke Patients

DEDICATION

To God Almighty, may your name be praise, for it has not been by my strength or by might but the spirit of God that dwells within me.

To Miss Margaret Serwaah, my mother, the road of my life on campus has been long and windy and without your strength, upliftment and love it would all have ended along the way.

To Dr. B. Amponsah who has helped me in diverse ways. I am indebted to you and my heart overflows with gratitude.



Predictors of Mental Health Among Informal Caregivers of Stroke Patients

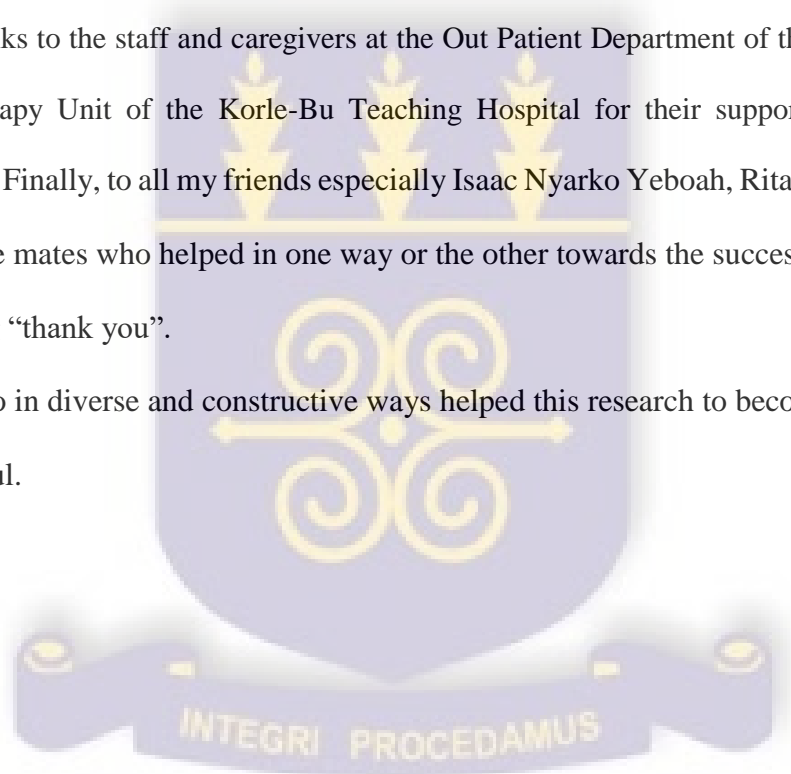
ACKNOWLEDGEMENT

I'm grateful to Almighty God for taking me through the studies successfully.

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Many thanks to the staff and caregivers at the Out Patient Department of the Stroke Unit and Physiotherapy Unit of the Korle-Bu Teaching Hospital for their support during my data collection. Finally, to all my friends especially Isaac Nyarko Yeboah, Rita Appiah-Danquah and course mates who helped in one way or the other towards the success of this research, I say a big “thank you”.

To all who in diverse and constructive ways helped this research to become successful I am grateful.



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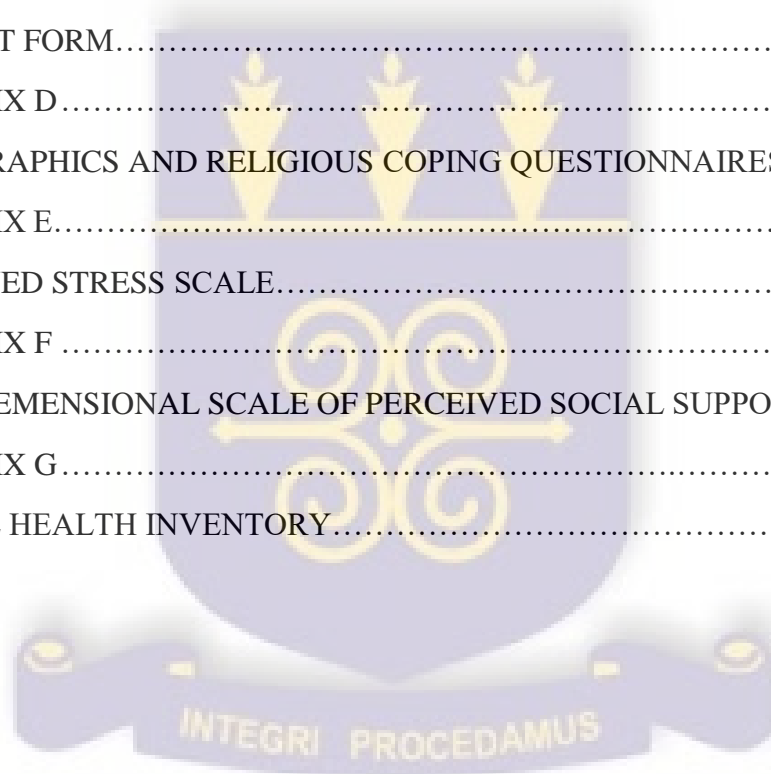
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CHAPTER ONE

INTRODUCTION

BACKGROUND OF THE STUDY

The World Health Organization (WHO, 2009) defines stroke as a rapidly developing clinical sign of focal or global disturbance of cerebral function, with symptoms lasting 24 hours or longer or leading to death with no apparent cause other than of vascular origin. This definition excludes Transient Ischemic Attack (TIA) which lasts less than 24 hours and is caused by subdural hemorrhage, tumors, poisoning or trauma. In other words, a stroke is caused by the interruption of the blood supply to the brain, usually because a blood vessel bursts or is blocked by a clot. This cuts off the supply of oxygen and nutrients, causing damage to the brain tissue (WHO, 2009).

This disturbance in the blood supply to the brain is due to either ischemia (lack of blood flow) or hemorrhage (Sims & Muyderman, 2010). Ischaemic can be broadly subdivided into thrombotic and embolic strokes. The common pathway of ischaemic stroke is lack of sufficient blood flow to perfuse cerebral tissue, due to narrowed or blocked arteries leading to or within the brain. In thrombotic stroke, narrowing is commonly the result of atherosclerosis (the occurrence of fatty plaques lining the blood vessels). Atherosclerosis may disrupt the blood supply by narrowing the lumen of the blood vessels leading to a reduction in blood flow, by causing the formation of blood clots within the vessel, or by releasing showers of small emboli through the disintegration of atherosclerotic plaques. In an embolic stroke, blood clots or debris from elsewhere in the body, typically the heart valves, travel through the circulatory system and block narrower blood vessels (Snell, 2006).

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Haemorrhagic strokes on the other hand, result in tissue injury by causing compression of brain tissue from an expanding haematoma which can distort and injure the tissues. This pressure may lead to a loss of blood supply to affected tissues with resulting infarction, and the blood released by brain haemorrhage appears to have direct toxic effects on brain tissue and vasculature. Intracerebral haemorrhage is caused by rupture of a blood vessel and accumulation of blood within the brain. This is commonly the result of blood vessel damage from chronic hypertension, vascular malformations, or the use medications associated with increased bleeding rates, such as anticoagulants, thrombolytics, and antiplatelet agents. Subarachnoid haemorrhage is the gradual collection of blood in the subarachnoid space of the brain dura, typically caused by trauma to the head or rupture of a cerebral aneurysm (National institute of Neurological Disorders and stroke, 1999).

Stroke symptoms typically start suddenly and the most common symptoms of a stroke are weakness or numbness of the face, arm or leg, often on one side of the body. Other symptoms include confusion, speech difficulties (speaking and understanding), difficulty seeing with one or both eyes, difficulty walking, dizziness, loss of balance or coordination, severe headache without known cause, fainting or unconsciousness. The effect of stroke depends on which part of the brain is injured and how severely it is affected. A very severe stroke can cause sudden death.

It is projected that by 2020 there will be 25 million deaths annually from cardiovascular disease worldwide, with up to 19 million deaths occurring in developing countries (Lemogoun, Degante & Bovet, 2005). The incidence rate for all strokes and for stroke subtypes vary widely between and within populations. In industrialized countries of

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Europe and North America where half of strokes occur before age 75 years, 5000 to 85,000 new cases of ischemic strokes occur yearly (Marsh & Keyrouz, 2010). The burden of stroke and other vascular diseases is likely to substantially increase over the next few decades in these lower income countries because of their expected health and demographic transition (Connor, Walker, Modi & Warlow, 2007). A study conducted by Nwosu et al., (1992) in Nigeria identified stroke as the leading cause of neurological admissions in most tertiary hospitals. Again studies conducted in South Africa, Togo and Tanzania suggest the prevalence of stroke to be between 200 and 300 per 100,000 (Connor et al., 2007; Ogunrin et al, 2007).

In Ghana, according to Wiredu and Nyame, (2001), cardiovascular diseases, particularly hypertension and stroke (cardiovascular accident) have become major causes of morbidity and mortality. Sixty-nine percent of stroke patients died in less than 24 hours after onset of stroke, with higher mortality in males than in females in all age groups. Agyemang, Attah-Adjepong, Owusu-Dabo, De-Graft Aikins and Addo, (2012) reported that in the Ashanti Region, the majority of stroke deaths occurred within the first seven days of admission.

A research done in the ten (10) regions of Ghana revealed that stroke was the fourth leading cause of death among in-patients of 32 hospitals (de-Graft Aikins, 2007) and one of the top cause of death at Komfo Anokye Teaching Hospital (Agyemang et al., 2012). High blood pressure was found to be the most consistent and powerful predictor of stroke and was causally involved in nearly 70% of all stroke cases (Agyemang et al., 2012).

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There are two major types of strokes and these are ischemic making up for 85% and haemorrhagic constituting 15% of all strokes (Albers, Amarenco, & Easton, 2004). Ischemic stroke can be defined as a sudden loss of function resulting from disruption of the blood supply to a part of the brain. It is also termed “brain attack”. Studies show that about 80% of all acute strokes are caused by cerebral ischemia which usually results from thrombotic or embolic occlusion of a cerebral artery (Albers et al., 2004; Smelter, Bare, Hinkle & Cheever 2007). On the other hand, haemorrhagic stroke is due to obstruction of a ruptured blood vessel or bleeding into the brain tissue, the ventricles or the subarachnoid space.

According to the American Heart Association (2007), people with high blood cholesterol are at a higher risk of having stroke and factors like socioeconomic background, low education and unhealthy lifestyle also contribute to stroke. Unhealthy lifestyles include excessive alcohol consumption, drug abuse, cigarette smoking and physical inactivity. Excessive consumption of alcohol increases the incidence of stroke. On the other hand, reduced consumption of alcohol is associated with reduced risk of developing coronary heart disease. According to Lemogoum, Degaute and Bovet (2005), cigarette smoking doubles the risk of one developing stroke. Studies have shown that while tobacco use in developed countries is on the decrease, the opposite is observed in developing countries.

Gender, genetic traits, ethnicity and age are non-modifiable risk factors of stroke. Morbidity of stroke increases with age and as a result, the chances of a person developing stroke doubles for each decade of life after 55 years (AHA, 2007). It had been reported that 95% of strokes are found in people aged 45 years and older and

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according to Gavras (2005), increasing age is the strongest risk factor for cerebral infarction and subarachnoid bleeding. This does not imply that stroke cannot occur in people below those ages. Scans occur in any age including fetuses (Stiles & Jernigan, 2010).

All these factors make stroke one of the major chronic illnesses worldwide and immediate admissions to hospital for treatment and rehabilitation is recommended. Most stroke survivors return to their own home after a hospital stay and a rehabilitation programme and many survivors are dependent upon informal caregivers (usually family members) to provide assistance with activities of daily living including dressing and toileting (Rothwell, Coull & Giles, 2004).

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 paid professionals (Antwi & Atobrah, 2005). For instance in Ghana, the family is the main institution which provides care for the sick people and this is due to several factors including uneven distribution of hospital and other medical facilities and shortage of health care professionals (Antwi, 2005; Opong, Antwi & Waerness, 2009).

Informal caregivers of stroke patients often have to cope with patients' physical and cognitive impairments, communication and behavioral changes, and emotional problems. Some informal caregivers do well in this situation and others often face a considerable burden with reports of health problems, a decline in social life, depression and high levels of strain (Barnett & McKenna, 2005; Visser-Meily, Van Heugten & Lindeman, 2006).

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Informal caregivers often neglect their own health and hide their health problems. Research has established that caregiving can result in a decline in physical and emotional health, increased depressive symptoms, and a decreased sense of well-being (Fatoye, 2006). These circumstances or situations faced by caregivers make them mentally unhealthy. The World Health Organization (WHO) defines mental health as a state of well-being in which every individual reaches his or her potential and can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to his/her community (WHO, 2009). Mental health is found to have various outcomes on the daily living of individuals and communities, thus improving mental health should be the goal of every individual and community (WHO, 2009). These mental health outcomes include: healthier lifestyles, better physical health, higher educational attainment, greater productivity and improved quality of life among other aspects of well-being (WHO, 2009).

PROBLEM STATEMENT

Family Caregiver Alliance (2006) revealed that family caregivers reported poorer physical health, higher mortality rates, high levels of frustration and stress than non-caregivers. This 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 adverse challenges experienced by informal caregivers, more than one-third of informal caregivers continue to offer intense care to others while suffering from poor health themselves (Navaie-waliser et al., 2002). These challenges can obstruct a

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caregiver's ability to provide care and can also affect the quality of life of both the patient and the informal caregiver. Again these problems can have a significant public health effect by decreasing the quality of life for the patient, cause premature death, and also emotionally, physically and economically impact families and communities at large (Lee, Colditz, Berkman & Kawachi, 2003).

Additionally, some studies have indicated that most informal caregivers are ill prepared for their role, provide care with little or no support, have little knowledge to deliver proper care and receive little guidance from formal health care providers (Caregivers Alliance, 2006). According to de-Graft Aikins (2007), Ghana's health systems are poorly equipped to address the growing chronic disease burden and therefore place significant burden of care on chronically ill individuals and their caregivers.

In light of this, it was therefore worthwhile to investigate the predictors of mental health among caregivers of stroke patients.

AIMS AND OBJECTIVES

The main aim of this study was to evaluate and assess the predictors of mental health among caregivers of stroke patients. Specifically, the objectives are:

1. To ascertain factors which contribute to optimum and poor mental health among caregivers of stroke patients.
2. To examine the association between caregiving and mental health.
3. To assess the relationship between duration of caregiving and levels of mental health
4. To explore the role of social support in mental health of informal caregivers of stroke patients

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5. To find out if religious coping predicts the mental health of the caregiver of stroke patient.
6. To examine the effect of age and mental health care among informal caregivers

RELEVANCE OF THE STUDY

Health care professionals and policy makers recognize the importance of enhancing the continuity of care across the care continuum and have emphasized models of integrated service delivery to achieve good health outcomes (Kodner, 2002). Yet, health care delivery systems continue to lack continuity across services and are often criticized for shortening hospital length – of –stay and for offering limited community services (Clarke & Rosen, 2001).

Initially, family caregivers often experience difficulty in coping with the unknown and uncertainty in solving problems and making decisions about the care of stroke survivors. Although individuals manage problems every day, newness of the caregiver role combined with fear may unknowingly harm stroke survivors (Hanger & Mulley, 1993).

In view of this, the study intends to focus on caregivers to provide information on some determinants or predictors of mental health of informal caregivers in Ghana that will go a long way towards decisions on treatment of stroke patients and their informal caregivers. The use of caregivers will provide clinicians with the necessary information as to how to train caregivers on ways to cope with their new role and cater for caregivers' psychological needs.

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Additionally, the outcome of the study will inform policy makers about better ways of dealing or managing stroke patients and their informal caregivers in the country. The study will also set the pace for more research in this area of informal caregivers' mental health and psychological well-being in Ghana as well as add to existing literature.

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CHAPTER TWO

LITERATURE REVIEW

INTRODUCTION

Reviewing literature in any study is to find out what is already known about a topic. According to Neuman (2006), “Reviewing the accumulated knowledge about a question is an essential early step in the research process”. The scientific literature will be reviewed to increase the understanding of psychological well-being of stroke caregivers. In other words, few researches have been conducted in Africa in relation to psychosocial well-being of caregivers of stroke patients. In light of this, the study will review literature from the global scene and narrow it down to African and Ghanaian literature.

THEORETICAL FRAMEWORK

Stress and Coping Perspective (Lakey & Cohen, 2000)

The Stress-Coping Theory states that people under stress first appraise the severity of the consequences of a stressor (primary assessment) and secondly, the available resources and possible coping strategies (secondary assessment). Primary and secondary assessments influence each other and determine the amount of stress experienced. Finally, the coping process starts with a person adopting a coping strategy (active or passive). The effectiveness of a chosen coping strategy and assessment influences a person’s social functioning, mental well-being and physical health. Lazarus and Folkman state that resources such as information, assertiveness, social support, health, material resources and others play an important role in assessment and coping and indirectly these variables influence a person’s well-being.

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The stress and coping perspective suggests that social support is one of the coping resources of stress and therefore lessens the effects of stressful life events on health through either supportive actions of others or the belief that support is available (Lakey & Cohen, 2000). Supportive actions of others are found to enhance an individual's coping ability while perceptions of available support may lead to evaluating potentially threatening situations as less stressful (Lazarus, 1966; Lazarus & Folkman, 1984). This implies that individuals going through major life stressors such as illnesses, who perceive that social support is available, would interpret their situations as less stressful. This enhances the individual's capacity to cope with the situation and in turn has beneficial effects on both physical and psychological well-being (Kawachi & Berkman, 2001).

Remarkable efforts have been made to establish the beneficial effects of social relationships on health and well-being. Research has established that persons with more types of social relationships live longer and have less cognitive decline with aging, greater resistance to infectious diseases and better prognosis in the face of chronic and life-threatening illnesses (Cohen & Janicki-Deverts, 2009). Most researches that have been conducted on stressful events and coping have also indicated that one of the most effective means by which individuals cope with stressful events is through social support, and social support is indicated to serve as a protective factor against psychological distress that is likely to result from those stressful events (Lowe, Chan & Rhodes, 2010; Pickens, Field, Prodromidis, Pelaez-Nogueras & Hossain, 1995).

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Stress Process Model (Pearlin, Mullan, Semple, & Skaff, 1990)

The Stress Process Model (SPM) provides structure to examine predictors of caregiver outcomes that occur from one phase of the illness trajectory to another (Blum & Sherman, 2010). There are four core components of this model. These are:

- 1) background and context
- 2) stressors
- 3) moderating resources
- 4) outcomes

Background and context refer to the characteristics of the caregiver and care recipient (socio-demographic characteristics), the context within which the care is provided (caregiving history), family and network composition, and program availability. In this study, there was a focus on the characteristics of the caregivers as well as the care recipient. The literature showed that caregiver age, sex, level of dependency of the survivor and duration of care were correlated with depression among family caregivers of stroke survivors.

Pearlin et al. (1990) considered that SPM stressors were conditions that threaten, thwart efforts, and defeat the dreams of people, and these experiences challenge a caregiver's ability to adjust to the demands of care giving. Family hardiness, coping, and social support are the moderating resources of SPM that have the capacity to hinder, prevent, or cushion the development of the stress process and its outcomes; moreover, these provide a buffering effect to stressors through direct and indirect pathways (Pearlin, 1999).

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Religious Coping Theory (Pargament, 1997)

The theory states that people draw on religious beliefs and practices to understand and deal with life stressors and this in turn influences their mental health in many ways. Religion is said to provide an optimistic world view which involves a supernatural force (e.g. God) who is considered as loving and caring about humans and controls all things which also in turn increases a person's sense of control, provides answers to existential questions such as "Where do we come from?" and "Where are we going?" (Koenig, 2012, Smith, 2003). Hence, negative life events become less distressing for religious persons, and this may translate into positive mental health outcomes. Again certain religious beliefs strengthen an individual's sense of control over life events and situations (Smith, 2003). Beliefs such as "God is all knowing", "directs the path of his children", and "He gives His children strength to overcome challenges" as well as "making all things work together for their good" also help to reduce psychological distress since a sense of control has been found to reduce psychological distress (Keeton, Perry-Jenkins & Sayer, 2008). According to Pargament (1997), religious coping can be positive or negative.

These theories did not evaluate the perception of stress by the informal caregivers of stroke survivors which can significantly influence the impact of the stressor. However, having a family member surviving an acute illness event such as stroke can be considered to be a stressful life event. The consequences of this stressful life event may be a drastic, unplanned and crucially challenging change in for example interpersonal relationships, roles, financial status and life trajectory. The interactions between the stress of being an informal caregiver and available personal resources can change the course of stress. Again, the resources available may significantly buffer the stress

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involved in caregiving. If a caregiver evaluates those resources as adequate, then he/she is likely to experience less stress which will translate into less emotional problems, better mental health and psychological well-being.

RELATED STUDIES

Related studies will be reviewed in three main sub-headings:

- Social support, mental health and psychological well-being
- Religious coping, mental health and psychological well-being
- Demographic variables (gender, age, duration of caregiving), mental health and psychological well-being.

Social Support and Mental Health

A high degree of burden is often experienced by informal caregivers of stroke survivors. However, the research conducted by Cumming, Cadilhac, Rubin, Crafti and Pearce (2008) aimed to examine the relationship between social support and psychological effects experienced by long-term caregivers of stroke survivors. The findings showed that increasing social support was correlated with lower levels of depression, anxiety and inward irritability in caregivers. Social support was independently associated with anxiety and inward irritability. Again social support was significantly associated with carers strain as assessed by the caregiver strain index. It was concluded that the amount of social support available to long-term caregivers of stroke survivors may be an important factor in lowering psychological burden in these caregivers.

Research has established that the amount and quality of social support available to caregivers is an important factor that helps to promote caregivers' adjustment (Savage

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& Bailey, 2004). Song et al. (1997 cited in Chang, Chiou and Chen, 2010) found that, caregivers who obtained more social support reported less burden and strong relationships between the availability of support systems and caregiver distress.

Drah (2014) studied the link between the social characteristics of queen mothers in Manya Klo in Ghana and their roles as caregivers. The results of the study suggested that queen mothers had become primary caregivers of orphans even though they may not have the means to provide for these orphans. These queen mothers lack kin support which worsens their physical and economic activities since they have to engage in less dignifying economic activities and pay less attention to their own needs in order to meet their customary obligations as orphan caregivers. This findings suggests that there are changes occurring in the customary foster care arrangements. As such policy makers and interventionist require in depth understanding of queen mothers and their peculiar circumstances in order to strengthen their roles as leaders and caregivers.

Studies invariably indicate that more social support corresponds to less depressive symptoms (Baumgarten et al., 1992; Schulz & Williamson, 1991) and lower perceived burden (Gallant & Connell, 1997). 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 access to help resources, need for respite care and direct help with care giving activities (Noberck, Chaftez, Skodol-Wilson & Weiss, 1991 cited in Phaladze, 2001).

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A cross sectional qualitative survey was conducted by Mushi, Rongai, Paddick, Dotchin, Mtuya and Richard (2014) to explore the socio-cultural beliefs surrounding dementia and the life experience of people with dementia and their caregivers. Results from the study showed that persons living with dementia perceived memory problems as a normal part of ageing. Dementia was commonly referred as disease of old people or memory loss disease. The majority of persons living with dementia and carers did not know what dementia is or what causes it. Dementia was felt to be associated with stroke, high blood pressure, diabetes, old age, curse/witchcraft and life stress. Half of the participants had used modern care and alternative care such as herbs, prayers or traditional healers. Caregivers complained about the burden of caring for persons living with dementia and suggested that community organizations should be involved in addressing the problem

A study describes levels of stress in stroke survivors and spousal caregivers and identifies predictors of stress in couples during their first year at home (Ostwald, Bernal, Cron & Godwin (2009). The perceived Stress Scale (PSS) was administered to 159 stroke survivors and caregivers at discharge, 3, 6, 9, and 12 months. The researcher tested other variables which includes stroke survivor function (FIM), health status, mutuality, stroke impact (SIS), caregiver coping (F-COPES), support (MOS Social Support Survey), and preparedness. Repeated measures analyses of PSS scores were conducted with linear mixed models for stroke survivors and caregivers. The result indicates that PSS scores for stroke survivors and caregivers were positively correlated ($p < .01$). Scores decreased significantly over the year, but caregivers had higher scores initially and decreased less. Stroke survivor function was a significant predictor of stress for both survivors and caregivers. Preparation was the most powerful predictor of stress in caregivers, while mutuality was the strongest predictor for stroke survivors.

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Good health, social support and coping were associated with less stress. It was concluded that stress is increased by poor function and mediated by internal and external buffers including health, the dyadic relationship, coping ability and social support.

A study by Sit, Wrong, Clinton, Li and Fong (2004) aimed to examine aspects of social support available to family caregivers during the first 12-week transitional period following hospital discharge. The study adopted a cross-sectional descriptive design. Regression analysis was performed for examining the types of social support received and the general health of family caregivers. Open-ended questions were used to gain a better understanding of situation-specific supports including their availability, utilization and eventual satisfaction. Findings of the study confirmed that home care for the stroke survivor is heavy and demanding. Health-related care tasks were the most stressful. Around 40% of the family caregivers reported somatic symptoms. Fewer persons in the social network of the family caregivers had provided support compared with the number of support people that caregivers thought available. Two inadequate types of support were tangible support and information support. Professional advice and feedback in relation to home care skills were particularly lacking. Findings of this study affirmed that stroke care needs exceed the hospital boundary.

The purpose of the study conducted by Haley, Allen, Grant, Clay Perkin, and Roth (2009) was to determine the prevalence and stressfulness of stroke-related problems, and perceived benefits of caregiving, as reported by an epidemiologically derived sample of caregivers of stroke survivors. Stroke survivors (N=75) from a prospective epidemiological study of stroke, the Reasons for Geographic and Racial Differences in

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Stroke (REGARDS) study, and their family caregivers were followed. Caregivers were given a comprehensive telephone interview 8 to 12 months after the stroke, using measures of stroke patient problems, caregiver appraisals of the stressfulness of these problems, and perceived benefits of caregiving. The result of the study indicate that caregivers rated patient problems with mood (depression, loneliness and anxiety), memory, and physical care (bowel control), as the most stressful, but reported prevalence of these problems was lower than those reported previously in studies using clinical samples. Caregivers also reported many benefits from caregiving, with over 90% reporting that caregiving enabled them to appreciate life more. Epidemiologically based studies of stroke caregiving provide a unique picture of caregiver strains and benefits compared with clinical studies, which tend to over-represent more impaired patients. Support for caregivers should include interventions to aid their coping with highly stressful mood, physical care, and cognitive problems of stroke patients, but should also attend to perceived benefits of caregiving.

Fauth, Hess, Piercy, Norton, Corcoran, Rabins, Lyketsos and Tschanz (2012) conducted a study on Caregivers' Relationship Closeness with the Person with Dementia Predicts Both Positive and Negative Outcomes for Caregivers' Physical Health and Psychological Well-being. After controlling for covariates, cross-sectional results suggest that higher levels of baseline closeness were significantly associated with less depression and better mental health ratings but not with caregiver affect or with caregivers' physical health scores. In contrast, longitudinal findings suggested that higher baseline closeness was associated with worse outcomes; higher closeness predicts declines over time in caregiver affect and physical health.

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Studies examining the problems in family caregivers of stroke survivors are relatively few and components of clinical interventions remain unclear (Chwalisz & Vaux, 2000). Reviews of these cross-sectional studies suggest that social support is a significant predictor of depression and life satisfaction at the onset of the caregiver's role (Grant et al., 2000). Furthermore, these benefits may extend long term, generating better energy, mental health, physical function, general health, quality of life and less pain (Mant, Carter, Wade & Winner, 2000).

Other studies have observed that caregivers' perceptions of available social support can influence their health (Blake, Lincoln & Clarke, 2003). The absence of social support has been associated with stress in stroke survivors as well as their caregivers (Glass et al., 1993; Jonsson et al., 2005; Secrest, 2000). A study by Khalid and Kauser (2008), found that caregivers' depression was best predicted by lack of tangible social support. Choi-Kwon, Kim, Kwon and Kim (2005) compared the perceived burden for caregivers in Korea and the USA using a brief interview method. The primary predictor of overall burden of the caregiver was insufficient social support.

Grant et al. (2006) conducted a quantitative study on social support, social problem-solving abilities and adjustment of family caregivers of stroke survivors using 52 family caregivers with majority being females (46). Outcome measures for caregiver adjustment were depressive symptomatology, well-being and general health. Consistent with prior research, declines on social support are linked intricately with family caregiver adjustment and these associations are evident soon after their return to the community. In their study, there was a dynamic association between social support and

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caregiver adjustment the first 3 months after stroke, affecting depressive symptomatology and well-being.

Grant, Glandon, Elliott, Giger and Weaver (2004) conducted a study with the purpose to identify the major problems and associated feelings experienced by family caregivers of stroke survivors during the first month after returning home. Safety, difficulty in managing activities of daily living, and cognitive, behavioral and emotional changes of stroke survivors (for example, mood swings, lack of motivation, forgetfulness and memory loss, depression and calling the caregiver often) were the three most common problems experienced by caregivers during the first month. Other problems were loss of caregiver independence, confinement, tiredness and inadequate time to do caregiving tasks as well as managing stroke survivor physical symptoms, for example, pain, not eating and skin problems. The first month of caregiving is very dynamic and distressful for caregivers of stroke survivors and telephone contacts appear to be beneficial in assisting caregivers to cope with the caregiving process.

It has also been established that perceived social support can function as a pain-buffering mechanism, promoting increased self-efficacy and optimism as well as reduced loneliness in the face of stress. This may in turn protect an individual from mood disorders such as depression and anxiety and other forms of mental disorders (Mikulincer & Shaver, 2008; Southwick, Vythilingam, & Charney, 2005). Researchers and theorists from diverse disciplines have studied the ways in which social relationships can influence individuals' physical and mental health. Despite the fact that most researchers have come to agree that there is an important association between social support and well-being, they continue to define and study social support in different ways (Vangelisti, 2009).

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Religious Coping and Mental Health

Research has documented that religion is associated with improved mental health.

A study conducted by Gholamzadeh, Hamid and Ibrahim (2014) aimed to explore the relationship between religiosity and psychological well-being of caregivers of stroke survivors in Shiraz, Iran. A purposive sample of 96 family members, which included 34 daughters in law and 62 daughters, who were caring for severe impaired stroke survivors were controlled in the study. The result of the study revealed a significant correlation between positive religious coping and caregivers' psychological well-being. Positive religious coping accounted for 7.2% of the change in psychological wellbeing but there was no significant association between demographic factors and caregivers' psychological wellbeing. The study concluded that religious and spiritual belief have a role in caregiver adaptations with the situation.

A study by Hebert, Zdaniuk, Schulz and Scheier (2009) assessed positive and negative religious coping and wellbeing in women with breast cancer. Religious coping was measured with validated measures of positive and negative religious coping and linear regression models were used to explore the relationships between positive and negative religious coping and overall physical and mental wellbeing, depression and life satisfaction. The result showed that the percentage of women who used positive religious coping (Partnering with God or looking to God for strength, support or guidance) a moderate amount or a lot amount was 76%. Negative religious coping (eg. Feeling abandoned by or anger at God) was much less prevalent. Positive religious coping was not associated with any measures of wellbeing. Negative religious coping, sociodemographics and other covariates. Also cancer stage did not moderate the

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relationships between religious coping and wellbeing. It was therefore concluded that negative religious coping methods predicts worse mental health and life satisfaction in women with breast cancer.

Again Hebert, Dang, and Schulz (2007), reported that religious attendance, prayer, and beliefs are associated with less depression in active caregivers. According to Picot, Debann, Namazi, and Wykle (1997), religion may help alleviate the impact of caregiving burden or 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. It is therefore not surprising that there has been a dramatic increase in psychological research in this area. The influence of religious coping on mental health and psychological well-being has been studied using a variety of mental health outcomes among various populations.

A study carried out by Abdel-Khalek (2009) who explored the associations between religiosity and both subjective well-being and depression, among Saudi school children and adolescents, it was found out that females obtained a significantly higher mean score on depression than their male counterparts which confirms the assertion that females are more vulnerable to depression (Belle & Doucet, 2003) and that females report lower levels of well-being than men (Piccinelli & Wilkinson, 2000). All the correlations were significant between religiosity and both subjective well-being rating scales (positive) and depression (negative) irrespective of gender. The researcher concluded that religious persons (in this sample) were happier, healthier, and less depressed. However, as accepted by the researcher, even though a large sample size has

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been employed in this study, it is crucial to make conclusions about this research in the light that its findings are limited to this group (11-18 year old Saudi school children). To be able to generalize the findings, there is a need to expand the age range to adulthood in order to ascertain its generalizability to adults.

Another research conducted by Abdel-Khalek, (2011) explored the association between religiosity, subjective well-being, self-esteem, and anxiety among a sample of 499 Muslim Kuwaiti adolescents. Results suggest that religiosity is associated with high levels of self-rating of subjective well-being, self-esteem and low levels of anxiety. This provides further evidence that religiosity has positive influence on various aspects of mental health, since positive relationship has been found with positive mental health outcomes (subjective well-being and self-esteem) and negative relationship with negative mental health outcomes (depression and anxiety) in these two studies carried out in a very large sample and a much smaller sample size by the same investigator. The caution however is that these studies have been carried out on participants with the same religious affiliation (Islam) which brings to mind the question of whether the same results will be obtained when participants belong to diverse religions.

Gupta, Avasthi and Kumar (2011) studied 30 depressed patients with low religiosity and 30 patients with high religiosity to compare the pathology between depressed patients with low religiosity and those with high religiosity and to correlate the level of religiosity with their pathology in the psychiatric clinic of a general hospital in Chandigarh in North India. In these patients, hopelessness and suicidal intent correlated negatively with their level of religiosity, meaning those who were high on religiosity were less hopeless and suicidal which points to the buffering effects of religiosity on negative mental health outcomes or psychopathology. A strong point for this particular

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research is that it measures religiosity with a scale that is not specific to any religion but measures level of religious faith and belief, and consequently can be used for all religious groups. Nonetheless, replicating the study using a community-based sample would improve its generalizability and contribution to the literature since only clinical samples were used in this study.

A cross-sectional study of follow-up data from a study of patients receiving care for bipolar disorder at an urban Veterans Affairs mental health clinic by Cruz, Pincus, Welsh, Greenwald, Lasky *et al.* (2010) gave a different dimension of studies of religiosity and mental health. The study showed that religiosity on mental health is not only restricted to depression and anxiety but also implicated in other forms such as bipolar disorder. This research was conducted by Cruz, Pincus, Welsh, Greenwald, Lasky *et al.* (2010). The researchers investigated the association between various dimensions of religiosity (frequency of church attendance, frequency of prayer or meditation, as well as influence of beliefs on life) and mixed, manic, depressed, and euthymic states after controlling for demographic variables, anxiety, alcohol abuse, and health indicators. Multivariate analyses found significant associations between higher rates of prayer or meditation and mixed state as well as lower rates of prayer/meditation and euthymia.

Conflicting to earlier findings, depression and mania had no significant associations with religious attendance. This lends credence to criticisms that the use of organizational religion (such as religious involvement or attendance) in measuring religiosity is not reliable (Flannelly, Ellison, & Strock, 2004; Hall, Meador & Koenig, 2008). There is also an indication from this particular study that certain religious activities such as prayer may actually have positive relationship with certain aspects of

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psychopathology. Unfortunately, these researchers failed to control for stress which could have influenced the results of this study since there is some evidence suggesting that people who are going through some form of stress are more likely to be involved in religious activities such as prayer and rituals than those who are not (Ellison & Levin, 1998).

In Plakas et al.'s (2011) study, 25 relatives of patients in the intensive care units of three public general district hospitals in Athens (Greece) participated in 19 interviews. Religiosity was found to be the main source of hope, strength and courage for relatives. This was expressed in church or monastery attendance, belief in God, praying, and performing religious rituals which in turn alleviated negative emotions.

There is also a great body of literature which demonstrates salutary effects of religious beliefs and spirituality on psychological well-being (Joshi, Kumari & Jain, 2008). The majority of studies conducted since the year 2000 as reviewed by Moreira-Almeida, Lotufo Neto and Koenig (2006) found that higher levels of religious involvement are positively associated with indicators of psychological well-being (life satisfaction, happiness, positive affect, and higher morale) and with less depression, suicidal thoughts and behavior, drug/alcohol use or abuse. Usually the salutary effects of religious involvement on mental health have been found to be stronger among people under stressful circumstances, usually the elderly, and those with disability and illness, implying that stress moderates the relationship between religious involvement and psychological well-being.

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This finding partially supports the religious coping theory which posits that religion influences mental health by serving as a coping resource in dealing with stress (Pargament, 1997). Using religious involvement as a measure of religiosity in these studies reviewed, one would have expected the researchers to control for social ties, since it might not be religious involvement in itself that affects psychological well-being but supportive social interactions derived from the involvement in religious activities (Ellison et al., 2009).

Also, in a longitudinal study, Philips III and Stein (2007) examined religious meaning-making coping in a sample of 48 young adults diagnosed with schizophrenia or bipolar disorder over a one-year period. Participants with mental illness generally reported using religious meaning-making coping in levels comparable to non-psychiatric samples. Participants who reported benevolent religious reappraisals had higher perceptions of positive mental health, whereas those who reported punishing God reappraisals and reappraisals of God's power also reported higher distress and personal loss. Religious coping variables accounted for variation in participants' reports of psychiatric symptoms and personal loss one year later regardless of demographic and global religious variables. This again supports the religious coping theory and but demonstrates that religious coping may have both positive and negative implications for individuals, depending on its use (Pargament, Smith, Koenig, & Perez, 1998).

Furthermore, the association between religiosity and depressive symptoms was examined by Smith, McCullough and Poll (2003) with meta-analytic methods across 147 independent investigations. The relationship between religiosity and depressive symptoms across all the studies that were analyzed revealed that greater religiosity was

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slightly linked to fewer depressive symptoms. These results were not influenced by demographic variables (such as, gender, age, or ethnicity). However, the relationship between religiosity and depression was stronger in studies relating to individuals undergoing stress due to recent life events. This finding further emphasizes the impetus for researchers to consider the influence of stress in the relationship between religiosity and mental health since it may have the potential of influencing the relationship between religiosity and mental health outcomes.

In another study carried out by Baker and Cruickshank (2009), the influence of religious affiliation, saliency, and practice on levels of depressive symptoms and treatment preference was investigated in a sample of Christians, Muslims, Atheists, and Agnostics. No significant differences in depressive symptoms were found between affiliations. However, saliency and frequency of practice had a weak negative correlation with depressive symptoms for Christians, but strangely they were not significant for Muslim participants. The researchers attributed the difference between Christians and Muslims to the fact that data was collected during the Ramadan period of the Muslims and this could confound the measure of saliency and frequency of practice. One thing that remains obvious however is the fact that religious affiliation alone is not a strong measure that influences depression since there was no difference even between religious groups (Christian and Muslim) and non-religious groups (Agnostics and Atheists).

Even though a large body of literature has documented salutary relationships between various aspects of religious involvement and mental health outcomes, including depressive symptoms, there is a controversy in the literature with regards to which

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measures of religiosity are actually related to mental health outcomes. There is an indication that certain dimensions of religiosity may not be strong enough to be able to establish its effects on certain aspects of mental health. This explains why some researchers found no relationship between certain aspects of religiosity and mental health outcomes (Smith et al., 2003).

Ellison et al. (2009) conducted a research in which a number of hypotheses concerning main and contingent effects of religious attendance, salience, and consolation-seeking were tested using data on a large sample of Mexican-origin adults. There was an initial negative relationship between religious attendance and depressive symptoms. This relationship however disappeared after controlling for supportive social ties. The positive association between religious salience and depression on the other hand persisted despite all statistical controls; this relationship was present among both men and women, but it was significantly stronger for women.

It could therefore be concluded in this study that religious coping is not strong enough to influence depressive symptoms and could only have an influence when supportive social ties are present, but religious salience is a stronger measure of religiosity. This demonstrates the importance of using reliable and multidimensional measures of religiosity in conducting mental health research.

In addition, Trevino et al. (2012) conducted a study on religious coping and psychological distress among military veteran cancer survivors, in which 48 veteran cancer survivors completed measures of psychological distress, post-traumatic growth, and positive and negative religious coping. It was found that negative religious coping was associated with greater psychological distress and post-traumatic growth. Positive

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religious coping was also associated with greater growth. The researchers suggested that assessment of religious coping may be particularly important for female, non-White, and Christian cancer survivors. The researchers suggest that religiosity is a very important coping resource for women and people of non-white descent in dealing with illness. The implication of this finding for the present study is that religiosity will serve as a coping resource for women in Accra, especially those who are dealing with mental illness.

Despite the fact that most research on religiosity and coping with illnesses have concentrated on physical illnesses, religiosity could also serve as a good coping resource for people with mental illnesses (Taylor, 2001). Moreover, there is a suggestion that religiosity may be a very important tool for recovering from mental illness. This was confirmed in Webb, Charbonneau, McCann and Gayle's (2011) study in which eighty-one (81) participants with severe mental illness were sampled. Participant's recovery, religious support, and struggle or endurance with faith were measured through self-report measures. Results reveal that religious support and enduring with faith were positively correlated with recovery while struggle with faith was negatively associated with recovery. This research is however limited in terms of its ability to be generalized to other populations since most of the participants used were Caucasians (84 %). The types of mental illnesses used in this study were also restricted to schizophrenia, schizoaffective, bipolar disorder and major depression.

Rosmarin, Pargament and Mahoney (2009) also investigated the role of Jewish religiousness in anxiety, depression, and happiness, in a Jewish community sample (565). Several aspects of global Jewish religiousness were examined, as well as a

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theoretically based Jewish religious variable, “trust in God”. A self-report measure of trust in God was created, and factor analyses yielded two reliable and valid subscales: trust in God and mistrust in God. Contrary to their hypothesis, global Jewish religiousness was on the whole unrelated to mental health functioning. On the other hand, higher levels of trust in God were associated with less anxiety and depression, and greater personal happiness, whereas inverse associations emerged for the mistrust subscale; suggesting global religiousness might not be a strong measure of religiosity.

To add to the above study, a research examining the relationship between religious beliefs, anxiety and depression was carried out by Jansen, Motley and Hovey (2010). No difference was found between Catholic and other Christian denominations in rates and levels of depression and anxiety. Self-reported religious influence and self-reported religiosity were however significantly related to depression but not anxiety. Religious service attendance was also negatively correlated with both anxiety and depression. From this study, it is clear that religious affiliation had no influence at all on depressive and anxiety symptoms but rather religious influence, self-reported religiosity and religious attendance did. The obvious flaw of this study is the use of organizational religiosity measure (religious attendance) without controlling for religious social support since this has been found to moderate the relationship (Ellison et al., 2009; Nooney & Woodrum, 2002). One can therefore not vouch for the reliability of the finding which claims religious service attendance had a negative relationship with depression and anxiety in this sample.

These studies suggest that certain aspects of religiosity may play a more influential role in the protection against psychopathology, indicating that different dimensions of religion play different roles in individuals’ mental health. The dimension of religiosity

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used in a particular study is therefore very essential because it has the potential of influencing the findings. It is necessary to use theoretically based and quantifiable measures of religiosity, (such as strength of religious faith or religious saliency) in addition to global measures such as religious attendance (Green & Elliot, 2010; Rosmarin et al., 2009).

Gender of Caregiver

A longitudinal study by Larson, Franzen-Dahlin, Billing, Arbin, Murray and Wredling (2006), to explore gender differences among spouses in perceived psychological wellbeing and general life situation during the first year after the patients stroke event showed that female spouses have a negative impact of psychological wellbeing while male spouses have a lower occurrence of emotional contacts in their social network. Consistently, the female spouses reported lower quality of life and wellbeing than the male spouses. The study concluded that it is important to take individual differences under consideration when designing a nursing intervention, to meet the different needs and demands of male and female caregivers.

Oladipo, Amoateng and Sabiti (2014) investigated psychological and social challenges facing people living with HIV in northwest province of South Africa. 728 participants comprising 319 females and 409 males were sampled for the study. Results from the study suggested a significant relationship among the psychosocial variables in the study. Gender did not significantly predict self-efficacy and self-worth among the participants. There was a significant gender difference in life satisfaction as women appeared to be more satisfied with life than men did. Participants did not present reactions such as guilt, helplessness, depression, confusion or despair in the face of

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diagnosis. It was concluded that persons living with HIV are adjusting well without feeling of fear, rejection, frustration and depression. The most important factors in helping these patients is by improving their psychosocial wellbeing and protecting them from stigmatization.

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).

It is a well-established fact that females are at higher risk for depression than males (Legg, 2012). Some studies have also reported female caregivers to be more depressed than their male counterparts. Van den Huevel et al. (2001) reported in their study that being a female caregiver was associated with caregiver depression. Studies in patients with Traumatic Brain Injury (TBI), dementia or stroke have reported female caregivers reporting more anxiety and depression than their male counterparts (Kreutzer, Gervasio & Camplair, 1994).

On the contrary, a study conducted by Balhara et al. (2012) on the predictors of anxiety and depression among stroke patient caregivers recruited seventy five consecutive patient dyads. Regression analysis revealed that the sex of the caregivers was only a significant predictor of anxiety level among caregivers ($\beta=0.44$, $p < 0.01$). However, the

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sex of the caregiver was not found to be a significant predictor of depression level in caregivers. Similarly, a quantitative study by Dennis et al. (1998) reported that female caregivers scored more on the HADS (anxiety subscale) than their male counterpart ($p < 0.01$) but not on the depression subscale.

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, 2004; Walker, Pratt, & Eddy, 1995).

The physical and mental effect after stroke and the family's response to this catastrophic event may have deleterious effects on caregivers. To examine the influence of stroke survivors' motor function, their memory and behavior changes, and the family conflict surrounding stroke recovery on the mental and physical health of caregivers during the subacute recovery period. Clark, Dunbar, Shields, Viswanathan, Aycock and Wolf (2004) conducted a study using cross-sectional, correlational baseline data from family caregivers ($n = 132$) and first-time stroke survivors enrolled in a larger multisite study. The result showed that the caregivers were primarily White (71%), female (74%), college-educated (73%) spouses (80%) of survivors. Most of the caregivers (66%) reported family conflict. The caregivers from families with lower family functioning scores reported worse mental health. The caregivers reported lower mental health when they were caring for stroke survivors with a combination of high memory/behavior changes and low motor function ($R = .30$). Family conflict appears to exacerbate the impact of memory and behavior changes on caregiver mental health. Higher caregiver education and no major health problems were associated with better caregiver physical health ($R = .36$). Caregiver physical health was not associated with family functioning or stroke survivor memory and behavior changes. These results indicate that memory

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and behavior changes of stroke survivors and family conflict surrounding stroke recovery are important considerations for assessment during the poststroke recovery period.

Informal caregivers are vital to the long-term care and rehabilitation of stroke survivors worldwide. However, caregiving has been associated with negative psychological outcomes such as anxiety and depression, which leads to concerns about caregiver as well as stroke survivors' well-being. A research done by Atteih, Mellon, Hall, Brewer, Horgan, Williams and Hickey (2015) aimed to examine caregivers' psychological wellbeing and satisfaction with service provision in the context of stroke. Caregivers' data were collected as part of the ASPIRE-S study and a prospective study of secondary prevention and rehabilitation which assessed stroke patients and their caregivers at six months post stroke. Caregivers' assessment included measurement of demographics, satisfaction with care, psychological distress and vulnerability. Analysis from the caregivers showed substantial levels of dissatisfaction with community and hospital services as well as notable levels of anxiety and depressive symptoms among caregivers. Caregivers' anxiety was predicted by stroke survivor anxiety, depression and stroke survivor cognitive impairment. Again caregiver depression was predicted by stroke survivor anxiety and stroke survivor depression. The findings indicate that caregiver and stroke survivor wellbeing are interdependent. Thus, early interventions, including increased training and support programs that include caregivers are likely to reduce the risk of negative emotional outcomes.

Health-related quality of life (HRQoL) is a recognized and important outcome after stroke. A study conducted by Carod-Artal and Egido (2009) found that disability and

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poststroke depression are consistent determinants of HRQoL. Other determinants include female sex, coping strategies and social support. Poststroke depression affects HRQoL, functional recovery, cognitive function and health care use in stroke survivors. Stroke caregivers have lower HRQoL, greater prevalence of stress and depression, economical burden and changes in social relationships. Advancing age and anxiety in patients and caregivers, high dependency and poor family support identify caregivers at risk of adverse outcomes. Thus, physical and psychosocial wellbeing is greatly affected in stroke survivors and their caregivers.

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 & 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.

Age of Caregiver

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 Pinguart, & Sörensen, 2007) and also because caregiving-related stressors

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may have stronger negative effects on the physical health of older caregivers with pre-existing health problems (Pinquart, & Sörensen, 2007).

To identify which caregivers of stroke patients living at home experience the highest level of strain and are at risk of burn-out and to investigate how support for caregivers of stroke patients could best be organized and when this support be offered, a study by Van den Heuvel, de witte, schure, Sanderman and Mayboom-de Jong (2001) found that sever cognitive, behavioral and emotional changes in the patient constitute the main risk factors for caregivers burn-out. Women, younger caregivers and caregivers in poor physical health were also identified as risk groups. Caregivers with high perceived self-efficacy, satisfied with social support and frequently using the coping strategy confronting, experience less strain, higher mental wellbeing and greater vitality. Duration of the caregiver role does not influence caregivers' strain, mental wellbeing or vitality. Thus, women, younger caregivers, caregivers in poor health and caregivers of patients with severe changes are at risk of burn-out.

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) 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 (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

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that physical health status declines with increased age (Brunet et al., 1996; Singer, Hopman, & MacKenzie, 1999).

Some studies have reported a relationship between the age of the caregiver and depression experienced by them. For example, the study conducted by Fatoye et al. (2006) showed that depression is predicted by high caregivers' age. Other studies have found no significant relationship between the two variables. In a study by Draper et al. (1992) comparing caregivers for elderly stroke and dementia victims, no significant relationship was found between the age of the caregiver and the depressive symptoms experienced. Other studies have also found that the age of the caregiver was not related to caregivers' depression (Ross & Morris, 1988; Schulz et al., 1988). Studies on the association between caregiver's depression and caregiver's age give controversial results (Jönsson et al., 2004; Smith et al., 2004; van den Heuvel et al., 2001; Visser-Meily et al., 2008).

Duration of Caregiving

Previous studies have reported a significant relationship between the duration of caregiving and depression among caregivers of stroke survivors. A study to investigate the factors that affect the psychological wellbeing in family caregivers of stroke patients was conducted by Kim and Kim (2005). The general health perception, short form 36, health survey questionnaire was used to measure health perception and the caregiving mastery scale was also used to assess the mastery, while the psychological general wellbeing index was used to examine the level of wellbeing. The result revealed that subjective health, caregiving mastery, patient's ADL and caregiving duration influenced on caregiver's psychological wellbeing. Subjective health had effect on

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psychological wellbeing through caregiving mastery. It was concluded that, there is the need to develop a health program for the caregivers of stroke patients and to provide nursing intervention to improve the caregivers' ability, thereby improving the wellbeing of the family caregivers

Berg et al. (2005) argued that as the time spent in caregiving increases, the relationship between caregiving duration and depression is no longer significant. Some studies have been found to be consistent with the findings of Berg et al. (2005) who in his study revealed that at the later stages of stroke survivors' care, caregivers showed lesser signs of depression. For example in a cohort study conducted in Israel, 137 caregivers were conveniently sampled. The Short Geriatric Depression Scale (score of 6 or more) was used to assess depression. The timing of assessment was at 2 weeks, 3 months and 6 months. Depression was found to be high at the acute stage (37%) and decreased significantly at 3 months and 6 months (31%) (Nir et al., 2009). Consistent with the above is a study which showed that the number of caregivers who were found to be depressed significantly decreased over time. At 1 month 22 and 6 months, 20% and 16% were found to be depressed respectively (Rittman et al., 2006).

Smith et al. (2004) conducted a cross sectional study in the UK using unpaid caregivers of stroke patients identified from the stroke registers in two hospitals. The sampling method was convenience sampling and using the HADS, assessment of depression was done one year after stroke onset, the assumption being that there wouldn't be a statistically significant relationship between prolonged caregiving (>1 year) and depression of caregivers. On the contrary, a significant proportion (19%) were reported to be depressed which is similar to the proportion of caregivers found to be depressed at the acute phase (18%) in Berg's study. The duration of caregiving may not be a

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significant predictor since both acute and chronic stages of caregiving provided similar prevalence among caregivers. Other factors might be significant predictors of depression compared to duration of caregiving.

Also, there is a significant relationship between increasing number of hours providing care and depression (Legg, 2012). The findings of the study was that, there was a close relationship with those providing highest number of hours of care reporting the highest rates poor health and those providing the least having the lowest. However, this may not be applicable in the study as caregivers were family members and stayed in with their care recipients, hence caregiving was ongoing and it was difficult to quantify the number of hours of caregiving

RATIONALE FOR THE STUDY

When individuals who experience a sudden onset of chronic health conditions are discharged from hospital, they commonly rely on family members and friends who serve as caregivers for assistance with daily activities and navigate complex health care services (Smith & Smith, 2000). Stroke is said to be a leading cause of adult disability by researchers and the course of care for stroke is often characterized by unexpected onset, acute hospital care followed by rehabilitation and return to community living. Of new stroke survivors, an estimated 56% go directly home after acute care, 32% go to inpatient rehabilitation and 11% go to long-term care facilities (Heart and Stroke foundation of Canada, 2006).

Informal caregivers provide essential support to these stroke survivors when they return home with varying levels of physical and cognitive difficulty. Restructuring

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professional health care services to enhance the continuity of care across the care continuum for patients has implications for caregivers that have not been fully discussed in caregiving research or addressed in caregiver interventions. In general, caregivers rarely receive preparation for their new role and as a result, they often experience stress and negative health consequences that can additionally contribute to poor patient rehabilitation outcomes or threaten the sustainability of home care (Kao & McHugh, 2004). The objective of this study was to evaluate and assess the mental health and psychological well-being among caregivers of stroke patients or survivors.

Furthermore, environmental and contextual factors are critical in determining the behavior of a particular group. Cuellar (2002) found that cultural variations have been observed to influence the response of caregivers to the burden of caregiving. Certainly, the environmental and contextual factors of Europe may differ considerably from that of Ghana. Thus, the mental health and the psychological well-being of the caregivers of stroke survivors would be different across the various regions. This study will address the phenomenon as applied in the Ghanaian context.

In addition to the above, few studies have compared informal caregivers of stroke survivors with other control groups with most of them studying only the caregivers (Das et al., 2010; Berg et al., 2006). Without the inclusion of non-caregivers or other control groups, it is difficult to define the extent of informal caregiver outcomes beyond or below those found in the general population having demographic status similar to that of stroke caregivers (Ward, Morisky & Jones, 1996). For example Anderson et al. (1995) in their study did not compare caregivers with non-caregivers or with other caregivers involved with other disabling illnesses, therefore, it cannot be concluded that

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stroke related disability has differential effect on caregivers. Han and Haley (1999) posits that it is necessary to compare caregivers and non-caregivers in order to differentiate unique stroke caregiving impacts. Therefore, this work compared the predictors of mental health of both informal caregivers of stroke survivors and non-caregivers. The non-caregivers served as a control for comparing with the informal caregivers.

Finally, there is a paucity of data on the mental health of informal caregivers of stroke survivors in Ghana. Only a few studies are available even on the African continent (Akosile et al., 2011; Fatoye et al., 2006; Ogunlana et al., 2014). It was therefore necessary to conduct such a study in Ghana.

STATEMENT OF HYPOTHESES

- 1) a. Non caregivers will report better psychological wellbeing than informal caregivers.
b. Informal caregivers will significantly report higher levels of psychological distress than non- caregivers.
- 2) a. Younger informal caregivers will significantly report better psychological wellbeing than older informal caregivers.
b. Older informal caregivers will significantly report more psychological distress than younger informal caregivers.
- 3) a. Components of social support (family, friends and significant others) will significantly predict psychological wellbeing.

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- b. Components of social support (family, friends and significant others) will significantly predict psychological distress.
- 4) a. There will be a negative significant relationship between negative religious coping and psychological wellbeing.
- b. There will be a positive significant relationship between negative religious coping and psychological distress.
- 5) Duration of caregiving will predict a positive relationship with psychological distress.
- 6) Stress will moderate the relationship between social support, religious coping and psychological distress.

OPERATIONAL DEFINITION OF TERMS

Psychological distress: It is distress in a form of anxiety, sadness (depression), irritability and emotional vulnerability.

Psychological well-being: It is the combination of feeling good and functioning effectively. That is feeling capable, well supported, satisfied with life, etc.

Social support: Perceived care, assistance and empathy from family, friends and significant others as measured by the Multidimensional Scale of Perceived Social Support.

Informal Caregiver: It denotes care that is provided by a family member than by a professional who is reimbursed for services.

Older caregiver: Caregivers between the ages of 18-34

Younger caregiver: Caregivers between the ages of 35-55 and above.

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Non caregiver: A person who is 18years and above and is not a primary caregiver either for a stroke survivor or any other individual with a form of disability.

Hypothesized Conceptual Model

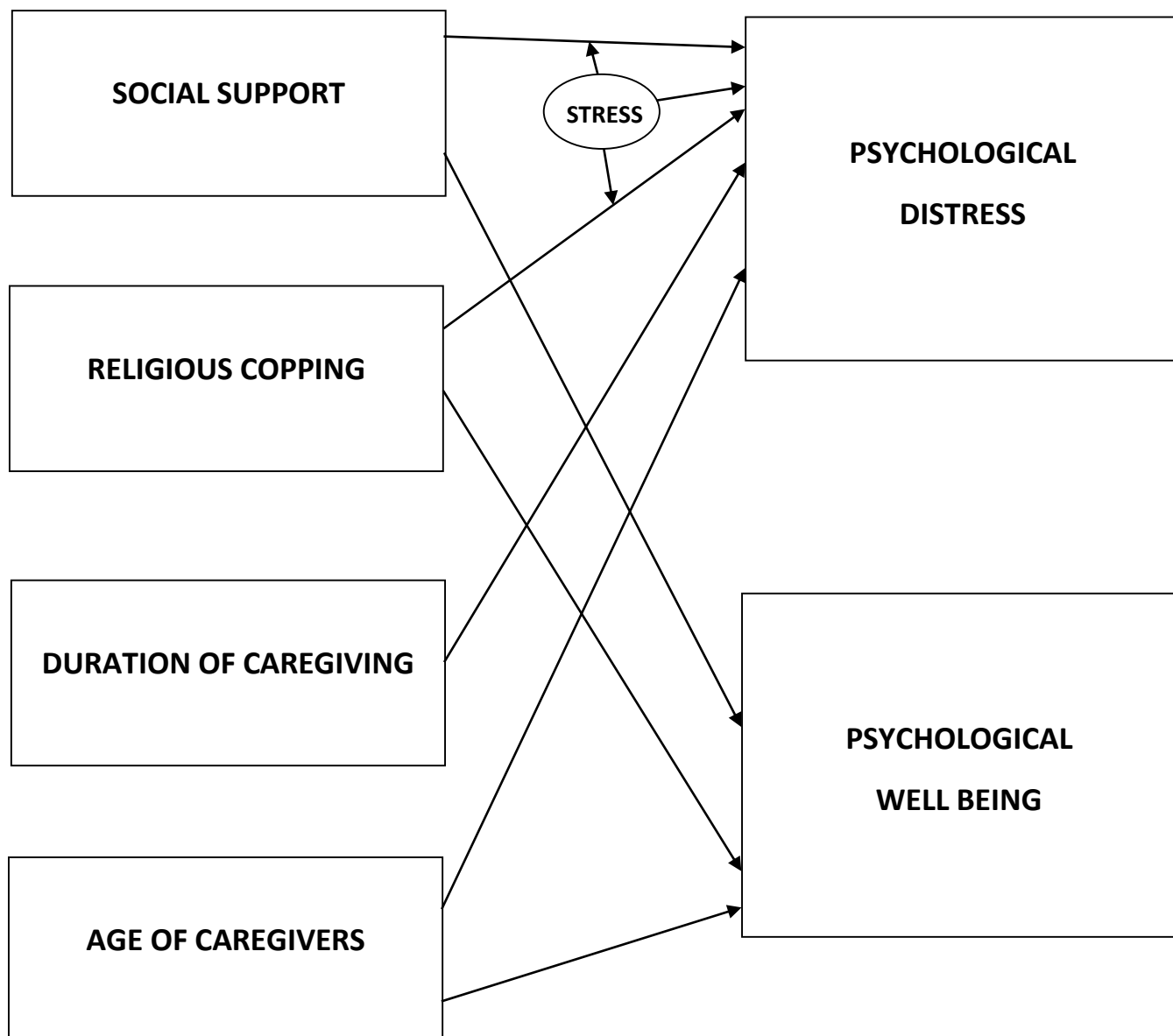


Figure 1: Hypothesized relationships among research variables

The conceptual model in Figure 1 shows that, social support, religious coping, duration of caregiving and age will predict mental health. Stress will moderate the relationship between social support, religious coping and mental health.

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CHAPTER THREE

METHODOLOGY

INTRODUCTION

This section describes the design of the study, the setting where it took place, the sampling design that was used, the instruments that were involved in data collection, and also the procedures that were followed for data collection. The statistics that was used for data analysis and a description of the way in which data was analyzed will also be described.

Population

Informal caregivers of stroke patients who came to the Stroke unit and physiotherapy unit of Korle-Bu Teaching Hospital in Accra was used as the population of this study. Also, non caregivers were selected from a population of visitors to the Korle-bu teaching hospital which comprised of persons not taking care of any chronically ill patients. The specific choice of the Hospital was because it serves as the central referral point of most cases in the metropolis. In addition to its busy nature it also has a physiotherapy unit and it is situated in an easily accessible location. Accra is highly populated and made up of diverse ethnic groups (AMA, 2011); hence it is more representative of the Ghanaian society than other cities and towns of Ghana.

Sampling Technique

The sampling technique that was used for this study was convenience and purposive sampling technique which is a non- probability sampling method in which the interviewer decided the choice of sampling units based on their convenience. Thus, since not all the informal caregivers and non-caregivers were willing to participate in

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the study the researcher had to rely on those who were willing to partake in the study. Therefore, employing the convenience sampling technique. On the other hand, in order to sample participant that meet the inclusion criteria for the study, purposive Sampling technique was used. Purposive sampling technique was employed because the sample was selected first of all from the population of informal caregivers of stroke patients based on the inclusion criteria. The researcher was interested in certain subgroups within the population. Though the probability sampling gives better accuracy in terms of confidence level of the inferences of the study, there are many practical difficulties in fully executing probability because of its limitations. So naturally, the interviewer resorted to convenience sampling to overcome such difficulties.

Sample Size

A convenience and a purposive sampling design was used to obtain sample size of hundred (100) informal caregivers of stroke patients and fifty (50) non-caregivers for the study, making a total of 150. According to Bartlett, Kotrlik and Higgins (2001) and appropriate Sample size the use in multiple regression analysis required a minimum returned sample size of 119 and above for a population of 6000 with a margin of error of .05 for continues data. This minimum returned was met in this study.

*Predictors of Mental Health Among Informal Caregivers of Stroke Patients***Table 1:** *Descriptive Frequency and Percentages of Family Caregiver (FC) and Non Caregiver (NC)*

Variable	Category	FC (n-100)	NC (n-50)
		Frequency (%)	Frequency (%)
Gender	Male	49 (49%)	24 (48%)
	Female	51 (51%)	26 (52%)
Age	18-24	18 (18%)	6 (12%)
	25-34	56 (56%)	22 (44%)
	35-44	7 (7%)	4 (8%)
	45-54	16 (16%)	17 (34%)
	55+	3 (3%)	1 (2%)
Marital Status	Single	73 (73%)	30 (60%)
	Married	25 (25%)	20 (40%)
	Widow	2 (2%)	-
Religion	Christian	77 (77%)	33 (66%)
	Muslim	23 (23%)	17 (34%)
Employment Status	Employed	52 (52%)	27 (54%)
	Unemployed	45 (45%)	19 (38%)
	Retired	3 (3%)	4 (8%)
Educational Level	Primary	8 (8%)	-
	JHS	23 (23%)	6 (12%)
	SHS	37 (37%)	16 (32%)
	Tertiary	27 (27%)	28 (56%)
	Others	5 (5%)	-

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Informal caregivers group

Inclusion Criteria

1. The informal caregivers should be a family member who is 18 years and above.
2. The person should be the primary informal caregivers who assists the stroke survivor in ADL as well as other things like taking the stroke survivor to the hospital
3. Should have provided care for at least one month.

Exclusion criteria

1. Below 18 years
2. With any past psychiatric illness, severe physical illness or
3. Refusal to willfully participate or offer consent.

Non caregivers group

Inclusion criteria

1. The non- informal caregivers should be 18 years and above.
2. Should not be a primary informal caregivers providing care for a family member with disability.
3. Not from the same family as the informal caregivers. This is because in a family with persons with disability, more than one person may be assisting but may not be the primary informal caregivers.

Exclusion Criteria

1. Less than 18 years

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2. With any past psychiatric illness, severe physical illness or
3. Refusal to willfully participate or offer consent.

Research Design

The cross-sectional survey design was used to collect data. This design enabled the researcher to collect information from caregivers and non-caregivers with diverse socio-economic backgrounds on certain characteristics, social support and religious coping through the use of questionnaires and data was collected from the respondents only once at the Korle-bu Teaching Hospital.

Measures

A convenient and purposive sampling method was used by the researcher to obtain research participants and the following instruments or measures were used.

Demographic variables

A demographic questionnaire was used to gather data on demographic characteristics of participants such as age, gender, education, marital status, employment status and duration of caregiving.

Social support

It was assessed by using the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet & Farley, 1988; 1990). It is a 12-item scale that measures an individual's perception of how much he or she receives outside social support from three sources; the family, friends and significant others on a 7-point Likert scale. It ranges from very strongly disagree to very strongly agree and the scores

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ranging from 7 to 84. Higher scores indicate higher levels of perceived social support. Good Cronbach alpha has also been reported; ranging from .81 to .98 for non-clinical samples and .92-.94 for clinical samples (Clara, Cox, Enns, Murray & Torgrude, 2003; Zimet et al. 1988; Zimet, Powell, Farley, Werkman & Berkoff, 1990). One peculiar feature of this scale is the fact that it does not only measure perceived social support but also the source of the support (Zimet et al., 1988). It has been widely used in both clinical and non-clinical samples of different ages and cultural background and has been reported to be valid and reliable.

Religious Coping

Brief RCOPE (Pargament, Smith, Koenig & Perez 1998)

This is a 14-item scale which is used to measure religious coping. It has two subscales which are positive (PRC) and negative (NRC) religious coping. The brief RCOPE has been associated with the health and mental health-related outcomes of a wide variety of critical life situations such as illness, victimization, war and the death of a loved one. The scale is on a 4-point Likert scale 1= not at all, 2= somewhat, 3= quite a bit and 4= a great deal. The positive religious coping subscale (PRC) of the Brief RCOPE taps into a sense of connectedness with a transcendent force, a secure relationship with a caring God, and a belief that life has a greater benevolent meaning. The negative religious coping subscale (NRC) of the Brief RCOPE is characterized by signs of spiritual tension, conflict and struggle with God and others, as manifested by negative reappraisals of God's powers (e.g., feeling abandoned or punished by God), demonic reappraisals (*i.e.*, feeling the devil is involved in the stressor), spiritual questioning and doubting, and interpersonal religious discontent.

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PRC is most strongly and consistently related to measures of positive psychological constructs and spiritual well-being while NRC generally behaves in the opposite manner. NRC is consistently tied to indicators of poor functioning, such as anxiety, depression, PTSD symptoms, negative affect, and pain (Pargament & Koenig 2011). Pargament, Smith, Koenig and Perez (1998) report an internal consistency (Cronbach alpha) between 0.76 and 0.90

Mental Health

The Mental Health Inventory (MHI-38) which was developed by Veit and Ware (1983) will be used to measure mental health. It is a 38-item scale which asks about respondent's feelings during the past month (Vilchinsky & Kravetz, 2005). It contains six subscales which measure Anxiety, Depression, Loss of Behavioral/Emotional control, General Positive Affect, Emotional Ties and Life Satisfaction, these subscales can be grouped into two global subscales namely; psychological well-being and psychological distress (*psychological well-being*- General Positive Affect, Emotional Ties and Life Satisfaction; *psychological distress*- Anxiety, Depression and Loss of Behavioral/Emotional control). Items on the scale can also be scored into one mental health index. Each item is scored on a 6-point likert scale with the exception of two items; 9 and 28 which are scored on a 5-point likert scale. High scores on each of the subscales indicate high levels of the construct being measured. Due to this, items are sometimes reverse-scored in order to reflect high levels of the construct being measured (Davies, Sherbourne, Peterson & Ware, 1998). Scores on the psychological well-being, psychological distress and mental health index global subscales range from 14-84, 24-142 and 38-226 respectively. The scale is reported to be highly reliable and valid (Veit & Ware, 1983). The MHI-38 subscales are found to correlate significantly with other

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scales measuring the same constructs (Vilchinsky & Kravetz, 2005). For the psychological well-being, psychological distress and mental health index subscales, Vilchinsky and Kravetz (2005) in their study found the internal consistency to be $r = .92$, $r = .95$ and $r = .96$ respectively, which is similar to Florian and Drory's (1990) findings ($r = .91$, $r = .95$ and $r = .96$) respectively. A study conducted by Atefoe (2013) recorded .86, .89 and .88 for psychological well-being, psychological distress and mental health index subscales respectively. Examples of items on the scale include: "During the past month, how much of the time have you generally enjoyed the things you do", "Did you feel depressed during the past month" and "How much of the time, during the past month, have you been a very nervous person".

Procedure

An ethical approval was obtained from the Ethics Committee for Humanities of University of Ghana, Legon. Once the approval was granted, an introductory letter from the Department of Psychology was taken to Health Directorate, Stroke Unit and the Physiotherapy Unit of Korle-bu Teaching Hospital. This was to test the questionnaires on the sample to find out if they are reliable on the sample and whether the items on the questionnaires are well understood by the participants. After permission was granted at the hospital, a date was scheduled for the beginning of the data collection. The services of two research assistants were employed for the data collection and they were given training on the administration of the questionnaires. The two research assistants with the researcher collected the data under confidential conditions to informal caregivers and non-caregivers of stroke patients at Korle-bu.

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Scoring:

Perceived Stress Scales (PSS) is a ten item self-report likert scale of which scores are obtained by reversing responses (0 = 4, 1 = 3, 2 = 2, 1 = 3 & 0 = 4) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. Higher perceived stress scale scores are associated with higher levels of stress and indicate a greater likelihood for stress interfering with things like lifestyle changes and their ability to improve their quality of life. Higher scores are associated with an increase in a person's vulnerability to compromised health especially if a big life stress occurs in the near future. Higher scores are also associated with increased susceptibility to stress-induced illness. The total score ranging from 0-7 means much lower than average, 8-11 represent slightly lower than average, 12-15 means average, 16-20 also means slightly higher than average and 21 and above represent much higher than average.

Mental Health Inventory (MHI) is a 38- item scale and all of the 38 MHI items except 2 are scored on a six point scale (range 1-6). Items 9 and 28 are exception, each scored on a five- point scale (range 1-5). The MHI produces a profile with six domain scores or subscales namely *anxiety, depression, loss of behavioral / emotional control, general positive affect, emotional ties* and *life satisfaction*. Scoring is made relatively complicated by the fact that items making up the various subscales and global scales may be recoded (or reversed scored) differently depending on the underlying construct being measured. Of the 38 items 35 are used to score the six mental health subscales (items 2, 22 and 38 are omitted from the subscales). Each item appears in only one subscale and all items are reversed with exception of items 8, 14 and 18.

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The mental health inventory can globally aggregated into two subscales which are *psychological well-being* and *psychological distress*. Psychological well-being includes: general positive affect, emotional ties and life satisfaction and psychological distress includes: anxiety, depression and loss of behavioral/ emotional control. Summery scale with psychological distress indicating negative states of mental health and psychological well-being indicating positive states. Together, they use all 38 items to derive the scores (24 items for distress with scores range 24-142, 14 items for well-being with scores range 14-84) with no item overlap.

The multidimensional scale of perceived social support is a brief administer self -report questionnaire which contains 12 items rated on a seven-point likert- type scale with scores ranging from very strongly disagree (1) to very strongly agree (7). MSPSS is intended to measure the extent to which an individual perceives social support from three sources: Significant others (items 1, 2, 5 and 10), family (items 3, 4, 8 and 11) and Friends (items 6, 7, 9 and 12). A higher scores on each subscale indicates a higher perceived social support by the participants.

Brief RCOPE is a 14-item scale which is used to measure religious coping. It has two subscales which are positive religious coping (PRC) and negative religious coping (NRC). PRC has items 1-7 while NRC includes items 8-14. Higher scores on positive religious coping correlates more psychological well-being and symptoms and higher scores on negative religious coping also correlates more psychological distress and its symptoms.

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CHAPTER FOUR

RESULT

INTRODUCTION

This chapter contains results of the analyses done on the data collected. To test the stated hypotheses, the SPSS version 18 was used to analyze the data. Following all the assumptions required for parametric test selection and usage, the hypotheses were tested with independent sample t-test, Multiple Regression, and Pearson product moment correlation.

The independent t-Test was used to find out if there is a difference in the means scores of caregivers and non-caregivers on mental health (Psychological wellbeing and psychological distress). Multiple Regression was also used in exploring the predictive nature of social support and psychological distress. Person's r was used to explore the relationship between duration of caregiving and psychological distress, and to find out the direction and the degree of the relationships.

Descriptive Statistics

The summary of the means and standard deviations of scores on religious coping, social support, and the mental health outcomes (psychological well-being and psychological distress) as well as internal consistency of scales (Cronbach α) are presented in Table 2.

*Predictors of Mental Health Among Informal Caregivers of Stroke Patients***Table 2: Means, Standard deviation, Skewness, Kurtosis and Cronbach Alpha of variables**

Variables	Means	SD	skewness	kurtosis	Alpha (α)
Wellbeing	59.21	18.25	.31	-1.00	.64
GPA	46.23	9.47	-.56	-.34	.73
ET	10.12	4.73	.07	1.56	.28
LS	2.86	1.47	.03	-1.24	.70
Distress	58.00	17.20	-.49	-.20	.89
Anxiety	25.40	8.21	.24	-.94	.81
Depression	9.82	5.19	.82	.63	.56
LOB/EC	22.78	6.62	.50	-.40	.71
Social support	46.28	15.43	-.53	-.19	.89
Family	11.04	5.81	.83	-.63	.91
Friends	17.70	6.27	-.88	-.38	.86
Sig. Others	17.54	6.62	-.35	-.62	.76
Rel. Coping	36.52	8.67	.50	.54	.59
PRC	26.38	7.35	.45	.78	.58
NRC	10.14	4.08	.78	.84	.68
Stress	22.83	5.21	.50	.85	.63

PRC- Positive religious coping, NRC- Negative religious coping, SS Family- Social support by Family, SS Friends- Social support by Friends, SS Sig. others- Social support by significant others, LOB/EC- Loss of behavior/ Emotional Control, GPA- General Positive Affect, ET- Emotional Ties and LS- Life satisfaction.

Table 2 present the distribution statistics of the variables (Psychological well-being, distress, social support, religious coping and stress) and their components or domains. The study variables were tested for normality, using skewness and kurtosis analysis. As shown in Table 2, the skewness values range from -.88 - .78 and kurtosis value from –

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1.24 – 1.56. Skewness and kurtosis value with the range of +/-2 are generally considered normal (Field, 2013).

Table 3: Correlation matrix representing the relationship among psychological wellbeing, psychological distress, social support and religious coping.

Variables	1	2	3	4	5	6	7
1. Psych. Wellbeing							
2. Psych. Distress	-.49**						
3. Social support	.24**	-.18*					
4. Religious Cop.	-.21*	.17*	-.08				
5. Stress	-.18*	.47**	-.15	.33**			
6. Duration of care	-.05	.21*	.02	.06	.07		
7. Age	-.39**	.44**	.09	.05	.33	.32**	

*Significant at the .05 level of significance (2-tail) **significant at the .01 level of significance (2-tail)

Table 3 show that psychological wellbeing had a negative relationship all the predictors excluding social support which had a positive relationship with psychological wellbeing and psychological distress had a positive relationship with the predictor except social support.

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Table 4: Correlation matrix representing the relationship among Components of distress, wellbeing, social support and religious coping.

Variables	1	2	3	4	5	6	7	8	9	10
1. PRC										
2. NRC	.06									
3. SS Family	-.11	.16								
4. SS Friends	-.05	-.35**	.36*							
5. SS sig. others	.03	.06	.59**	.60**						
6. Anxiety	-.05	.37**	.02	-.22*	.03					
7. Depression	.03	.30**	-.13	-.30**	-.18	.62**				
8. LOB/EC	-.02	.46**	-.05	-.34*	-.06	.83**	.67**			
9. GPA	.01	-.48**	.08	.37**	.14	-.61**	-.64**	-.68**		
10. ET	.04	-.30**	-.07	.26*	.07	-.14	-.14	-.14	.32**	
11. LS	-.15	.37**	.13	.22*	.06	.74**	.54**	.65**	-.48**	-.24*

*Significant at the .05 level of significance (2-tail) **significant at the .01 level of significance (2-tail)

PRC- Positive religious coping, NRC- Negative religious coping, SS Family- Social support by Family, SS Friends- Social support by Friends, SS Sig. others- Social support by significant others, LOB/EC- Loss of behavior/ Emotional Control, GPA- General Positive Affect, ET- Emotional Ties and LS- Life satisfaction.

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It was observed from the correlation matrix (Table4) that negative religious coping had a negative significant relationship with social support by friends [$r(98) = -.35, p < .01$], General Positive Affect [$r(98) = -.48, p < .01$] and Emotional Ties [$r(98) = -.30, p < .01$]. It had a positive significant relationship with Anxiety [$r(98) = .37, p < .01$], Depression [$r(98) = .30, p < .01$] and Life satisfaction [$r(98) = .37, p < .01$].

Social support by friends had a positive significant relationship with social support by significant others [$r(98) = .60, p < .01$], general positive affect [$r(98) = .37, p < .01$], emotional ties [$r(98) = .26, p < .05$] and life satisfaction [$r(98) = .22, p < .05$]. It had a negative significant relationship with anxiety [$r(98) = -.22, p < .05$], depression [$r(98) = -.30, p < .01$] and loss of behavioral/ emotional control [$r(98) = -.34, p < .01$].

Table 3 anxiety had a positive significant relationship with depression [$r(98) = .62, p < .01$], loss of behavioral/ emotional control [$r(98) = .83, p < .01$] and life satisfaction [$r(98) = .74, p < .01$]. However, anxiety had a negative significant relationship with general positive affect [$r(98) = -.61, p < .05$]. There was no significant relationship between anxiety and emotional ties [$r(98) = -.14$]. Depression had a significant positive relationship with loss of behavioral /emotional control [$r(98) = .62, p < .01$] and life satisfaction [$r(98) = .54, p < .01$], but had a negative significant relationship with general positive affect [$r(98) = -.64, p < .01$]. Depression did not have any significant relationship with emotional ties [$r(98) = -.14$].

General positive affect had a positive significant relationship with emotional ties [$r(98) = .32, p < .01$] and a negative relationship with life satisfaction [$r(98) = .02, p < .05$].

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Emotional ties had a negative significant relationship with life satisfaction [$r(98) = -.24, p < .05$].

TESTING HYPOTHESES

H1 a: *Non caregivers are likely to report better psychological wellbeing than Family caregivers.*

To analyze this hypothesis, independent t-test was used to compare caregivers of stroke patients and non-caregivers on psychological distress. Summary of the findings are presented in Table 5.

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Table 5: Summary result of independent sample t-test comparing caregivers and non-caregivers on psychological wellbeing and psychological distress.

Variables	Caregivers			Non-caregivers			<i>df</i>	<i>t</i>	<i>p</i>
	N	Mean	SD	N	Mean	SD			
Psych. Wellbeing	100	59.21	11.24	50	56.16	10.69	148	1.59	.11
Psych. Distress	100	58.00	18.25	50	50.78	13.82	148	2.46	.02

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The results (Table 5) show that the mean and standard deviation differences between caregivers ($M = 59.21$, $SD = 11.24$) and non-caregivers ($M = 56.16$, $SD = 10.69$) on their performance in psychological wellbeing indicates that there is no difference. The independent t result ($t = 1.59$, $df = 148$, $p > .05$) statistically showed no significant difference between caregivers and non-caregivers on psychological wellbeing. The hypothesis that non-caregivers are likely to report better psychological wellbeing than caregivers was not supported.

H1 b: Caregivers will significantly report higher levels of psychological distress than non-caregivers.

Table 5 show that a significant difference exist between caregivers of stroke patients and non-caregivers on psychological distress ($t = 2.46$, $df = 148$, $p < .05$). The results of the means show that caregivers of stroke patients reported higher psychological distress ($M = 58.00$, $SD = 18.25$) compared to non-caregivers ($M = 50.78$, $SD = 13.82$) which was significant at the .05 level of significance. This implies that the hypothesis which states that caregivers will report higher level of psychological distress than non-caregivers was supported.

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H2 a: *Younger caregivers will significantly report better psychological wellbeing than older caregivers.*

The independent samples t- test was used to analyze this hypothesis since this test compares the mean scores of two groups (older and younger) on a given variable (psychological distress)

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Table 6: Summary result of independent sample t-test comparing younger and older caregivers on psychological wellbeing and psychological distress.

Variables	Younger caregivers			Older caregivers			<i>df</i>	<i>t</i>	<i>p</i>
	N	Mean	SD	N	Mean	SD			
Psych. Wellbeing	74	61.20	10.70	26	53.54	10.98	98	3.12	.002
Psych. Distress	74	53.96	18.15	26	69.50	13.10	98	- 4.01	.000

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From Table 6, the result shows that the mean differences between younger caregivers ($M = 61.20$, $SD = 10.70$) and older caregivers ($M = 53.54$, $SD = 10.98$) on their psychological wellbeing was found to be statistically significant ($t = 3.12$, $df = 98$, $p < .05$). This indicates that the hypothesis that states that younger caregivers will significantly report better psychological wellbeing than older caregivers was supported.

H2 b: Older caregivers will significantly report more psychological distress than younger caregivers.

The result (Table 6) show that there was a significant difference in psychological distress of younger ($M = 53.96$, $SD = 18.15$) and older ($M = 69.50$, $SD = 13.10$). This was significant ($t = -4.01$, $df = 98$, $p < .05$). Thus hypothesis 3b which stated that older caregivers will significantly report more psychological distress than younger caregivers was supported.

H3 a: Components of social support (family, friends, and significant others) will significantly predict psychological wellbeing.

A standard multiple regression was performed by regressing psychological wellbeing on the components of social support and to find out which of the components of social support significantly predicted psychological wellbeing. This is shown in Table 6.

*Predictors of Mental Health Among Informal Caregivers of Stroke Patients***Table 7: Multiple Regression Result for the contribution of psychological wellbeing by social support (Family, friends & significant others).**

Predictors	B	Std Error	Beta(β)	t	p
(Constant)	48.30	3.411		14.16	.00
SSFamily	-.12	.22	-.06	-.53	.60
SSFriends	.82	.21	.46	3.95	.00
SSSignificant others	-.13	.23	-.79	-.59	.56

Predictors: SSFamily, SSFriends and SSSignificant others

Dependent variable: Psychological wellbeing

Table 7 show that a significant model emerged [$F(3,96) = 6.23, p < .05$], when the predictors were regressed onto the dependent variable (psychological wellbeing), it was found that family, friends and significant others accounted for 13.7% of the variance which was statistically significant [$R = .404, R^2 = .163, \Delta R^2 = .137, F(3,96) = 6.23, p < .05$]. Social support by friends positively predicted psychological wellbeing ($\beta = .46, p < .05$). Thus, hypothesis 3a which states that components of social support (family, friends, and significant others) will significantly predict psychological wellbeing was supported.

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H3 b: *Components of social support (family, friends, and significant others) will significantly predict psychological distress.*

Table 8: Multiple Regression Result for the contribution of psychological distress by social support (Family, family & significant others).

Predictors	B	Std Error	Beta(β)	t	p
(Constant)	70.44	5.692		12.38	.00
SSFamily	-.03	.37	-.01	-.07	.95
SSFriends	-1.22	.35	-.42	-3.50	.00
SSSignificant others	.53	.38	.19	1.40	.17

Predictors: SSFamily, SSFriends and SSSignificant others

Dependent variable: Psychological distress

Multiple regression was conducted with psychological distress and the components of social support (family, friends and significant others). A significant model emerged [$R = .341$, $R^2 = .116$, $\Delta R^2 = .089$, $F(3,96) = 4.22$, $p < .05$]. Further analysis was carried out to find out which of the components of social support significantly predicted psychological distress among caregivers. The analysis of multiple regression showed that the most significant predictor of psychological distress of caregivers was social support by friends which contributed 8.9% of the variance in psychological distress [$\beta = -.42$, $t = -3.50$, $p < .001$]. Thus, hypothesis 3b which states that Components of social support (family, friends, and significant others) will significantly predict psychological distress was supported.

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H4 a: *There will be a negative significant relationship between negative religious coping and psychological wellbeing.*

Table 9: Summary of Pearson r Test, Means, SD of negative religious coping and psychological wellbeing.

Variables	N	Mean	SD	r	p
Negative Rel. Coping	100	10.14	4.08	-.48	.00
Psychological wellbeing	100	59.21	18.25		

From Table 9, the result indicates that there was a significant negative correlation between negative religious coping ($M = 10.14$, $SD = 4.08$) and psychological wellbeing [$M = 59.21$, $SD = 18.25$; $r = -.48$, $p < .05$]. Thus hypothesis 4a which states that there will be a negative significant relationship between negative religious coping and psychological wellbeing was supported.

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H4 b: *There will be a positive significant relationship between negative religious coping and psychological distress*

Table 10: Summary of Pearson r Test, Means, SD of negative religious coping and psychological distress.

Variables	N	Mean	SD	r	p
Negative Rel. Coping	100	10.14	4.08	.41	.00
Psychological distress	100	58.00	17.20		

From Table 10, the result indicates that there was a significant positive correlation between negative religious coping (M = 10.14, SD = 4.08) and psychological distress [M = 58.00, SD = 17.20; $r = .41$, $p < .05$]. Thus hypothesis 4b which states that there will be a positive significant relationship between negative religious coping and psychological wellbeing was supported.

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H5: *There will be a positive relationship between duration of caregiving and psychological distress.*

Table 11: Summary of Pearson r Test, Means, SD of duration of caregiving and psychological distress.

Variables	N	Mean	SD	r	p
Duration	100	12.56	7.14	.21	.04
Psychological distress	100	58.00	18.25		

It is observed from the correlation (Table 11) that a significant positive relationship exist between duration of caregiving ($M = 12.56$, $SD = 7.14$) and psychological distress ($M = 58.00$, $SD = 18.25$); [$r = .21$, $p < .05$]. Thus, hypothesis 6 which states that there will be a positive relationship between duration of caregiving and psychological distress was confirmed.

H6: *Stress will moderate the relationship between social support, religious coping and psychological distress.*

Baron and Kenny (1986) indicated that, a moderator is a third variable which has the tendency of changing the direction of a bivariate relationship. To test this, a hierarchical regression analysis was used.

*Predictors of Mental Health Among Informal Caregivers of Stroke Patients***Table 12: Hierarchical Multiple Regression analysis of the moderation effect of stress on the relationship between social support, religious coping and psychological distress.**

Predictor	B	Std Error	Beta(β)	t	p	R ²
1 (Constant)	53.79	9.79		5.49	.00	.055
Social support	-.18	.12	-.16	-1.57	.12	
Religious coping	.35	.21	.17	1.67	.10	
2 (Constant)	20.92	10.38		2.02	.05	.287
Social support	-.08	.10	-.07	-.74	.46	
Religious coping	-.04	.19	-.02	-.18	.86	
Stress	1.84	.33	.52	5.58	.00	
3 (constant)	22.78	10.63		2.14	.04	.292
Social support	-.05	.11	-.04	-.41	.69	
Religious coping	-.13	.23	-.06	-.59	.56	
Stress	1.84	.33	.53	5.59	.00	
Ss_relcop*stress	-.08	.10	-.09	-.84	.41	

1 R=.235, R²=.055, ΔR^2 =.036. 2 R=.535, R²=.287, ΔR^2 =.264. 3 R=.540, R²=.292, ΔR^2 =.262

Predictors: (constant), social support, religious coping and stress.

Dependent variable: Psychological distress

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From Table 12, social support independently did not predict psychological distress, ($\beta = -.18$, $t = -1.57$, $p > .05$) and religious coping did not predict psychological distress independently ($\beta = .35$, $t = 1.67$, $p > .05$). Again, before the introduction of the moderating variable (stress), 3.6% of the variation in psychological distress was explained by social support and religious coping. Stress then explained 26.4% of the variation in psychological distress after the moderator has been introduced. The interaction between social support, religious coping and stress however was not significant ($R = .540$, $R^2 = .292$, $\Delta R^2 = .262$, $\beta = -.082$, $t = -.837$). Thus, hypothesis 6 which states that stress will moderate the relation between social support, religious coping and psychological distress was not supported.

Summary of findings:

1. Caregivers of stroke patients and non-caregivers did not differ on psychological wellbeing. However caregivers of stroke patients experienced psychological distress than the non-caregivers.
2. Older and younger caregivers of stroke patients differed on psychological wellbeing. Older caregivers were psychologically well than younger caregivers. Young caregivers of stroke patients were better psychologically distressed than older caregivers.
3. There was a significant relationship between social support and psychological wellbeing. Social support from friends predicted psychological wellbeing while social support from family and significant others had a negative relationship with psychological wellbeing.
4. There was also a significant relationship between psychological distress and social support among caregivers of stroke patients.

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5. A positive significant relationship existed between negative religious coping and psychological distress and a significant negative relationship with psychological wellbeing.
6. Relationship between duration of caregiving and psychological distress was positively significant
7. Stress did not moderate the relationship between social support, religious coping and psychological distress.

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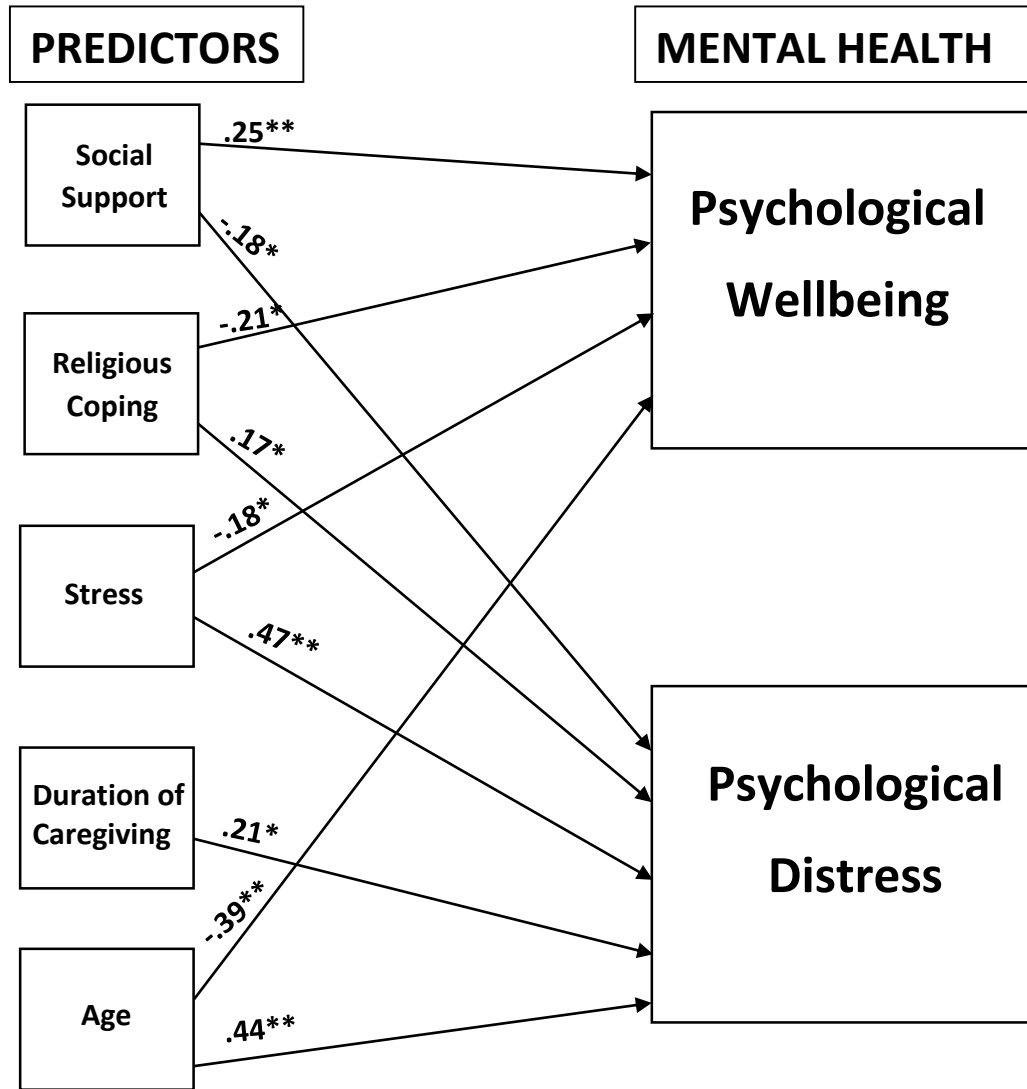


Figure 2 Observed relationships among research variables

Observed Conceptual Model: The findings of the study are summarized in Figure 2

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CHAPTER FIVE

DISCUSSION

INTRODUCTION:

People with stroke, chronic, debilitating and life threatening illnesses rely heavily on caregivers for their care. The caregivers play an important role in supporting these people. Too often, complete focus is on the ill person, their physical as well as psychological wellbeing. Such is the focus that, we lose sight of the fact that the caregiving role as well as the condition of the sick person takes a toll on the caregiver, particularly on their mental health. This study was to evaluate and assess some predictors of mental health among informal caregivers of stroke patients and specific objectives were; to examine the relationship between caregiving and mental health; to assess the connection between duration of caregiving and levels of mental health; to find out how age contribute to mental health among caregivers of stroke patients; to examine the association between religious coping and mental health and to assess the contribution of social support on mental health of informal caregivers.

To achieve the above aims and objectives, several hypotheses were tested. Based upon the preceding statistical data analysis and the result, this chapter attempts to discuss some of the findings among informal caregivers and their mental health, Age and mental health, social support and mental health, Religious coping and mental health and duration of caregiving and mental health. Finally, this chapter presents limitations, recommendations, and conclusions.

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Discussion of Findings:

Caregivers, non-caregivers and mental health.

The findings of the study did not support the hypothesis that non-caregivers will report better psychological wellbeing than caregivers. It was found that there was no significant difference between caregivers and non-caregivers on psychological wellbeing. Possibly, some caregivers may be motivated to provide care for several reasons such as a sense of love or reciprocity which is a social norm and spiritual fulfilment. This is consistent with studies which reported low prevalence of depression among caregivers of stroke survivors (Bakas et al., 2006; Fatoye et al., 2006). Some studies however reported high prevalence of depression among caregivers of stroke survivors (Berg et al., 2006; Grant et al., 2004; Khalid & Kausar, 2008).

The second hypothesis suggested that caregivers will significantly report higher levels of psychological distress than non-caregiver. The study found that caregivers were psychologically distressed as compared to non-caregivers. This may be due to the fact that stroke usually has a sudden onset and so caregivers are mostly unprepared but still have to take on the care of survivors and cope with the situation. As most survivors become dependent on their family caregivers for their day to day activities depending on the severity of the stroke, it puts strain on the physical and psychological well-being of the caregivers which non-caregivers do not experience. Sometimes the stress level could be overwhelming and result in other serious psychological problems including depression.

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It is therefore not surprising that caregivers reported higher level of depression, anxiety and loss of behavior or emotional control than non-caregivers. Caregivers of stroke patients would therefore have higher level of depression compared to the general population, the severity however may depend on other factors (Pearlin et al., 1990). Depression is one of the most reported psychological outcomes of caregiving of stroke survivors in the literature (Haley et al., 2009; Khalid & Kausar, 2008). The finding of the present study is consistent with other studies that reported higher rates of depression among caregivers than non-caregivers (Han & Haley, 1999).

Age and Mental health among informal caregivers:

The findings revealed that age of caregivers had a significant relationship with psychological wellbeing. This implies that caregiving in stroke patients has different impact on the emotional/ psychological health of the caregivers across the various age groups. It was however found that younger caregivers reported better overall psychological wellbeing than older caregivers. Older caregivers may be troubled with more burden as they are more likely to be playing other roles in society in addition to giving care than the younger caregivers. They are also more likely to give up other aspects of their lives such as job in order to devote themselves to taking care of the patient than the younger caregivers would be willing to. They may therefore perceive a decline in their psychological wellbeing compared to younger caregivers. Even though studies have found a significant relationship between caregiver age and psychological wellbeing, the domains of quality of life which are most affected by age have not been consistent across studies (Fatoye et al., 2006).

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Khalid and Kausar's (2008) found that caregiving in older age may be less demanding because of few responsibilities and role conflict (e.g. between work and family). Conflict among roles begins because of human desire to reach success but in older age the individual might be on the way of achieving success or has been successful so there is no pressure on him or her than a younger caregiver who wants to succeed. Again majority of older adults take pleasure in loving relationships and are more effective in solving everyday problems as compared to younger adults or caregivers. Another possibility is that older caregivers may have had more time to develop resources and coping strategies that reduce their levels of psychological distress.

Okoye (2011) found that younger caregivers experienced more stress in their caregiving role than older caregivers because younger people are grappling with a lot more in their lives than older caregivers and so caregiving may not give them the needed time to attend to other thing that interest them. Additionally, younger caregivers particularly those in midlife, are more likely to have additional major social roles such as work and other caregiving roles that include raising children and caring for aging parents.

Studies found caregiver age to be predictive of depression in the patient but not the caregiver (Khalid & Kausar, 2008). Fatoye et al. (2006) reported that older age of the informal caregiver was correlated to depression. Some studies have found no significant relationship between the two (Draper et al., 1992) which is not consistent with the present finding. Moreover, the findings on the relationship between age and mental health among caregivers of stroke survivors have been quite inconsistent (Jönsson et al., 2005; Smith et al., 2004; van den Heuvel et al., 2001; Visser-Meily et al., 2008).

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Social support and mental health among informal caregivers:

One of the objectives of the present study was to find out whether social support have significant influence on mental health of caregivers of stroke patients. It was found out that social support influence mental health significantly especially support from friends. A strong social support network can be critical to help through the stress of tough times, whether individual had had a bad day at work or taking care of somebody who is sick with chronic or terminal illness. A support network is made up of friends, family and peers which can be developed when an individual is not under any stress. It provides the comfort of knowing that friends are there when the need arise. Social support can be characterized in various ways, support can be defined by function or purpose of the interaction such as doing enjoyable things, sharing affection or exchanging advice or information.

The stress and coping perspective suggests that social support is one of the coping resources of stress and therefore lessens the effects of stressful life events on health through either supportive actions of others or the belief that support is available (Lakey & Cohen, 2000). Supportive actions of others are found to enhance an individual's coping ability while perceptions of available support may lead to evaluating potentially threatening situations as less stressful (Lazarus, 1966; Lazarus & Folkman, 1984). This implies that individuals going through major life stressors such as illnesses, who perceive that social support is available, would interpret their situations as less stressful. This enhances the individual's capacity to cope with the situation and in turn has beneficial effects on both physical and psychological well-being (Kawachi & Berkman, 2001).

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Having a network of supportive relationships contributes to psychological well-being because when an individual have a social support network, he or she benefit in many ways. An individual feels a sense of belonging just knowing that he/she is not alone can go a long way towards coping with stress. Having people who an individual calls friends reinforces the idea that he/she is a good person to be around and it's comforting to know that the individual has people he can turn to in time of need.

Several studies report positive influence of social support on mental health outcomes (Lowe et al., 2010; Mikulincer & Shaver, 2008; Walen & Lachman, 2000; Zhang, 2012), it has been noted that the positive influence of social support may be influenced by the quality of the relationship, thus the positive influence of perceived availability of support may be reduced by conflict in the relationships that may provide the support (Miller & Ray, 1994; Pierce, Sarason & Sarason, 1992). Vangelisti (2009) also illustrated that even though individuals may perceive the consequences of receiving support as positive, the cost of receiving such supports may sometimes be seen to overshadow the benefits, or perhaps the processes involved in receiving the support may be considered as adverse. In other instances, the available sources of support may be perceived as incapable of giving the help needed; consequently, the positive influence of perceived support might not be felt by the individual.

Chiou, Chang, Chen and Wang (2009) reported that caregivers who had high social support also reported lower caregiver burden which could translate positively into better quality of life compared to those who have low social support.

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Religious coping and mental health among informal caregivers:

This study also sought to find out the relationship between religious coping, psychological distress and wellbeing. Owing to this, the hypothesis that the relationship between negative religious coping, psychological distress and wellbeing among caregivers of stroke patients will be statistically significant was tested.

Religious coping was found to have a significant positive relationship with psychological well-being and a significant negative relationship with psychological distress. That is, results revealed that there was a significant positive correlation between negative religious coping and psychological distress. Caregivers who scored higher on negative religious coping scored high on psychological distress. This result supports the findings of Trevino et al. (2012).

The relationship between religiosity and mental health in the present sample can be explained from a cognitive-behavioral framework, based on the religious coping theory (Pargament, 1997). An individual's religiosity is likely to provide a framework for forming mental schemas or models which guides his/her appraisals of life events, especially in stressful events and enables the individual to make meaning of his/her life (James & Wells, 2003). This mechanism has the potential of influencing mental health positively or negatively, depending on the content of the schema.

Religion is said to provide an optimistic world view which involves a supernatural force (e.g. God) who is considered as loving and caring about humans and controls all things which also in turn increases a person's sense of control, provides answers to existential

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questions such as “Where do we come from?” and “Where are we going?” (Koenig, 2012; Smith, 2003). Hence, negative life events become less distressing for religious persons, and this may translate into positive mental health outcomes. Again certain religious beliefs strengthen an individual’s sense of control over life events and situations (Smith, 2003). Beliefs such as “God is all knowing”, “directs the path of his children”, and “He gives His children strength to overcome challenges” as well as “making all things work together for their good” also help to reduce psychological distress since a sense of control has been found to reduce psychological distress (Keeton, Perry-Jenkins & Sayer, 2008).

Some researchers (Ellison, 1994; Grasmick, Bursik & Cochran, 1991; Pargament, 1997) have theorized that religiosity influences psychological wellbeing in two ways. Either religiosity reduces one’s exposure to stress or if it cannot reduce the stress, it provides resources for coping with the stress. This study found that caregivers who experienced spiritual tension, conflict and struggle with God and others. That is, negative reappraisals of God’s powers (e.g., feeling abandoned or punished by God), demonic reappraisals (i.e. feeling the devil is involved in the stressor), spiritual questioning and doubting and interpersonal religious discontent had higher levels of psychological distress and lower levels of psychological wellbeing.

These results are consistent with studies that showed a relationship between mental health and religious coping. Herbert, Dang and Schulz (2007) reported that religious attendance, prayer, and beliefs are associated with less depression in active caregivers.

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Some studies however did not find any interaction between religiosity and stress on mental health outcomes (Cruz, Pincus, Welsh, Greenwld, Lasky et al., 2010).

Duration of caregiving and mental health among informal caregivers:

It was hypothesized that there will be a positive relationship between duration of caregiving and psychological distress. It was found that the duration of caregiving significantly predicted mental health. This may be because stroke usually has a sudden onset and so caregivers are mostly unprepared but still have to take on the care of survivors and cope with the situation. As most survivors become dependent on their family caregivers for their day to day activities depending on the severity of the stroke. This creates physical and psychological strain over extended periods of time, is accompanied by high levels of unpredictability and uncontrollability, and frequently requires high levels of vigilance. The caregiver spends more time with the patient to the extent that they feel as though they do not have enough time in the day to complete all required tasks in a given time period. This type of strain when experienced for an extended period of time can result in poor mental health (Pearlin, 1999).

Most caregivers spend most of their time taking care of their relatives who are suffering from stroke. Some caregivers experience poor physical and emotional health as a result from lack of time for other supportive activities such as recreational including games. The poor emotional drive may lead them to depression that will have adverse impact on their relatives with stroke (Han & Haley, 1999). Some researchers believe that caregiving does not really depend on the duration of time that elapse since the beginning

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of care, as studies have revealed that the impact of care giving starts right from the onset of care and continues for about 15-18 months, whether the impact will increase or reduce is dependent on other variables rather than the mere period of time that elapsed (Simon, Kumar & Kendrick, 2009). Other researchers suggest that the number of hours actually spent on taking care of the patient in a day is predictive of quality of life because regardless of whether the care need is acute or chronic, the caregiver may be required to spend large amount of time providing care and the greater the time spent in providing care the more likely caregivers are to report distress (Byun & Evans, 2014; Legg, 2012).

Moderating effect of stress on the relationship between social support, religious coping and psychological distress among informal caregivers.

The study also sought to find out whether the relationship between social support, religious coping and mental health is influenced by perceived stress. Results showed that stress significantly predicted a higher psychological distress among caregivers of stroke patients and did not moderate the relationship between religious coping and social support and psychological distress. As postulated by theorists, religiosity influences mental health by either reducing exposure to stress or providing coping resources for coping with stress (Ellison, 1994; Grasmick, Bursik & Cochran, 1991; Pargament, 1997), the present study found out that religious coping had a negative relationship with stress. This indicates that those who are more religious and uses religious coping are more likely to perceive less stress, which translates into better mental health. The interaction between religious coping and stress was found to be negative but not significant, which means that religious coping might be shielding the

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negative influence of stress on mental health. The finding contradicts with studies which reported an interaction effect between religiosity and stress on mental health outcomes (Smith et al., 2003; Ward, 2010; Wei & Liu, 2013). Some studies however did not find any interaction between religiosity and stress on mental health outcomes (Tabak & Mikelson, 2009).

The present study found out that social support had a negative relationship with stress. This indicates that those who perceive social support and uses social support are more likely to perceive less stress, which translates into psychological wellbeing. The finding however is consistent with the study which found interaction between stress and social support (family, friends and significant others) on mental health outcomes not significant (Atefoe, 2013). Unlike individualistic cultures where studies found an interaction effect between stress and social relationships, Ghana has a collectivist culture hence social relationships are an integral part of the society, hence social relationships are very important to the individual whether the individual is going through stress or not. Social support is an integral part of the society and are more or less like a norm. As the reciprocity norm says, people will happily offer help to each other by returning benefits for benefits and as the golden rule says “do unto others as you would have them do unto you” people get social support from either family, friends or significant others. The perception of stress therefore does not make any difference in the relationship between social relationships and mental health.

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Limitations:

The present study bears the limitations characterized by cross-sectional research, therefore one cannot derive any conclusions on the causality of the associations observed between the variables. Also the study used self-reported measures which relied solely on the accuracy of the information provided by respondents. Caregivers who are at home and were not able to report for reviews with the patients and those who seek medical care in other hospital settings are not represented in the present study because the study was limited to caregivers of stroke survivors who report to Korle-bu Teaching hospital for medical care. The sample used was relatively small and urbanized, it is therefore difficult to generalize findings to larger and rural populations. Certain other predictors as noticed in other studies were not included in the current study. Despite the limitations, the study makes important contributions to our understanding of the impact of caregiving among caregivers of stroke patients in the present sample and population at large, also add to the body of research on stroke and its related issues and set the pace for more research in this area.

Recommendation:

The research found out that social support influences mental health among caregivers of stroke patients. Therefore, African cultural values such as, brotherhood, humanity, mutual help and respect should also be strengthened in order to improve the quality of social relationships, since the perception of frequent negative interactions in relationships affect mental health negatively.

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Health Professionals:

Health care professionals can be one of the significant groups that can provide education and resource information because caregivers were found to be at risk of psychiatric morbidities such as anxiety, depression and loss of behavior or emotional control. The stress model explains that when coping resources are available, it buffers the effect of stress on the caregivers. Again psychological interventions should not only target caregivers' psychological health but also include physical health promotion such as offering opportunities for exercise and nutrition improvement.

Health Sector:

The findings that caregivers were anxious, depressed and had poor mental health has several implications for the Ghana health service and the ministry of health. The health sector should take a holistic approach with respect to the health of caregivers in Ghana since they serve as a major extension to the formal caregiving. The interventions should focus on reducing anxiety, depression and loss of behavior or emotional control and improve mental health. For example, depression screenings and emotional health assessments could be conducted for caregivers. Interventions could be developed that have a focus on health and well-being of the caregivers for example interventions that focus on stress reduction and health promotion activities. The sector should have policies that can deal with caregivers' social support and financial aids. Again the health sector should establish support networks and psychological services for caregivers.

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Caregivers:

Family caregivers of stroke patients are at risk of becoming hidden patients. Caregivers should seek assistance when they are overwhelmed with their caregiving obligations.

The findings also revealed that religious coping had a significant influence on mental health caregivers should be encouraged not focus on religious service attendance, but they should strengthen aspects of their religious faith such as frequency of prayer, relationship with God, and the use of religion as a source of inspiration and comfort in order to improve their mental health.

Future Studies

Finally, future research or studies should use probability sampling technique and large sample size should be used to generalize findings. This studies did not categorize stroke survivors based on the types of stroke suffered by the patients. Different types of stroke may present with different challenges both for the survivor and the caregivers.

Conclusion

The study sought to find out the predictors of mental health and caregivers of stroke patient. One hundred (100) caregivers of stroke patients were used from Korle-bu physiotherapy unit and the stroke unit in Accra. Several hypotheses were tested and the findings of the study revealed that caregivers of stroke patients and non-caregivers did not differ on psychological wellbeing. However, caregivers of stroke patients experienced psychological distress than the non-caregivers. There was also a significant relationship between psychological distress and social support among caregivers of

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stroke patients, a positive significant relationship existed between negative religious coping and psychological distress and a significant negative relationship with psychological wellbeing. Duration of caregiving had a significant positive relationship with psychological distress.

The findings therefore imply that some predictors like social support, religious coping, stress, age and duration of caregiving predicts mental health among informal caregivers of stroke patients. These predictors should be considered when planning interventions in terms of promoting mental health among informal caregivers and reducing ill health of informal caregivers.

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APPENCES

APPENDIX A: Ethical Clearance Letter



UNIVERSITY OF GHANA
ETHICS COMMITTEE FOR THE HUMANITIES (ECH)

P. O. Box LG 74, Legon, Accra, Ghana

My Ref. No.....

19th January 2015

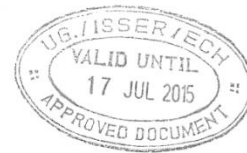
Ms. Elizabeth Dadzie
Department of Psychology
University of Ghana
Legon

Dear Ms. Dadzie,

ECH 036/14-15 PREDICTORS OF MENTAL HEALTH AMONG INFORMAL CAREGIVERS OF STROKE PATIENTS

This is to advise you that the above reference study has been presented to the Ethics Committee for the Humanities for a full board review and the following actions taken subject to the conditions and explanation provided below:

Expiry Date: 17/07/15
On Agenda for: Initial Submission
Date of Submission:: 23/10/14
ECH Action: Approved
Reporting: Quarterly



Please accept my congratulations.

Yours Sincerely,

Rev. Prof. J. O. Y. Mante
ECH Chair

CC: Dr. Benjamin Amponsah, Department of Psychology, University of Ghana
Prof. Samuel Danquah, Department of Psychology, University of Ghana
Prof. C Charles Mate-Kole, Department of Psychology, University of Ghana
Director, ISSER

Tel: +233-244855638

Email: ech@isser.edu.gh

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APPENDIX B:

Letter of Introduction



UNIVERSITY OF GHANA
DEPARTMENT OF PSYCHOLOGY

Tel.: (233-0302) 500381 Ext. 3754/3310 P. O. Box LG 84, Legon - Ghana E-mail: psychology@ug.edu.gh
028 955 04 63

Our Ref. No. PSYC 2/33/01

March 9, 2015.

Korle-Bu Teaching Hospital
Stroke and Physiotherapy Unit
Korle-Bu-Accra

Dear Sir/Madam,

LETTER OF INTRODUCTION
ELIZABETH DADZIE

The above-named is an M.Phil Clinical Psychology student in the Department of Psychology, University of Ghana, Legon. Her identity number is 10278492.

In partial fulfillment of the requirement for the awards of the M.Phil degree, **Elizabeth Dadzie** has to write and submit an original thesis. She has selected the topic: **“Predictors of Mental Health among Informal Caregivers of Stroke Patients”**.

To enable her collect data for her work she would need to administer questionnaires and/or conduct interviews. She has selected your institution as suitable for her data collection.

Any assistance you may give her would be greatly appreciated.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'C.C. Mate-Kole'.

Prof. C.C. Mate-Kole
(Head of Department)

Predictors of Mental Health Among Informal Caregivers of Stroke Patients

APPENDIX C: CONSENT FORM



UNIVERSITY OF GHANA



Official Use only Protocol number
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OFFICE OF RESEARCH, INNOVATION AND DEVELOPMENT

Ethics Committee for Humanities (ECH)

PROTOCOL CONSENT FORM

Section A- BACKGROUND INFORMATION

Title of Study:	Predictors of Mental Health Among Caregivers of Stroke Patients
Principal Investigator:	Elizabeth Dadzie
Certified Protocol Number	

Section B- CONSENT TO PARTICIPATE IN RESEARCH

General Information about Research

The aim of the research is to ascertain factors which contribute to optimum and poor mental health among caregivers of stroke patient and to explore the role of coping mechanisms like social support and religious coping in mental health of caregivers. Your task will be to fill out the questionnaires given to you as truthfully as possible. It would take approximately 30minutes -1 hour to complete the questionnaires.

Possible Risks and Discomforts

You may experience some level of fatigue. Steps will be taken to allow for intermittent breaks in order to minimize fatigue.

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Possible Benefits

There are no benefits for participation.

Confidentiality

Please be assured that the information you will provide would be used only for the purpose of research and there is no wrong or right answer. Your cooperation is fully appreciated. *You are not required to provide your name on any of the questionnaires or during interview, and any information you provide will be protected as much as possible.*

Compensation

There will be no material compensation, but your participation will be very much appreciated.

Withdrawal from Study

Participation in this research is completely voluntary. You have the right to say no. You may change your mind at any time and withdraw. You may also choose not to answer specific questions or to stop participating at any time.

Contact for Additional Information

In case of any doubt or/and for additional information concerning the study you may contact the Principal Investigator; Elizabeth Dadzie University of Ghana, Department of Psychology, Legon Telephone: 0207363952 /0242921797 or email address: elizdaz@yahoo.com

Section C- VOLUNTEER
AGREEMENT

"I have read or have had someone read all of the above, asked questions, received answers regarding participation in this study, and am willing to give consent for me, my child/ward to participate in this study. I will not have waived any of my

Predictors of Mental Health Among Informal Caregivers of Stroke Patients

rights by signing this consent form. Upon signing this consent form, I will receive a copy for my personal records."

Name of Volunteer

Signature or mark of volunteer

Date

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Name of witness

Signature of witness

Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

Name of Person who Obtained Consent

Signature of Person Who Obtained Consent

Date

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APPENDIX D:

DEMOGRAPHICS AND RELIGIOUS COPING QUESTIONNAIRES

A. DEMOGRAPHIC INFORMATION

Please, tick where appropriate but some questions will require your personal opinion.

1. Gender: Male Female
2. Age: 18-24 25-34 35-44 45-54 55 and above
3. Marital Status:
 - a. Single b. Married c. Divorce d. Widow
4. Religion:
 - a. Christian b. Muslim c. Traditional d. Others
5. Employment Status:
 - a. Employed b. Unemployed c. Retired
6. Educational Level:
 - a. Primary b. JHS c. SHS d. Tertiary e. Others
7. Duration / length of caregiving

B. BRIEF RCOPE

Please answer the following questions about religious coping using the scale below. Indicate the level of not at all or a great deal for each statement by circling 1, 2, 3 or 4.

1= not at all 2= somewhat 3= quite a bit 4= a great deal

1. Looked for a stronger connection with God. 1 2 3 4
2. Sought God's love and care 1 2 3 4
3. Sought help from God in letting go of my anger. 1 2 3 4
4. Tried to put my plans into action together with God. 1 2 3 4

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- | | |
|---|---------|
| 5. Tried to see how God might be trying to strengthen me in this situation. | 1 2 3 4 |
| 6. Asked forgiveness for my sins. | 1 2 3 4 |
| 7. Focused on religion to stop worrying about my problems. | 1 2 3 4 |
| 8. Wondered whether God had abandoned me. | 1 2 3 4 |
| 9. Felt punished by God for my lack of devotion. | 1 2 3 4 |
| 10. Wondered what I did for God to punish me. | 1 2 3 4 |
| 11. Questioned God's love for me. | 1 2 3 4 |
| 12. Wondered whether my church had abandoned me. | 1 2 3 4 |
| 13. Decided the devil made this happen. | 1 2 3 4 |
| 14. Questioned the power of God. | 1 2 3 4 |

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APPENDIX E:

PERCEIVED STRESS SCALE

Questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly? **0 1 2 3 4**
2. In the last month, how often have you felt that you were unable to control the important things in your life? **0 1 2 3 4**
3. In the last month, how often have you felt nervous and “stressed”>? **0 1 2 3 4**
4. In the last month, how often have you felt confident about your ability to handle your personal problems? **0 1 2 3 4**
5. In the last month, how often have you felt that things were going your way? **0 1 2 3 4**
6. In the last month, how often have you found that you could not cope with all the things that you had to do? **0 1 2 3 4**
7. In the last month, how often have you been able to control irritations in your life? **0 1 2 3 4**
8. In the last month, how often have you felt that you were on top of things? **0 1 2 3 4**
9. In the last month, how often have you been angered because of things that were outside of your control? **0 1 2 3 4**
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? **0 1 2 3 4**

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APPENDIX F:

MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT (MSPSS)

Instructions: The items tended to divide into factor groups relating to the source of the social support, namely family, friends or significant other. Read each statement carefully and indicate how you feel.

1=Very Strongly Disagree, 2= strongly disagree, 3= mildly disagree, 4= Neutral, 5= mildly agree, 6= strongly agree and 7= Very Strongly Agree

- | | |
|---|------------------------|
| 1. There is a special person who is around when I am in need | 0 1 2 3 4 5 6 7 |
| 2. There is a special person with whom I can share my joys and sorrows. | 0 1 2 3 4 5 6 7 |
| 3. My family really tries to help me. | 0 1 2 3 4 5 6 7 |
| 4. I get the emotional help and support I need from my family. | 0 1 2 3 4 5 6 7 |
| 5. I have a special person who is a real source of comfort to me. | 0 1 2 3 4 5 6 7 |
| 6. My friends really try to help me. | 0 1 2 3 4 5 6 7 |
| 7. I can count on my friends when things go wrong. | 0 1 2 3 4 5 6 7 |
| 8. I can talk about my problems with my family. | 0 1 2 3 4 5 6 7 |
| 9. I have friends with whom I can share my joys and sorrows. | 0 1 2 3 4 5 6 7 |
| 10. There is a special person in my life who cares about my feelings. | 0 1 2 3 4 5 6 7 |
| 11. My family is willing to help me make decisions. | 0 1 2 3 4 5 6 7 |
| 12. I can talk about my problems with my friends. | 0 1 2 3 4 5 6 7 |

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