RELIGIOUS COPING, PSYCHOSOCIAL FACTORS AND QUALITY OF LIFE AMONG TYPE – 2 DIABETIC PATIENTS IN GHANA

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THIS THESIS IS SUBMITTED TO THE DEPARTMENT OF PSYCHOLOGY OF UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILMENT FOR THE AWARD OF THE MASTER OF PHILOSOPHY (MPHIL) DEGREE IN CLINICAL PSYCHOLOGY

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DECLARATION

I, Vivien Opoku Acheampong, do hereby declare that this thesis is the result of my research carried out in the Department of Psychology, University of Ghana, Legon under the eminent supervision of Prof. C. C. Mate-Kole and Prof. Ama De-Graft Aikins who are both my lecturers and supervisors. I further do declare that all research works cited in this study have been duly acknowledged.

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DEDICATION

I dedicate this research work to my husband Kwaku, my children Nana, Maame, and Ewurama.
Also to Prof. John Franklin Wiredu and to everyone who in diverse ways made all this happen.
To God be the Glory.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declaration</td>
<td>i</td>
</tr>
<tr>
<td>Dedication</td>
<td>ii</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>iii</td>
</tr>
<tr>
<td>Table of content</td>
<td>iv</td>
</tr>
<tr>
<td>List of tables</td>
<td>vi</td>
</tr>
<tr>
<td>Abstract</td>
<td>vii</td>
</tr>
</tbody>
</table>

**CHAPTER ONE: INTRODUCTION**

1.1. Background of the study  
1.2. Statement of the problem  
1.3. Aims and objectives  
1.4. Relevance of the study

**CHAPTER TWO: REVIEW OF LITERATURE**

2.1. Theoretical framework  
2.2. Review of related studies  
2.3. Rationale for the study  
2.4. Statement of hypotheses  
2.5. Operational definition  
2.6. Proposed conceptual model
CHAPTER THREE: METHODOLOGY

3.1. Design
3.2. Population/ Sample
3.3. Sampling Technique
3.4. Inclusion and Exclusion Criteria
3.5. Measures
3.6. Procedure
3.7. Pilot Study
3.8. Ethical Consideration

CHAPTER FOUR: RESULTS

4.1. Statistical Tests for Analyses
4.2. Preliminary Analyses
4.3. Hypotheses Testing
4.4. Summary of Findings
4.5. Results from Focused Group Discussion

CHAPTER FIVE: GENERAL DISCUSSION

5.1. Discussion
5.2. Limitations
5.3. Recommendations for Future Studies
5.4. Implications for Clinical Practice
5.5. Conclusion
REFERENCES

APPENDICES

Appendix I: Questionnaire
Appendix II: Questions for Focused Group Discussion (FGD)
Appendix III: Consent Form
LIST OF TABLES

Table 1: Demographic Characteristics of Respondents 54

Table 2: Cronbach’s Alpha Reliability Coefficients of Scales and Subscales obtained from Pilot Study 62

Table 3: Descriptive Analyses on Key Variables 67

Table 4: Correlations and Cronbach’s Alpha Reliability Coefficients of Scales and Subscales 68

Table 5: Quality of Life among Type-2 Diabetic Patients and Healthy Control Group 69

Table 6: Hierarchical Linear Regression Analyses on Predictors of Quality of Life among Type-2 Diabetic Patients 70

Table 7: Demographic Characteristics of the FGD Respondents 74

Table 8: Participants’ Involvement in Religious Activities 76

Table 9: The Influence of Religious Activities on Coping Mechanisms and Quality of Life 77

Table 10: Challenges/ Stressors associated with Diabetes 78

Table 11: Life Satisfaction 80

Table 12: Participants’ General Comments on Diabetes and Quality of Life 81
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1: Proposed Conceptual Model</td>
<td>49</td>
</tr>
<tr>
<td>Figure 2: Observed Conceptual Model</td>
<td>84</td>
</tr>
</tbody>
</table>
ABSTRACT

This study examined the influence of religious coping and psychosocial factors on quality of life of type-2 diabetic patients in Ghana. Social support, depression, stress, anxiety, and self-care constituted the psychosocial factors examined. A mixed method design comprising a cross-sectional survey (study I) and a focus group discussion (study II) was employed. A total of 164 participants were purposively sampled for both study I (n=156) and study II (n=8). In study I, there were 76 Type-2 diabetic patients from the Diabetes Centre in Korle-Bu, and 80 healthy matched control individuals. They were administered questionnaires assessing their levels of depression, anxiety, stress, religious coping style, social support, self-care, and quality of life. The results of study I revealed that Type-2 diabetic patients experienced poorer quality of life than the healthy control group. Religious coping, social support, and self-care significantly improved quality of life of type-2 diabetic patients. Stress negatively predicted quality of life but depression and anxiety did not. Results from the focus group discussion with 8 type-2 diabetic patients confirmed the significant role of religiosity and social support in coping with stress associated with type-2 diabetes. The findings are discussed with reference to psychological literature and theories.
CHAPTER ONE

INTRODUCTION

1.1. Background to the Study

Diabetes is a disease that affects life in many ways. Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar, resulting from the body’s inability to produce adequate insulin, or cells’ inability to respond properly to the insulin produced (Egede, 2006). This high blood sugar produces the classical symptoms of polyuria (frequent urination), polydipsia (increased thirst) and polyphagia (increased hunger) (Joensen, Almdal, & Willaing, 2013).

According to the Diabetes Control and Complications Trial Research Group (1995), diabetes is a chronic condition characterized by high blood sugar/glucose levels often leading to eye and nervous problems. In people with diabetes, glucose levels build up in the blood and urine, causing excessive urination, thirst, hunger, and problems with fat and protein metabolism. The disease is linked to a number of causes such as heredity, infection from a virus or bacteria, chemical exposure, obesity, and ageing (Galbo, Tobin, & van Loon, 2007). Physiological changes associated with diabetes mellitus include the inability of the pancreas to produce sufficient amounts of insulin, or the failure of the body cells to respond appropriately to insulin, a hormone that helps the body’s cells to absorb glucose (Misra & Lager, 2009). Diabetes mellitus differs from the less common Diabetes Insipidus, which is caused by lack of the hormone vasopressin, which controls the amount of urine secreted (Joensen, Almdal, & Willaing, 2013; WHO, 2006).

There are two types of diabetes, Type-1 and Type-2 (Walton, Snead, Collinsworth, & Schmidt, 2012; Willi, Bodenmann, Ghali, Faris, & Cornuz, 2007). Type 1 diabetes is characterized by a lack of insulin production. Without daily administration of insulin, type 1 diabetes is rapidly fatal. This form was previously referred to as "insulin-dependent diabetes mellitus" or "juvenile diabetes."
usually affects young individuals before the age of forty. Such people may require the use of insulin as a result of the insufficient production or absence of insulin. Type 2 diabetes, on the other hand, results from insulin resistance, a condition in which cells fail to use insulin properly, sometimes combined with an absolute insulin deficiency. This form was previously referred to as non-insulin-dependent diabetes mellitus or "adult-onset diabetes" and usually affects adults above the age of forty (Walton, 2012). About 90% of people with diabetes around the world have type 2 diabetes. It is largely the result of excess body weight and physical inactivity.

Other identified types of diabetes include gestational diabetes, Maturity Onset Diabetes of the Young (MODY) and diabetes due to genetic disorders and infections (Agyei-Mensah & de-Graft Aikins, 2010). Gestational diabetes occurs when pregnant women without a previous diagnosis of diabetes develop a high blood glucose level. Gestational diabetes resembles type 2 diabetes in several respects, involving a combination of relatively inadequate insulin secretion and responsiveness. It occurs in about 2–10% of all pregnancies and may improve or disappear after delivery (National Diabetes Clearinghouse (NDIC), 2011).

Diabetes has become a widespread epidemic, primarily because of the increasing prevalence and incidence of type 2 diabetes. There is an alarming increase in the rate of diabetes worldwide. According to the Centers for Disease Control and Prevention (2007), almost 24 million Americans had diabetes, with one-quarter of those, or six million, undiagnosed. It is estimated that almost 60 million U.S. residents also have prediabetes, a condition in which blood glucose levels are above normal, thus greatly increasing their risk for type 2 diabetes (Centers for Disease Control and Prevention, 2007). Lifetime risk estimates suggest that one in three Americans born in 2000 or later will develop diabetes, but in high risk ethnic populations, closer to 50% may develop it (Centers for Disease Control and Prevention, 2007). It has been suggested that by 2025, more than
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

75% of the world population with diabetes will reside in developing countries (King, Aubert, & Herman, 1998).

Type 2 diabetes is a major contributor to adult disability and death in sub-Saharan Africa. Epidemiological studies report prevalence rates between 7% in urban West African countries and 12% in East African countries and a high burden of morbidity and mortality (Hall, Thomson, Henriksen, & Lohse, 2011). Approximately 10 million people in Africa are living with diabetes at different levels of complications (Wild, Roglic, Green, Sicree & King, 2004). In Ghana, diabetes is one of the metabolic diseases being battled against by the government in collaboration with the World Health Organization (Amoah, Owusu & Adjei, 2002). Statistics from the Ghana Diabetes Association reveals a high prevalence of diabetes (de-Graft Aikins, Addo, Ofei, Bosu, & Agyemang, 2012). Diabetes prevalence ranges between 6% in urban Accra, the country’s capital, and 9% in Kumasi, the second largest city (de-Graft Aikins, Owusu-Dabo & Agyeman, 2013). About 13,699 cases of diabetes were recorded marching with a corresponding figure of 17,782 hypertension cases in 2010, as against 34669 and 75024 for diabetes and hypertension in 2011 respectively since the two are known to correlate (de-Graft Aikins et al., 2012).

Quartey (2012) reported that the incidence of Type-2 diabetes is on the rise as a result of changing lifestyles among Ghanaians. Similarly, de-Graft Aikins et al. (2013) found that type 2 diabetes prevalence has risen over the years which present the country with several challenges. The increasing incidence has a number of negative implications on individuals such as slowdown in work performance, increase in health bills and eventually high mortality rates. Thus, a holistic management is needed to improve the well-being and quality of life of persons with diabetes.

The ultimate goal of a person diagnosed with diabetes is to achieve good metabolic control and quality of life (Taylor, Frier, Gold & Deary, 2003), but many individuals with diabetes experience
stress related to the diagnosis, symptomatology, and treatment regimen (Coelho, Amorim, & Prata, 2003; West & McDowell, 2002). The severity of the stress associated with the management of diabetes has implications for their quality. Consequently, the identification of personal and community resources that serve as buffer against the stressors are imperative for achieving optimal health outcomes (Lazarus & Folkman, 1984; Stopford, Winkley, & Ismail, 2013).

Diabetes acceptance, stress, locus of control, social support, depression, self-esteem, and self-efficacy have been found to significantly impact the level of glycemic control and quality of life among patients (Gentili, Maldonato, Grieco, & Santini, 2001; Kneckt, Keinanen-Kiukaanniemi, Knuuttila & Syrjala, 2001; Karlsen & Bru, 2002; Koopmanschap 2002; McDonald, Wykle, Misra, Suwonnaroop, & Burant, 2002). In addition to these psychosocial factors, the type of coping with the diabetes has been shown to have significant impact on outcomes and management.

Given the prevalence and severity of type 2 diabetes in Ghana, there is the need to investigate the psychosocial factors that influence the quality of life of type 2 diabetic patients. These psychosocial factors may include depression, anxiety, stress, social support, and dietary control. In addition, there is the need to investigate how religious coping affect the quality of life of the patients.

**Psychological wellbeing and Quality of Life**

Quality of life is a ubiquitous concept defined in many ways (Fallowfield, 2002). WHO (2006) defines quality of life as individuals’ perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It identifies quality of life as a broad ranging concept affected in a complex way by the
person’s physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment. As illness and its treatment affect the psychological, social and economic wellbeing, as well as the ideological integrity, of individuals, any definition of quality of life should be all encompassing while allowing individual components to be delineated (Fallowfield, 2002). This allows the impact of different disease states or interventions on overall or specific aspects of quality of life to be determined. The core domains or components of multidimensional health-related quality of life (HRQoL) are physical, functional, psychological/emotional, and social/occupational (Fallowfield, 2002). However, the present study focuses on general quality of life that incorporates all these domains.

Psychological wellbeing may predict quality of life among patients with chronic illness (Kneckt, Keinanen-Kiukaanniemi, Knuuttila, & Syrjala, 2001; Karlsen & Bru, 2002; Koopmanschap, 2002, Schabert, Browne, Mosely, & Speight, 2013). Psychological wellbeing is an important attribute cherished by people. It is defined as a person’s state of mental and emotional stability (Edwards, 2005). In a broader sense, psychological well-being refers to the degree of wellness on major psychological variables such as self-esteem, depression, anxiety, and stress (Dean, 2006). Psychological wellbeing is a holistic concept that encompasses every dimension of an individual’s state of psychological health (Rodriguez, Valentine, Sawssan, Eisenman, Sumner, Lekeisha, Heilemann & Liu, 2010). People with high psychological wellbeing are known to experience better quality of life (Edwards, 2005).
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

Social Support and Quality of Life

The role of social support in mediating stress and illness is well documented in the literature (Spinhoven, Elzinga, Hovens, Roelofs, van Oppen & Zitman, 2011). Social support refers to the experience of positive and endorsing social relations and it forms an integral part of the psychological and sociological study of stress. It is assumed that adequate and appropriate social support can alleviate stress (Pearlin, Aneshensel, & Leblanc, 1997; Spinhoven et al., 2011).

The term ‘social support’ describes various aspects of social relationships (Stopford, Winkley, & Ismail, 2013). First, social support may be defined in terms of the quantity of social relationships and as such in terms of integration versus isolation (Heller & Swindle, 2000). Second, the reciprocal aspects of social support may be expressed in terms of the structure of a person’s social relationships; in that case the term ‘social network’ is often used (Turner, 2004). Finally, social support is most commonly defined as the qualitative content of relationships such as the degree to which the social relationships provide emotional concern, understanding, care, instrumental and practical aid, information and the like (Heller & Swindle, 1997). Although these three perspectives on social support (i.e., quantity, structure or network, and quality) need to be distinguished, they are closely intertwined: social relationships must exist in some quantity before they can have a structure and supportive function (Schwartz & Frohner, 2005).

Researchers generally believe that the availability of social support plays an important role in influencing the psychological well-being of individuals (Emlet, 2006; Sun, Zhang, & Fu, 2007; Yobanyo, 2008). Social support consists of social relationships that provide (or can potentially provide) material and interpersonal resources that are of value to the recipient, such as counseling, access to information and services, sharing of tasks and responsibilities, and skill acquisition (Burns, Anstey, & Windsor, 2011). Furthermore, the category of interpersonal resources often
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

includes a range of emotional supports (e.g., empathy, care, love, and trust), informational supports (e.g., advice, suggestions, access to information, etc.) and instrumental supports (e.g., aid in kind, sharing of tasks and responsibilities, skills acquisition, among others). These resources either by themselves, or in combination with more concrete material resources, help the recipients cope and adapt to stressful life events and support their positive well-being (Lakey & Cohen, 2000).

According to Gjesfjeld, Greeno, Kim, and Anderson (2010), three broad categories of social support concepts represented in the literature have important implications to help guide measurement decisions. These three broad categories of social support concepts are (1) social connectedness or social embeddedness, (2) perceived social support; and (3) actual or enacted social support. Social connectedness or embeddedness refers to the quantity and quality of social ties or interpersonal connections that an individual has with others, including both informal and formal social relationships (Kaul & Lakey, 2003). Informal relationships often include family members, relatives, friends, neighbors, and others, whereas the more formal relationships may include mental health professionals, physicians, counselors, teachers, clergy members, among others (Kaul & Lakey, 2003).

Perceived social support, which is the second category of social support, refers to an individual’s cognitive appraisal of support to promote coping and thereby reduce the negative effects of stress on outcomes (Gjesfjeld et al., 2010). Measures of perceived social support may differ depending on whether they focus on assessing an individual’s appraisal of the availability and/or the adequacy of support. Despite some concerns about potential self-reporting biases of respondents, measures of perceived social support typically have been found to have the strongest relationships with
measures of reduced stress and psychological distress, as well as measures of improved well-being (Kaul & Lakey, 2003, Vaux, 1990).

The last category of social support is actual or enacted social support (Gjesfjeld et al., 2010). While perceived support explains an individual’s appraisal of support irrespective of whether or not they have received such support, the actual or enacted support focuses more on an individual’s report of support they have actually received (Gjesfjeld et al., 2010; Rodriguez, et al., 2010). Some have asserted that enacted support may be most relevant when examining the more proximal influence or responsiveness of social support in situations where individuals are known to have experienced adverse conditions or significant stressors (Turner, 2004). Other researchers have argued that the positive influence of actual or enacted social support may be mediated by perceived social support (Heller & Swindle, 2007), the present study, however, conceptualizes social support in terms of a person’s perception of support from family, friends, and significant other (Zimet, Dahlem, Zimet, & Farley, 1988). This perceived social support is in line with the earlier conceptualization of cognitive appraisal of support (Kaul & Lakey, 2003, Vaux, 1990).

Type 2 diabetic patients need social support in any of its forms in order to effectively cope with the stress associated with the disease. Social support from friends, family, and significant others is crucial in ensuring good quality of life among patients (Göz, Karaoz, Goz, Ekiz, & Cetin, 2007). In this sense, the current study will explore the extent to which social support from friends, family, and significant others influence the quality of life of type-2 diabetic patients.
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

**Religious Coping and Quality of Life**

Religion is an integral component of life for individuals confronted with illness, disability, and death (Acklin et al., 1983; Ferraro & Kelley-Moore, 2000; Harrison et al., 2001; Laubmeier et al., 2004; Stroebe, 2004). Many individuals rely on their religious beliefs and practices to provide meaning to the disease experience and obtain comfort, hope, and social support (Pargament, 1997; Pargament, 1990). Evidence also indicates that religious beliefs and practices can impact the coping process (Pargament, 1997). Religion may permeate the stress process by influencing the cognitive and behavioral responses for interpreting and handling negative life events. Religion appears to influence the interpretation, appraisal, and attribution of chronic illness (Gordon et al., 2002; Siegel et al., 2001). Religion may contribute to the coping process by providing coping options through the social, interpersonal, cognitive, spiritual, and behavioral aspects of religious faith (Hathaway & Pargament, 1991).

Researchers claim religion is a critical recourse in the coping process. During times of serious illness, individuals may seek organized religion due to its healing themes, emotional support, and practical assistance (Krause, Ellison, Shaw, Marcum, & Boardman, 2001; Pargament, 1997; Siegel et al., 2001). In fact, religious beliefs and practices have been shown to improve mental health in heart transplant patients (Sears, Rodrigue, Greene, Fauerbach, & Mills, 1997), and also to encourage hope and acceptance of illness in cancer patients (Holland et al., 1999; Mickley & Soeken, 1993). Religious beliefs and practices enhance mood in patients with chronic pain (Greene Bush et al., 1999). They improve mental and physical health of the medically ill elderly (Pargament, Koenig, Tarakeshwar, & Hahn, 2004) and promote psychological adjustment in kidney transplant patients (Tix & Frazier, 1998). Finally, religious beliefs and practices are shown
to decrease emotional distress, anxiety, and depression among HIV patients (Pargament et al., 2004).

Although there is accumulating evidence suggesting the potential impacts of religion on chronic illnesses, there is a lack of research among individuals with type 2 diabetes. Identifying gaps and limitations in published literature along with mechanisms by which religion exerts its effects can expand the theoretical framework explaining adjustment to diabetes. Further, research on religion, coping, and diabetes outcomes could provide valuable information regarding the need for incorporating religious and spiritual components in self-management education programs (Ano & Vasconcelles, 2005; Siegel et al., 2001).

1.2. Statement of the Problem

Diabetes is one of the rising metabolic diseases in the world today (Wild et al., 2004). In comparison with other diseases such as HIV/AIDS and Cancers among others, Diabetes has not received much public attention. Yet, statistics on the prevalence of the disease in Ghana are quite revealing and therefore merit public attention in terms of policy making and implementation so far as better health delivery is concerned (De-Graft Aikins et al., 2012).

Living with Type-2 diabetes has been shown to have significant negative impact on both the physical and mental well-being of individuals and consequently their quality of life. Poorly controlled diabetes is associated with multiple long-term complications. Diabetes requires individuals to adjust and adapt to disease symptoms and lifestyle behaviors. Mindful of the negative consequences of the disease, Rane, Wajngot, Wandell and Gafvels (2011) suggested that it is important to identify and support patients whose psychosocial situations and reactions to the
diagnosis may affect their ability to adjust or take adequate responsibility for self-care. Despite this suggestion both the government and health care professionals have not yet made full commitment to address the difficulties facing individuals who have been diagnosed with diabetes in Ghana. This requires the identification of alternative measures to help address the challenges facing type 2 diabetic patients.

Some personal and psychosocial resources can help to mitigate the challenges facing Type-2 diabetic patients and consequently enhance their quality of life. Effective coping encourages acceptance and integration of the disease into daily life resulting in positive physiological and psychosocial outcomes (Macrodimitris & Endler, 2001; Sanden-Eriksson, 2000; Walsh, Katz, & Sechrest, 2002). Higher quality of life, better glycemic control, and less utilization of emergency medical services are generally known to be effective means of coping with diabetes (Macrodimitris & Endler, 2001; Sanden-Eriksson, 2000; Walsh, Katz, & Sechrest, 2002) but their effectiveness in the Ghanaian environment have not yet been empirically investigated.

Religion has been cited as a useful coping resource (Pargament, 1997; Pargament, 1990). However, findings on religion as a coping mechanism have not always been consistent. Some studies have demonstrated the impact of diabetic patients’ religiosity on their health outcomes with varying findings (Abdoli, Ashktorab, Ahmadi, Parvizy & Dunning, 2011; Kilbourne, Cummings & Levine, 2009). Religiosity has been found to serve as a protective factor against the development of mental health and physical health problems (How, Ming & Chin, 2011; Kilbourne, Cummings & Levine, 2009; King, Mainous & Pearson, 2002). In contrast, other have found no or a negative impact of religiosity on the levels of mental and physical well-being of patients studies (Edmondson et al., 2005; Miller, McConnell & Klinger, 2007). These inconsistent findings invite further investigation into the role of religious coping in the quality of life of patients.
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

The use of religious coping in dealing with diabetes has received little attention in our context though it has been shown to significantly influence diabetes outcomes among persons living with diabetes. The conflicting results on the use of religion as a coping mechanism means that it is important to carry out a study in the Ghanaian setting. This study therefore seeks to investigate and document the impact of religious coping on the quality of life of type 2 diabetic patients in Ghana. In addition, the study seeks to explore the personal and psychosocial factors that affect the quality of life of type-2 diabetic patients.

1.3. Aim and Objectives of the Study

The general aim is to examine the relationship between religious coping, psychosocial factors and quality of life among individuals living with Type-2 diabetes. Specifically, the researcher seeks to achieve the following objectives:-

i. To assess the impact of type-2 diabetes on the quality of life of diabetic patients
ii. To examine the relationship between religious coping and quality of life of Type-2 diabetic patients
iii. To determine the influence of social support on the quality of life of type-2 diabetic patients
iv. To assess whether family support contributes more to quality of life than support from friends and family
v. To determine the relationship between psychological well-being and quality of life of type-2 diabetic patients
vi. To assess the impact of self-care activity on the quality of life of type-2 diabetic patients
1.4. Relevance of the Study

The study helps the Ministry of Health (MOH) and other stakeholders like the Ghana Health Service (GHS) in developing treatment interventions for individuals living with Type-2 diabetes. It redirects health interventional focus to psychosocial factors that have important implications on the quality of life of patients. The study also helps health workers to appreciate the role religiosity and psychosocial factors play in the management of diabetes. In addition, the recommendations from the study guide individuals living with Type-2 diabetes in managing their condition and thereby improving their quality of life. Again, this study adds to the existing literature in Type-2 diabetes management. The findings and methodology may guide the conduct of future research in the same or related domain.
CHAPTER TWO

LITERATURE REVIEW

2.1. Theoretical Framework

Several distinct theoretical models articulate how social support, religiosity and psychological factors influence the quality of life of individuals, especially people under acute forms of stress (Lakey & Cohen, 2000). However, a few of such studies are discussed in this research. Among them are the buffer theory of social support, the transactional model of stress and coping, and the religious coping theory. Each of these theories have been discussed in this section of the study and their strengths and limitations have been drawn.

2.1.1 Transactional Model of Stress and Coping

The transactional model of stress and coping (Lazarus & Folkman, 1984) postulates that coping with stress is influenced by several psychosocial factors. According to this model, the way stressful situations are appraised and the coping resources employed determine the psychological outcome of the stressful event. Appraisal according to the transactional model of stress and coping is the cognitive evaluation which leads to the perception of the situation as stressful or not.

The appraisal also determines the coping strategy the individual employs in dealing with the stressor (Lazarus & Folkman, 1984). When faced with a stressor, an individual responds in three stages: the person first determines if the event is a threat or not (primary appraisal), followed by an evaluation of the coping resources available (secondary appraisal) and a continuous re-evaluation and changing of primary and secondary appraisals (reappraisal). This means that stress only occurs when the person first appraises the situation as harmful and/or perceives an
unavailability of adequate coping resources which then can lead to negative physiological or health problems (Lakey & Cohen, 2000).

Type-2 diabetes is a chronic condition with several complications, hence it serves as a great source of stress for the individual diagnosed with the illness. The appraisal of the illness and the available coping resources as well as other psychosocial complications are very essential in determining the outcomes of the illness such as the quality of life and the overall management of the disease. Social support is one of the important coping resources for people going through major stressful events. Social support is reported to reduce the negative effects of stressful life events on health through either the supportive actions of others or the belief that support is available (Lakey & Cohen, 2000). Diabetic patients who have strong social support from family, friends and significant others are therefore expected to be able to deal with the stressors they experience and so have better outcomes compared to those with little or no support (Tang Brown, Funnel & Anderson, 2008). However, the transactional model of stress and coping fails to account for the mechanism underlying the psychological benefits of social support.

2.1.2. The Buffer Theory of Social Support

Alloway and Bebbington (1987) proposed the Buffer Theory of Social Support and Lin, Woefel and Light (2005) elaborated it. The theory states that social support acts as a buffer that helps to decrease the appraisal of stressful events so that they are perceived as less threatening. Social support may decrease the number of immune system and behavioral changes that result from stress, thus, helping to prevent illness (Cohen and Wills, 1985; Dean and Lin, 1977). Buffering can be
defined as any intervening effect of social support between stressors and health (Lin, Woelfel, & Light, 2005).

According to the Buffer Theory of Social Support, the presence of social relations or support networks moderates effect of adverse environmental stressors that precipitate illness and disease (Lin, Woefel & Light, 2005). The theory further proposes that social support may not contribute directly to health outcomes but acts as a “buffer” to protect the individual from the harmful effects of one’s environment in times of stress (Lin, Woefel & Light, 2005). This suggests that social support may intervene between the stressful event/s and the stress response by attenuating or preventing a stress appraisal response of mental health patients. Rather than protecting against the effects of a stressful event when it occurs, the buffer theory suggests that a protective effect is achieved by preventing or reducing the amount of psychological risk factors experienced.

Although the theory explains how social support affects health outcomes of people experiencing acute forms of stress, it provides no account on the sources of social support and their relative effectiveness. It is likely that the quality of social support may differ depending on the source. To test the buffer theory, Stachour (1998) examined the role of social support in light of two different categorizations of social support: quality and quantity. It was hypothesized that high quality and high quantity social support groups will correlate with lower illness levels. In an attempt to explore the relative merits of the main effect and the buffering hypotheses, the relative role of social support to stress and illness was examined. There was a significant correlation between quality of social support and illness levels. Quantity of social support played a minor role in predicting illness levels. Finally, social support was significantly linked to mental health scores such that under low stress the level of support did not have an effect on health levels, but under high stress individuals
who had high social support were healthier than individuals with low social support (Stachour, 1998).

The findings of Stachour (1998) point out that it is not the quantity of social support that matters, but more importantly the quality of social support. Quality of social support can best be assessed in terms of its sources (Zimet, Dahlem, Zimet, & Farley, 1988). The quality and effectiveness of social support from the family in serving as a buffer in stressful and illness situations may be different from the quality and effectiveness of social support received from friends and significant others. It is therefore necessary that the benefits of social support in reducing stressful experience be defined in specific terms of family, friends, and significant others.

2.1.3. Religious Coping Theory

The religious coping theory (Ganzevoort, 1998; Pargament, 1997; Pargament & Raiya, 2007; Pargament, Smith, Koenig & Perez, 1998) posits that people employ religious beliefs and practices to understand and deal with life stressors and this has several mental health outcomes. Certain religious beliefs such as the belief that “God is working in one’s favour” and that “He gives His children strength to overcome challenges” are also reported to strengthen an individual’s sense of control over life events and situations (Smith, 2003) such as illness. This in turn helps reduce psychological distress associated with stressful events (Keeton, Perry-Jenkins & Sayer, 2008). Religion is also said to provide an optimistic worldview 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 and provides answers to existential questions such as “where do we come from?” and “where are we going?” (Koenig, 2012, Smith, 2003). What this
means is that negative life events become less distressing for religious persons, and this may translate into positive mental health outcomes.

Religious coping can be either positive or negative. Positive religious coping refers to benevolent religious evaluation of situations (such as perceiving a situation as part of God’s perfect plan), seeking spiritual support (having faith in God to do something about the situation), active religious surrender (trying to solve the problem to one’s best ability and surrendering it to God) and spiritual connection (building a stronger connection with God in times of challenges) (Pargament et al., 1998).

Negative religious coping, on the other hand, includes reappraisal of God’s power (for instance, thinking that the situation is beyond God’s control), passive religious deferral (not doing anything and expecting God to solve the problem), punishment re-appraisal (thinking that the situation is a punishment from God), abandonment interpretation (thinking that God has forsaken you) and interpersonal religious discontent (having conflicts with people in one’s religious organization). Pargament et al. (1998) argued that positive religious coping can have beneficial effect on individuals experiencing stressful life events whereas negative religious coping can have deleterious effects on the individual.

Thus, the Religious Coping Theory implies that not all aspects of religious coping are helpful for the individual. For instance, Pargament et al. (1998) reported that positive religious coping is associated with lower levels of emotional distress and psychosomatic symptoms while negative religious coping has been found to be linked with higher levels of depression and anxiety (McConnell, Pargament, Ellison, & Flannelly, 2006). To extend this theory to the present study, one can reason that diabetic patients who employ positive religious coping may experience low
levels of stress, depression, anxiety and better quality of life whereas those who employ negative religious coping in dealing with type 2 diabetes will report high levels of stress, depression, anxiety and poor quality of life. The question about what type of religious coping diabetic patients in Ghana use and how it translates into their quality of life is very pertinent to this study.

2.1.4. Afrocentric Framework of Stress and Coping

The Afrocentric framework of stress and coping (Utsey, Adams, & Bolden, 2000; Utsey, Brown, & Bolden, 2004) emphasizes collective and communal orientation in coping among Africans and African Americans. Utsey et al. (2000, 2004) identified communally and spiritually based coping to be particularly prevalent among individuals of African descent, reflecting an Afrocentric worldview. These observations find support in a recent coping study of Black Canadians. Joseph and Kuo (2009) reported that spiritual- and ritual-centered coping constituted the most crucial coping strategies adopted by Black Canadians in dealing with interpersonal discrimination (e.g., being looked down on as unintelligent by others). Additionally, in a study of coping with the September 11 attacks, Constantine et al. (2005) found that both acquiring from and giving support to in-group members and religious coping were an integral part of coping among African Americans. These coping behaviors further underscored the centrality of collectivism and communalism in African Americans.

Utsey et al. (2002) observed that in response to racial stressors, African Americans may seek social and psychological support from their ethnic community, extended family, and religious and spiritual resources. This sense of affirmation and belonging to the ethnic group and other support systems may enhance collective self-esteem and overall well-being. According to Utsey et al.
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

(2002), perceptions of a stressful situation may result in feelings of anger, anxiety, paranoia, helplessness-hopelessness, frustration, resentment, and fear. Physiological responses to psychological stress occur as a result of unsuccessful coping responses. The primary physiological stress response involves immune, neuroendocrine, and cardiovascular system functioning (Utsey et al., 2002). Ethnic identity was the best predictor of overall quality of life. This finding suggests that ethnic identity development is not only related to purely psychological indexes (e.g., self-concept) but also linked with physical health (physical domain), satisfaction with one’s relationships and social networks (relationship domain), and satisfaction with one’s lifestyle (environment domain). Individuals who indicated they experienced cultural forms of racism also reported a diminished quality of life (Utsey et al., 2002).

It must be pointed out that Afrocentric theories of coping have overly relied on African Americans for empirical evidence to the exclusion of continental Africans. This raises questions on the generalizability of theoretical tenets to Africans on the African continent. There is limited research on coping among continental Africans (e.g., Haley et al., 1996; Utsey et al., 2000, 2004). There may be differences between continental Africans and African Americans. Afrocentric theories based on African Americans may therefore be less useful to continental Africans. Therefore, this study extends the tenets of the Afrocentric theories of coping to continental Africa to augment the present knowledge base and to boost interest in coping research on understudied cultural groups such as continental Africans.
2.1.5. The African Self-Consciousness Theory

The specific idea of developing African self-consciousness was advanced by Baldwin (1981, 1984) and elaborated by Kambon (1992, 2003, 2006). The theory reflects the belief that it is healthy for Blacks to develop awareness and knowledge of their cultural identity and cultural heritage and recognize factors that affirm Black life. Baldwin encouraged Blacks to resist European-based values (e.g., individualism) and social forces that threaten Africentric identity by pushing Blacks to give up distinctive institutions that espouse Africentric values (Baldwin, 1984; Baldwin & Bell, 1985). Baldwin (1981, 1984) believed that when the basic characteristics of African self-consciousness are fully operating, they generate self-affirmative behaviors.

The African Self-Consciousness Theory has significantly contributed to knowledge on African personality. Succinctly, the model emphasizes two key heuristic constructs in articulating the structure, dynamics, and behavioral outcomes related to a cultural-centered understanding of African psychological functioning and behavior: African Self-Consciousness (ASC) and Cultural Misorientation (CM). According to the model, African personality consists of a core system called the African Self-Extension Orientation (ASEO) and African Self-Consciousness (ASC), and a number of basic traits emanating from the core.

ASEO is the foundation of the Black personality. It is the organizing principle and energy source of the entire system (Kambon, 1992). It is innate, unconscious, and operationally defined by the construct of "Spirituality." According to Kambon (2006), spirituality expresses dynamic communal energy which allows the Self to merge into the totality of phenomenal experience. It is immutable and deeply rooted in the African psychical system. The ASEO manifests in terms of a set of basic psychological and behavioral traits, or “Africanisms,” expressive of the African spirituality dynamic (Kambon, 1992).
According to Kambon (1992, 2003, 2006), a part of the ASEO differentiates into a conscious structure called ASC through developmental progression under normal-natural conditions. ASC is therefore partly biogenetic, but because consciousness evolves in large part through experience, it is also partly environmental-experientially based. ASC directs and guides the personality system toward Africentric goals and objectives; that is, it directs/focuses the “African Survival Thrust” inherent in the ASEO. Thus, the ASEO defines and energizes the African personality system, while ASC cognitively directs or focuses the system toward the fulfillment and maintenance of African survival, affirmation-empowerment (Kambon, 1992).

The African Self-Consciousness Theory spells out the relevance of religion and spirituality in the life of African. It portrays spirituality as an integral dimension of the African personality and a useful component of the African existence. The spiritual dimension of the African personality allows the African to develop greater understanding of his environment and experiences. Through the ASEO, diabetic patients suffering from acute forms of stress come to the understanding that their religious faith and practices can help them endure the stressful situation. This form of ideological orientation shapes the African personality and allows the African to effectively use religion as an effective coping tool to ensure all forms of stresses.

The African Self-Consciousness Theory also overly relied on African Americans for empirical evidence to the exclusion of continental Africans. Although the theory provides biogenic explanation for African personality and spirituality, it leaves traces for experiential dimension of African personality. The experiential dimension shows that exclusive evidence from African Americans cannot account for the personality and spirituality of continental Africans due to significant differences in experiences. There is therefore the need to further test the African Self-Consciousness Theory with empirical evidence gathered from continental Africa.
2.2 Review of Related Studies

The review of related studies is divided into sub-categories including religious coping and quality of life, psychosocial factors and quality of life, religious coping, stress, anxiety and depression. The section on psychosocial factors and quality of life is also divided into sub-headings: stress, depression, anxiety and quality of life; social support and quality of life; and demographic variables and quality of life.

2.2.1 Religious Coping and Quality of life

A growing body of evidence indicates that religion significantly affects coping outcomes as many individuals rely upon their religious beliefs and practices to help them cope with negative events (Ferraro & Kelley-Moore, 2000; Harrison et al., 2001). Limited research on religious coping in diabetic populations indicates that religion does impact diabetes coping and management. Landis (1996) reported that spiritual well-being in type 1 and type 2 diabetic patients reduced feelings of uncertainty and improved individuals’ ability to adjust to living with diabetes.

Further evidence indicates that church members and pastors provide instrumental and emotional support (Adams, 2003; Cagle et al., 2002; de Vera, 2003; Dietrich 1996; Hornsten et al., 2004; Popoola, 2005; Samuel-Hodge et al., 2000; Young, 1993). Reading the bible and praying reduced daily hassles and stresses (Samuel-Hodge et al., 2000). Zaldivar and Smolowitz (1994) found that among non-Mexican American Hispanic diabetic patients, belief in God and an individual’s perception of God’s role in diabetes influenced his or her perception of diabetes and treatment choices. This evidence suggests that the role of religion in dealing with various stressors including chronic illnesses cannot be overemphasized. The caveat, however, is that we may not be able to
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

generalize the results to the Ghanaian diabetic population due to cultural differences in perception and practice of religion.

In a related study, Samuel-Hodge, Watkins, Rowell and Hooten (2008) examined how coping styles among African Americans with type 2 diabetes related to diabetes appraisals, self-care behaviors, and health-related quality of life. They employed a cross-sectional study design. The authors found that passive and emotive styles of coping were the most frequently used coping styles. They also discovered that older and less-educated participants more often used passive forms of coping. Additionally, there was a significant association between emotive styles of coping and greater perceived stress. Coping style emerged as an independent predictor of dietary behaviors and mental well-being. A positive role for church involvement in the psychological adaptation to diabetes was also observed in the study. The study of Samuel-Hodge et al. (2008) thus highlights the important contributions of religious involvement and coping in diabetes outcomes. It, however, does not focus on religious coping but rather on passive and active coping which may involve all kinds of coping either than religious coping. Though it highlights the importance of religious involvement, it does not give any information on the use of religion as a coping strategy in diabetes management.

Macllvaine, Nelson, Stewart and Stewalt (2013) examined the strength of religious adherence and its association with quality of life among a religiously conservative church-population. They also investigated the role of religion in quality of life. They obtained the self-reported measures of 303 participants on adherence to religious activities, knowledge of faith and perceived well-being. The results revealed that participants who were adherents of religious activities targeted at their maturity in the Christian faith reported better personal well-being than those who were not adherents. This finding suggests that individuals may perceive greater personal-well-being even
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

when they only partially adhere to the basic tenets of their faith. The sense of personal well-being becomes greatest for those who are more intimate with keeping their religious practices. Though the study of Macllvaine et al. (2013) reveals the role of religion in the psychological well-being or quality of life of individuals, it tells nothing about religious coping in times of stressful life events. The study was also done among a church-based population which makes its findings not applicable to Christians in general.

The relationship between religious coping and quality of life has been investigated in other chronic illnesses and the results provide insights into the influence religious coping has on the quality of life of people confronted with ill-health.

Ramirez, Macodo, Sales, Figueiredo, Daher, Araújo, Pargament, Hyphantis, and Carvalho (2012) investigated the relationship between religious coping, psychological distress and health-related quality of life among patients with end stage renal diseases who are on hemodialysis. Findings revealed that patients adopted both positive and negative religious coping. Negative religious coping correlated with depression and anxiety after controlling for socio-demographic variables. Negative religious coping also correlated with poor overall health related quality of life and with all domains of quality of life (physical, mental, social relations and environmental). On the other hand, positive religious coping correlated with better overall health-related quality of life but only with the mental and social relations domains of health-related quality of life after controlling for psychological distress symptoms and other socio-demographic variables.

The results of the study of Ramirez et al. (2012) showed that negative religious coping has more potent influence on all aspects of quality of life compared to positive religious coping which is limited to certain aspects of quality of life. The study also demonstrates that religious coping can have both positive and negative impact on the psychological well-being and quality of life of
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

individuals who use it, depending on the coping type they adopt. Positive religious coping may improve quality of life while negative religious coping may impair quality of life.

Contradictory findings were reported by Ursaru, Crumpei and Crumpei (2014) in their examination of the differences in the quality of life among 57 breast cancer patients and the exploration of the relevance of religious coping in their recovery. Results showed that the patients relied more on religious coping in dealing with their condition. Whilst religious coping did not correlate significantly with any of the life satisfaction subscales among the cancer patients, positive religious coping correlated positively with psychological satisfaction among the control group. Caution must however be taken in drawing conclusions based on these findings because the authors used life satisfaction as a measure of quality of life which might not capture all dimensions of quality of life.

2.2.2. Religious Coping and Psychological Wellbeing

Studies have investigated the role of religious coping in mental health outcomes such as stress, anxiety and depression. Olson, Trevino, Geske and Vanderpool (2012), for instance, investigated religious coping and mental health outcomes among socioeconomically disadvantaged patients. They used 123 patients who sought mental health care at the community health center for patients with little or no financial resources or insurance. Results revealed that positive religious coping was significantly connected with and predicted better mental health while negative religious coping was significantly linked with poorer mental health. Interestingly, the negative impact of negative religious coping on mental health outcomes was more robust than the positive impact of positive religious coping. This signifies that negative religious coping may have more potent influence on mental health outcomes compared with positive religious coping. Thus using religion
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

to cope with a stressful situation in an unhelpful way may have more impact on one’s mental health than the positive effects one might experience in using religion in a more helpful manner.

In the study of Olsson et al. (2012), the participants comprised people going through economic stress and had to cope with it. Those who used positive religious coping reported better mental outcomes and those who used negative religious coping reported poorer mental health outcomes. One might argue that having to deal with economic challenges may not be as serious as dealing with a chronic illness such as type-2 diabetes. The question of whether religious coping can impact the mental health of such individuals who have to deal with their illness for the rest of their lives has thus become a very pertinent question to address.

Zhang, Tse, Ye, Lin, Chen and Chen (2009) examined the interactive effects of coping styles and psychological stress, anxiety, and depression symptoms among Chinese patients with type-2 diabetes in a qualitative study. They reported a significant relationship between psychological stress, and anxiety and depression. Negative coping style increased the level of anxiety and depression among the patients. Also, the interactions between negative coping style and worrying about decline in body/physical function and economic condition significantly increased the risk of anxiety and depression. However, the interaction between social/family crisis caused by the disease with avoidance coping style and worrying about decline in body/physical function with active coping style significantly decreased the risk of depressive symptoms. The findings revealed that the type of coping style used in dealing with psychological stress arising from diabetes is important in determining the patient’s psychological well-being.

Even though the above study did not employ religious coping as the measure of coping style, its findings give an insight into how positive coping and negative coping can predict anxiety and depression. Consequently, diabetic patients who employ positive religious coping are less likely
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

to suffer anxiety and depression whereas those who employ negative religious coping methods are more likely to experience anxiety and depression. Avoidance coping and negative coping used in the study reviewed above could be likened to negative religious coping such as passive religious deferral while active coping could be likened to active religious surrender under positive religious coping.

In a related study, Braam, Schrier, Tuinebreijer, Beekman, Dekker and de Wit (2010) explored how positive and negative religious coping strategies relate to depressive symptoms in different ethnic groups in the Netherlands. In a two phase study, they found that positive religious coping was not significantly related to depressive symptoms. Negative religious coping, however, had significant positive relationship with various levels of depressive symptoms (sub-threshold depression and major depressive symptoms). The best predictor of depressive symptoms among the negative religious coping strategies was the abandonment interpretation (“wondered if God had abandoned me”).

The study of Braam et al. (2010) sustains the argument that negative religious coping may have more potent influence on mental health outcomes than positive religious coping. What is however surprising is that positive religious coping had no significant relationship at all with depressive symptoms. It is worth stating though that the sample used in this particular study are people not going through any specific stressful situation hence their level of stress may vary from one another considerably. Hence replicating the study among people going through similar a kind of stressful life event such as diabetes may yield different results. Also other mental health outcomes such as psychological stress and anxiety have not been looked at.

Pirutinsky, Rosmarin, Pargament and Midlarsky (2011) examined the relationship between negative religious coping and depressive symptoms among Orthodox Jews using 80 participants.
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

They found a significant linear relationship between negative religious coping and depressive symptoms. Negative religious coping was predictive of future depression. This result suggests that negative coping is not only predictive of current depressive symptoms but can predict future depression. However, caution must be taken when drawing conclusions based on the findings of the study because the researchers used a relatively small sample size ($n=80$). Also, the sample used were Jews (thus they belong to the same religious group) and the effects of religious coping among them may be different from other religions.

2.2.3 Psychological Well-being and Quality of Life

Being diagnosed with a chronic illness such as type-2 diabetes is, in itself, a stressor which could lead to several psychological problems including heightened levels of perceived stress, anxiety and depressive symptoms (Schabert et al., 2013). Several studies have been conducted among diabetic patients with regard to their mental health challenges, quality of life and self-care. In a paper by Van der Ven (2003), the prevalence of psychological disorders, especially anxiety and depression, is relatively high among people with diabetes. Similar findings from previous studies report several mental health problems among diabetic patients including poor adherence, self-care and severe physical symptoms (Sulaiman, Hamdan, Tamim, Mahmood & Young, 2010), anxiety, and poor quality of life (Kneckt et al., 2001; Karlsen & Bru, 2002; Koopmanschap, 2002).

Apart from diabetes-related stress, other life stressors can affect the quality of life and the overall management of diabetes among patients. For instance, Walders-Abramson, Venditti, Levers-Landis, Anderson, Ghormli, Geffner, Kaplan, Koontz, Saletsky, Payan, and Yasuda (2014) conducted a study to examine the associations between stressful life events and physiological measures, adherence to prescribed oral medication, depressive symptoms and impaired quality of
life among adolescents with recent onset of type 2 diabetes. A total of 497 participants in the final year of the Treatment Options for Diabetes in Adolescents and Youth multicenter clinical trial provide data for the study. Among the 497 participants, the majority were females (66%). The participants provided self-report information on exposure to 32 possible events over the previous year and the subsequent distress level. Results showed that stressful life events did not have any significant relationship with physiological measures or co-morbid diagnoses. Major stressors were predictive of medication non-adherence, elevated depressive symptoms and impaired quality of life.

The study Walders-Abramson et al. (2014) demonstrates the impact stress has on the quality of life of type 2 diabetic patients. However, findings from adolescents in a clinical trial cannot be generalized to adult patients who are more likely to face more stressors from multiple roles in society coupled with the management of their condition. The measure of major stressors used was also prone to bias as it relied on the memory of the patients who were supposed to remember being exposed to the possible events in the previous year and the amount of distress they felt afterwards. A measure of current stress may be a better and more effective measure to uncover the actual effects of stress on quality of life.

Anxiety and depression are other psychological measures reported to impact on the quality of life of diabetic patients. Hall, Rodin, Vallis and Perkins (2009) examined the outcomes of anxious temperament for disease detection, self-management behavior, and quality of life among a sample of 204 newly diagnosed type 2 diabetic patients. The authors reported that anxious temperament (anxiety) negatively correlated with glycaemic control at baseline and a 6-month follow-up period. Increased level of anxiety also predicted the likelihood of being diagnosed with a pre-diabetes condition and also associated with impaired quality of life. The finding indicates that though
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

anxiety may facilitate easy detection of diabetes, it is detrimental to the condition and quality of life of the patient. Nevertheless, participants used in the study were newly-diagnosed diabetic patients, hence their level of anxiety may be high considering the shock the news might have brought to them. It is important, therefore, not to generalize findings to other diabetics who have been living with the condition for a longer duration. Perhaps studies which combine patients who have been living with the condition for varied periods of time would give a better picture of the role of anxiety in diabetes management and quality of life.

Similarly, Gois, Barbosa, Ferro, Santos, Sousa, Akiskal, Akiskal, and Figueira (2011) examined the relationship between affective temperaments (anxiety and depression), psychological adjustment to diabetes and metabolic control of 90 type 2 diabetic patients. Findings showed that patients who had excessive depressive and anxious temperaments reported more depressed symptoms, worse psychological adjustment to the diabetic condition and poorer metabolic control. Though the study did not specifically examine quality of life, it gave important hints about the possible influence of anxiety and depressive symptoms on the quality of life or adjustment to diabetes since psychological adjustment to the condition may be closely linked with the quality of life of the patient.

The two studies reviewed above looked at the trait measures of anxiety and depression which are considered as stable and part of the individual’s personality. Though they give insights into the role of depression and anxiety, they do not give much information about the current psychological state in relation to anxiety and depressive symptoms. A patient with low anxious or depressive temperaments may be currently experiencing heightened levels of anxiety and depression due to the circumstances he/she may be experiencing hence the use of temperaments may not give a realistic picture of a person’s level of anxiety and depressive symptoms.
Using measures of state anxiety and depression, Paschalides, Weraden, Dunkerly, Bundy, Davies and Dickens (2004) examined the interrelationships among anxiety, depression, illness perception with glycemic control and health-related quality of life. They found that depression and anxiety were independently associated with poorer health-related quality of life after controlling for demographic variables. This confirms the negative impact of depression and anxiety on quality of life of diabetes patients as found by other studies.

Studies from other related chronic illnesses also throw light on the possible influence of psychosocial factors such as depressive symptoms on the quality of life of diabetes patients. Lee, Kim and Han (2013) examined correlates of health-related quality of life among hypertensive Korean immigrants. They found that depressive symptoms were the most potent correlates of health-related quality of life. Greater depressive symptoms were significantly associated with poorer quality of life.

2.2.4. Social Support and Quality of Life

Social support, especially from family and significant others, is very crucial for individuals adjusting to a stressful life situation or illness. For instance, in a cross-sectional study on perception of support, diabetes-related coping and psychological well-being in adults with type-1 and type-2 diabetes, Karlsen, Idsoe, Hanestad, Murberg, and Bru (2004) found that the perception of support from family was more closely linked to diabetes-related coping than support from health care professionals. Moreover, results from the study suggest that association between perceptions of support and psychological well-being is mainly mediated by coping.
Social support has been found to predict a higher quality of life among diabetic patients (Lager, 2006). This has been attributed to the reason that social support has consistently been shown to influence diabetic patients’ ability to manage their disease (Gleeson-Krieg, Bernal, & Woolley, 2002; Trief, Grant, Elbert, & Weinstock, 1998). Perceived social support is associated with the use of problem-focused coping and disease management resulting in successful adaptation to diabetes and the treatment regimen. This leads to greater disease acceptance as well as an improved quality of life (Karlsen et al., 2004; McCracken, 2005). Thus, when diabetic patients experience and have a good social support network, their functioning in the face of challenges posed by their illness is well managed.

The above assertion is corroborated by the study of Tang et al. (2008) in which they examined social support and its influence on diabetes-specific quality of life and self-care behaviors among African-American type-2 diabetic patients. A total of 89 patients were used in a cross-sectional and observational study design. After controlling for demographic variables, results showed that satisfaction with support was predictive of improved diabetes-specific quality of life and blood glucose monitoring. Positive support behavior was also predictive of whether a person would follow a healthy eating plan or not, spacing out carbohydrates evenly throughout the day and physical activity at least 30 minutes per day. Negative support behavior on the other hand was predictive of non-compliance with recommended medication. This shows that the type of social support provided to patients is very crucial for their quality of life and the overall management of their illness. The study of Tang et al. (2008) also revealed that it is not the mere presence of social support that predicted quality of life but satisfaction with the support. This shows that the individual’s perception about the support available is very important.
Furthermore, in a review of empirical literature of studies which examined the relationship between social support and self-management in chronic illnesses, Gallant (2003) found that the majority of the studies involved diabetic patients and most of the quantitative studies reported a positive relationship between social support and self-management. That is, the more support patients get, the better they are able to manage their illness. Only one study found no relationship between social support and self-management. However, few methodological concerns were found which need to be addressed. Some studies used very small sample sizes (less than 60), some also used only one item in measuring social support which limited understanding of the complexities of social support and its effects.

Social support has been reported to influence glycemic control in type-2 diabetes patients. For example, in Stopford, Winkley and Ismail’s (2013) systematic review of observational studies examining the relationship between social support and glycemic control in adults with type 2 diabetes, they found that among 29 studies reviewed, about 20 were used in assessing social support such as marital status, family support, network size, perceived social support and multidimensional measures of social support. Some used composite scores while others used separate scores for the various sources or types of support. The results from the studies showed that family support and composite social support were mostly associated with reduced HbA1c. They also found that other measures of social support did not have any beneficial effects on HbA1c. This clearly shows that the role of social support cannot be left out in the management of diabetes as it goes beyond influencing psychological outcomes to even regulating physiological outcomes such as glycemic levels. However, the measure of assessment of social support is very important in studying its effects on both physical and psychological outcomes of diabetes.
Joensen, Almdal and Willaing (2013) investigated the relationship between cohabitation status and psychological aspects (diabetes distress, empowerment, quality of life, self-management behavior and glycemic control) of living with diabetes and sought to find out whether social support mediated the relationships. In a cross-sectional survey using an appreciably large sample of 2,419 adult patients with type 1 diabetes attending a specialized diabetes clinic in Denmark, Joensen and colleagues (2013) discovered that social network and social support were related to important diabetes outcomes. Low social support was associated with high diabetes distress, low empowerment, low quality of life and high HbA1c. Low social support was also associated with poor management of diabetes (less frequent intake of healthy diet, exercising and medication taking). Social support in addition mediated the relationship between cohabitation and psychological outcomes.

The study of Joensen, Almdal and Willaing (2013) was however carried out among people with type 1 diabetes who usually know of their diagnosis earlier than those with type 2 diabetes. The type 1 diabetic patients might have started managing the condition for a longer period as adults compared to those with type 2 diabetes. They would therefore require strong social support. However, the sources of support may decline with duration of the illness.

Similarly, results from studies done to investigate the influence of social support on psychological health and the quality of life of people suffering from other terminal and chronic illnesses demonstrate the relevance of social support when dealing with a stressful life situation such as illness. In their quest to examine the various types of social support and their relationship with physical, depressive symptoms and health-related quality of life in patients of heart failure, Heo, Lennie, Moser and Kennedy (2014) gathered data on different types of social support, depressive symptoms and health-related quality of life from 71 patients suffering from heart failure in a cross-
sectional correlational survey. Emotional support was found to be associated with physical and depressive symptoms and health-related quality of life. In addition, physical and depressive symptoms were found to significantly mediate the relationship between emotional support and health-related quality of life. Heo et al. (2014) further observed that marital status significantly related to health-related quality of life.

Again, the findings the study of Heo et al. (2014) indicate that not all types of social support have significant influence on physical and psychological outcomes in illness and quality of life. Some types of social support may exert more potent influence than others. It is therefore important to use multidimensional measures of social support in assessing social support. Also, the above study looked specifically at health-related quality of life pertaining to heart-failure which makes the findings limited to that domain. Studying the quality of life in other conditions may produce different results.

Cheng, Sit, Chang, So, Choi and Cheng (2013) examined social support and its association with quality of life of Chinese breast cancer survivors. They used a sequential mixed method design to gather data from 100 and 29 participants in the quantitative and qualitative phases of data collection respectively. Cheng et al. (2013) found that satisfaction with social support was significantly associated with quality of life while social network size had no association with quality of life among this sample. The interview phase revealed that among the support sources, close family relations and peer survivors of breast cancer were the major sources of social support for these patients.

The study of Cheng et al. (2013) proves that the measure of social support used in research is crucial in understanding its influence on quality of life. It is clear at this point that though several studies report that social support is essential in coping with illness, there has not been any
consensus on the measures of social support that are particularly essential for the process of disease management.

2.2.5. Self-care Activities and Quality of Life

Through their own experiences and the counselling of health-care givers, type-2 diabetic patients may learn to conform to certain kinds of healthy practices that would ensure or sustain quality of life for them. Some researchers have shown interest in how patients’ engagement in self-care activities contribute to their overall quality of life. For example, Svartholm and Nylande (2010) investigated the self-care activities of type-2 diabetic patients in Ho Chi Minh City. A total of 100 participants were involved in the study. Analysis of the participants’ responses revealed that majority of the patients engaged in healthy self-care practices and conformed to self-care recommendations from their health-care givers concerning diet, exercise, medication and blood-glucose control. Despite these impressive observation among the type-2 diabetic patients, Svartholm and Nylande (2010) failed to relate self-care activities of the patients to their quality of life and disease management. It remains relevant task to explore the link between healthy lifestyle practices and the risk of developing diabetes complications.

Viji and Singh (2014) examined self-care activities among 500 diabetic patients who responded to structured practice questionnaire. In contrast to the observation of Svartholm and Nylande (2010), results obtained by Viji and Singh (2014) indicated that self-care activities were not satisfactory. There was a significant relationship between the self-care activities of the diabetic patients and their socio demographic characteristics. Like Svartholm and Nylande (2010), Viji and Singh
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

(2014) also failed to associate patients’ self-care activities to their quality of life, thus creating a continuous gap in the literature.

Abioye-kuteyi, Ojofeitimi, Ijadunola, and Fasanu (2005) assessed the dietary knowledge, practices and control in 33 type-2 diabetes in a Nigerian teaching hospital over a three month period. The participants had truncal obesity and needed to lose weight. A little more than half of the participants (52%) were given dietary advice. The remaining were not. Results showed that participants with dietary advice had greater dietary knowledge than the participants who received no dietary advice. Abioye-kuteyi and his colleagues (2005) further observed that dietary knowledge was a significant predictor of healthy dietary practices and glycaemic control. Whilst the study of Abioye-kuteyi and his colleagues (2005) established a link with dietary knowledge and healthy dietary practices, they did not examine the impacts of these variables on the quality of life of diabetic patients.

In a cross-sectional survey involving 169 patients, Stacciarini, Pace, and José (2009) examined the most common correct and incorrect self-administration techniques for insulin. Results from their study revealed errors in all the steps for safe administration of insulin, from hand washing to compression on the injection site. According to the American Diabetes Association (2003), the injection of insulin is essential for management of patients with type-1 diabetes and may be needed by patients with type-2 diabetes for intermittent or continuous glycemic control. The American Diabetes Association (2003) further suggests that species and dosage of insulin used should be consistent, and the patient’s injection technique should be reviewed periodically with the diabetes care team. Since there are errors associated with self-administration of these techniques (Stacciarini, Pace, & José, 2009), there is the need to review the steps involved to make them more functional and useful to type-2 diabetic patients.
Although practice and self-care activity of diabetic patients may lead to quality and longevity of life, earlier researches have demonstrated continuous failure to associate self-care activities and the quality of life of type-2 diabetic patients. In addition, there is a methodological weaknesses associated with most of the earlier studies reviewed. In fact, most of them adopted descriptive designs which are inadequate for valid conclusion. To better understand the complex associations between self-care activities and quality of life among type-2 diabetic patients, a combined adoption of both quantitative and qualitative research designs would be useful.

2.2.6. Socio-demographic Variables and Quality of life

Certain socio-demographic variables have also been reported to be predictive of quality of life among diabetes patients. For instance, Bourdel-Marchasson, Druet, Helmer, Eschwege, Lecomte et al, (2013), in their aim to analyze a broad range of potential determinants of health-related quality of life in a large sample of patients with diabetes, employed a mail survey and secondary data. They found that the important correlates of health-related quality of life included age, gender, income, instrumental daily living, severe hypoglycemic episodes, satisfaction with social support, BMI index, macro vascular complications and hospitalization.

However, the dimensions of the association of these variables with health-related quality of life differed slightly from the mental and physical components of health-related quality of life. Lower income, severe hypoglycemic episodes, hospitalization, instrumental daily living restriction and low satisfaction with social support were associated with lower ratings in the mental component of health-related quality of life (HRQL), whilst older age and male gender were associated with higher ratings of mental HRQL. Older age, female sex, higher BMI, lower income, insulin
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

treatment, macro vascular complications, severe hypoglycemic episodes, hospitalization and instrumental daily activity restriction were also associated with lower rating of physical HRQL. Being satisfied with one’s social support was also associated with higher values in the physical component of HRQL. The findings suggest that age and gender have peculiar roles to play in the health-related quality of life among diabetes patients.

Gender differences were also found in Misra and Lager’s (2009) study. They investigated ethnic and gender differences in psychosocial factors, glycemic control and quality of life among type 2 diabetes patients and found that males reported greater burden and restriction in their social interactions and less leisure time flexibility than females. Quality of life indicators like physical complaints, dietary restriction, and the burden of disease were also statistically significant. Females were more likely to report difficulty with self-management behavior and dietary adherence. Females also reported poorer knowledge of the disease, and a less positive outlook compared to their male counterparts. Gender influence was found to be greater than ethnic influence.

Naughton, Yi-Frazier, Morgan, Seid and Lawrence (2014) examined the relationship between gender, diabetes health-care and the quality of life among children and youth with type 1 and type 2 diabetes in a longitudinal study. The discovered that participants with type 1 diabetes, there was an interaction effect between age and sex on health-related quality of life. Quality of life either remained stable or declined among females but increased among males. Among participants with type 2 diabetes, the situation was different as no interaction effect was found. However, being female was associated with poorer health-related quality of life. Age was found to be predictive of both psychological and social functioning among type 2 diabetes patients. The participants used were children and youth hence findings may not apply to adult diabetic patients. This
notwithstanding, the longitudinal nature of the study gives a clear picture of the role of age and sex on quality of life.

Unden, Elofsson, Adreasson, Hilered, Eriksson and Brismar (2008) compared aspects of health, quality of life and quality of care between men and women with type 2 diabetic patients. They found that women had worse quality of life. They also had the ability to cope with illness and mental well-being than men and the differences were more profound in middle-age. This finding suggests an interaction between age and gender as far as the quality of life among diabetes patients is concerned. Lee et al.’s (2013) study also showed that female gender was associated with poorer health-related quality of life confirming findings from the other studies. These findings point to the important role of gender in diabetes management.

Other socio-demographic variables which have been reported to be associated with diabetes management include education and duration of diabetes. For example, Gois et al. (2011) in their study found that gender, education and the duration of an illness were significantly linked to metabolic control which could have negative consequences on quality of life. In the study Paschalides et al (2004) however, among the demographic variables only age had a significant association with quality of life. This suggests that the specific demographic determinant of quality of life among diabetic patients is not very clear in the literature.
2.2.7. Cultural Perspective on Social Support, Religiosity, Depression, Anxiety, and Stress

Jarama, Reyst, Rodriguez, Belgrave, and Zea (1998) explored the factors that affect the psychosocial adjustment of immigrants with disabilities. They assessed the associations among stress, perception of disability severity, depression, and anxiety. They also explored moderating effect of social support on the association between stress and severity of disability on depression and anxiety. It was observed that stress, severity of disability, and social support accounted for 54% variance in depression. Stress and social support together accounted for 31% of the variance in anxiety. There was no significant interaction effect between support and stress and between support and disability severity on depression, although main effects were observed for stress, disability severity, and the interaction between support and disability severity. Whilst stress negatively predicted anxiety, social support was found to have a positive association with anxiety but the two predictors (stress and social support) did not exert any significant interaction influence on anxiety.

The findings of Jarama et al. (2012) reveal the relevance of social support in the management of disabilities and the need to reduce stress among individuals’ with disabilities, their definition of disability was rather too broad and may have undermined effect size.

Nguyen, Hood, and Belgrave (2012) investigated the association between intrinsic, personal extrinsic, and social extrinsic religiosity to breast and cervical cancer screening efficacy and behavior among Vietnamese women. A total of 111 Vietnamese women were recruited from a Catholic Vietnamese church and a Buddhist temple in the Richmond, Virginia metropolitan area to participate in the study. The recruits had earlier undergone a cancer screening intervention. Nguyen et al. (2012) observed that acculturation positively predicted self-efficacy and moderated the relationships between religiosity and self-efficacy for breast and cervical cancer screening.
Social extrinsic religiosity positively predicted efficacy for cancer screening among less acculturated women. There was also a significant moderation effect of acculturation on the association between religiosity and breast cancer screening. These findings demonstrate the important role of culture and religiosity in health behaviors.

Belgrave, Davis, and Vajda (1994) examined relationships among depression, active coping, and social support among African American and Latinos with disabilities. Belgrave and colleagues (1994) observed that active coping, satisfaction with social support, and type of disability significantly predicted depression for African Americans, whereas active coping, perception of severity of disability, and social support significantly predicted depression for Latinos. These findings underscore the importance of testing separate models for African Americans and Latinos.

Whilst Belgrave, Davis, and Vajda (1994) studied African American and Latinos with disabilities, the present study however focusses on continental Africans with no Latino comparison group. It assesses type-2 diabetic patients with a healthy control group within the Ghanaian cultural context.

Jarama, Belgrave, and Zea (1996) investigated the role of social support and stress on adjustment to college among 77 Latino college students. Results of the study revealed that social support positively predicted adjustment and negatively predicted stress. There was a negative association between stress and adjustment, suggesting that exposure to stress may impair effective adjustment. Nonetheless, there was no significant interaction effect of stress and social support on adjustment.

In a further examination of the functional nature of support, Jarama et al. (1996) discovered that compared to instrumental support, there was a stronger positive correlation between emotional social support and academic adjustment and a stronger negative correlation between emotional social support and stress. Again, support from friends negatively predicted stress. Although Jarama et al. (1996) established the positive impact of social support on adjustment and stress, their
definition of stress was more in line with academics than stress associated with chronic illness due to the characteristics of their sample (college students). The present study however assess the effect of social support on people who actually need it (patients with chronic illness).

Zea, Belgrave, Townsend, Jarama, and Banks (1996) investigated associations among depression, active coping, and social support in African Americans and Latinos living with disabilities. Standardized measures were used to obtain data from a sample of 109 African American and 57 Latinos living with disabilities. Results showed that active coping and social support significantly predicted depression among African Americans and Latinos. Whilst type of disability predicted depression among African Americans, severity of disability predicted depression for Latinos. These findings highlight cultural differences that exist in the psychosocial experiences of individuals. The present study therefore sought to provide the Ghanaian cultural perspective on psychosocial experiences of type-2 diabetes. Thus, it examined continental Africans within the Ghanaian cultural context.

2.2.8. Critique of Reviewed Studies

It can be deduced from the theories and related studies reviewed that religious coping and psychosocial factors are important to the quality of life and the overall management of type 2 diabetes. There have been varied measures used to assess quality of life, anxiety, depression and social support and the findings from these studies have not always been consistent. Most of the studies have looked specifically at health-related quality of life and not the general quality of life (Kneckt et al., 2001; Karlsen & Bru, 2002; Koopmanschap, 2002, Schabert et al., 2013). Some studies investigating the role of anxiety and depression have also looked at trait measures
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

(temperament) which may not always reflect a person’s emotion or psychological state at a particular point in time (Walders-Abramson et al., 2014; Hall et al., 2009).

Most studies in the reviewed literature failed to delineate different aspects of social support (life (Gleeson-Krieg, Bernal, & Woolley, 2002; Karlsen et al., 2004; McCracken, 2005; Karlsen et al., 2004; Tang et al., 2008; Trief et al., 1998). Indeed, not all aspects of social support may be important for quality of life among diabetes patients (Heo et al., 2014). However, it is not clear which aspects are most important.

The role of religion in the management of diabetes has also been hinted in the literature. Many studies have examined the role of religious attendance, religious beliefs and adherence to religious practices but did not relate these constructs to quality of life of type 2 diabetic patients (Adams, 2003; Cagle et al., 2002; de Vera, 2003; Dietrich 1996; Hornsten et al., 2004; Popoola, 2005; Samuel-Hodge et al., 2000; Young, 1993). Only few studies have investigated the specific role of religious coping in the management of chronic diseases (Pirutinsky et al., 2011; Braam et al., 2010)

Again, studies that examined prevalence and effectiveness of patients’ self-care activities in management of diabetes mostly studies employed the descriptive survey designs (Abioye-kuteyi et al., 2005; Stacciarini et al., 2009; Svartholm & Svartholm, 2010; Viji & Singh, 2014). These studies only reported the frequencies and percentages of patients who adhere to self-care practices but failed to assess the benefits of self-care activities to the quality of life of diabetic patients

Finally, the literature review shows the distinctive manifestation of the impact of social support and religiosity in stress management among African Americans and Latinos (Belgrave, 1994; Jarama et al. 1996; Jarama et al., 1998; Zea et al., 1996). However, the authors failed to provide an account on social support and religiosity among continental Africans, perhaps due to their
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

geographical limitation. The present study overcomes this limitation by highlighting the relevance and implication of social support and religiosity in coping with stress associated with type-2 diabetes within the Ghanaian cultural context.

2.3. Rationale of the Study

Research has shown that diabetic patients experience mental health problems associated with the management of the illness (Van der Ven, 2003) which ultimately impacts their quality of life and metabolic control. However, the specific roles of these mental health problems in especially individuals with type 2 diabetes are assumed in most of the studies (Kneckt et al., 2001; Karlsen & Bru, 2002; Koopmanschap, 2002). The study that looked specifically at the influence of mental health problems on the quality of life among diabetic patients (Rane et al., 2011) suggest that they are very crucial for quality of life and metabolic control among these patients. It is, therefore, important for more research to be conducted into the specific roles of mental health problems on quality of life especially stress, depression and anxiety as they have been reported as the most common mental health problems (Sulaiman et al., 2010; Walders-Abramson et al., 2014).

Despite the numerous studies on stress, depression and anxiety (Kneckt et al., 2001; Karlsen & Bru, 2002; Koopmanschap, 2002, Schabert et al., 2013), not much is known about their specific impact on the quality of life of type-2 diabetic patients especially in our part of the world (Ghana). These studies have focused mainly on mental health problems present in patients but did not focus on their impact on quality of life or management of the condition. Few of the studies focused on health-related quality of life and not the general quality of life of patients (Haghboor et al., 2013; Keeton et al., 2008; Paschalides et al., 2004). It is therefore not clear how these mental health
problems translate into general quality of life. A diabetic patient is a member of society and has to fulfill his or her roles in society which may relate with the illness. It is therefore necessary to establish the cultural distinctiveness of how stress, depression and anxiety affect the general quality of life of patients in collectivistic cultures. Thus, the present study investigates the specific roles of stress, depression and anxiety on quality of life using a measure which assesses quality of life from physical, psychological, social and environmental domains as well as self-care among Ghanaian samples.

From the studies reviewed, religion can be a coping resource for a person trying to cope with a stressful life even such as illness (Ferraro & Kelley-Moore, 2000; Harrison et al., 2001; Landis, 1996). However, not all forms of religious coping are helpful for the individual’s mental health and quality of life. In spite of the importance of religious coping, there is a paucity of literature among diabetes patients as to the role it plays in their mental health and quality of life. Previous studies focused mostly on other forms of coping such as emotional-focused, problem-focused, avoidance coping and active coping (Samuel-Hodge et al, 2008) and these studies all point to the fact that the type of coping used determines the outcome. Ghanaians are known as very religious people (Gyekye, 1996); therefore they are likely to rely on religious beliefs as a coping mechanism in times of illness. It is, therefore, important to determine the type of religious coping is mostly employed in our Ghanaian setting among diabetic patients and how this impacts their mental health outcomes, quality of life and self-care. The present study examined the influence of positive and negative religious coping on stress, depression, anxiety, quality of life and self-care of type 2 diabetic patients.

Finally, social support has been found to be an important part of diabetes management. Nonetheless, studies have shown that not all forms of social support have significant influence on
quality of life among diabetes patients but it is also not clear which forms of support are crucial for diabetes management (Lager, 2006; Gleeson-Krieg, Bernal, & Woolley, 2002; Trief et al., 1998). Some studies have also used single items and dimension of social support though social support is a multidimensional construct (Karlsen et al., 2004; McCracken, 2005). The present study therefore employs a multidimensional measure to assess social support.

2.4. Statement of Hypotheses

1. Type-2 diabetic patients will experience poorer quality of life than a healthy control group.

2. Religious coping will significantly improve the quality of life of type-2 diabetic patients.

3. Social support will have a significant positive impact on quality of life of type-2 diabetic patients.

4. Family support will significantly contribute more to quality of life than social support from friends and significant other.

5. Psychological health will be a significant predictor of quality of life of type-2 diabetic patients.

6. Self-care activities will have a positive significant impact on the quality of life of type-2 diabetic patients.

2.5. Operational Definition of Terms

*Psychological health:* It refers to depression, anxiety and stress associated with living with diabetes.

*Type-2 diabetic patients:* Patients of 40 years and above who are living with type-2 diabetes.

*Religious coping:* The use of religious beliefs, practices and rituals as a means of dealing with stresses associated with diabetes.
Social support: The support that patients receive from family, friends, and significant others such as religious group members and caregivers.

Self-care activities: Adherence to appropriate dietary control plan approved by dieticians for type-2 diabetic patients

Quality of life: The general well-being of patients characterized high level of psychological, emotional and social wellbeing.

2.6. Proposed Conceptual Model

Figure 1: Hypothesized Conceptual Model on Religiosity and Psychosocial Factors as predictors of quality of life of type-2 diabetic patients

Figure 1 depicts the possible influence of religious coping and psychosocial factors on quality of life of type-2 diabetic patients. The psychological factors identified in the study are depression, anxiety, and stress. These factors together constitute psychological health. The social factors, on
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

the other hand, are social support, and self-care. Three main sources of social support were identified and their relative effectiveness assessed. These are friends, family, and significant others. The aforementioned are proposed predictor variables for quality of life of type-2 diabetic patents.
CHAPTER THREE

METHODOLOGY

3.0. Introduction

This chapter outlines the methods and procedure used and the key steps that were followed in the conduct of this study. The chapter presents a description of the target population and the participants selected for the study. It also outlines the sample size and sampling techniques, as well as the research designs employed in the study. In addition, the chapter describes the instruments used to collect the research data and how the data was scored. Finally, the observation of the ethical principles in research relating to the study is also discussed.

3.1. Design

A mixed method research design known as triangulation was used for the study. Triangulation is a technique that facilitates validation of data through cross verification from two or more sources. In particular, it refers to the application and combination of several research methodologies in the study of the same phenomenon (Bogdan & Biklen, 2006). Triangulation allows a researcher to employ two (or more) methods in a study in order to check or confirm the validity and reliability of research findings. According to Maxwell (1999), different research approaches address different research questions and purposes; each approach has its own strengths and weaknesses, therefore choosing between them or using them together constitute a major research decision and requires thoughtful considerations. However, where a particular research situation requires the combined use of two or more approaches, their usage should be justified. The current research combined two research approaches in two different studies (i.e., study I and study II).
First, the researcher conducted a quantitative cross-sectional survey to obtain quantitative data to test the research hypotheses in study 1. Quantitative cross-sectional survey captures self-report information of an individual’s own attitudes, behaviours and experiences. Structured questionnaires were used. Questionnaires stand out as the most useful quantitative instrument for collecting data in survey research (Bryman, 2004). Questionnaires are viewed as the most practical and systematic way of collecting data (Wilson, 1996; Bryman, 2004). The process involved presenting the same set of questions to a group of respondents in a similar manner and making numerical recording of responses in a systematic and methodological way that makes analysis straightforward (Cohen, Manion, & Morrison, 2000). The time dimension of the study is cross-sectional, as the respondents of different ages, gender, and socio-economic status were assessed at a given time (Bless & Higson-Smith, 2000).

In study II, the researcher conducted a focus group discussion (FGD) with type-2 diabetic patients. The FGD, according to Millward (1995), is a discussion-based interview that produces a particular type of qualitative data. It involves the simultaneous use of multiple respondents to generate data and it is the ‘focused’ (i.e. on an external stimulus) and relatively staged (i.e. by a ‘moderator’) nature of the FGD method that separates it from other types of group interviewing strategies. In this study, the researcher employed the FGD to obtain qualitative data to confirm and explain the findings obtained from the quantitative study. The FGD helped the researcher to get closer to the patients’ understanding, feelings, and perspectives on living with type-2 diabetes. Thus, findings obtained from the FGD were used to validate and explain the findings obtained from the quantitative survey research.
3.2. Population / Sample

The population for the study comprised adults with Type-2 Diabetes in Ghana. Patients with Type 2 Diabetes were selected from the Diabetes Centre in Korle-Bu. In terms of ages, the patients were of 40 years to 80 years. They were from varied socio-economic and religious backgrounds. There were both males and females.

The sample for this study consisted of one hundred and sixty-four (164) respondents. The sample size was sufficient because, as suggested by Tabanichk and Fidel (1996), for a sample size to be representative in any study involving Regression analyses, the number of independent variables must be taken into consideration. Tabanichk and Fidel (1996) further suggested that the required sample size should be considered using the formula: \( N > 50 + 5M \) (\( N = \) sample size, \( M = \) number of IVs). Since there are two independent variables (IVs), the sample size is estimated to be greater than 60 \( (50 + 5(2)) \). This enables the researcher to compare the outcomes in persons living with Type-2 diabetes with their matched sample to draw valid conclusions based on the comparisons.

Of the total number of 164 participants, one hundred and fifty-six (156) were used for the quantitative study (study I), and 8 were used for the focus group discussion (study II). Among the 156 participants in study I, 76 were Type-2 diabetic patients and the remaining 80 participants were healthy individuals who constituted the control group. The healthy control group was a matched group to the diabetic patients with respect to age and educational levels. The characteristics of these participants are presented in table 1 below.
Table 1: Demographic Characteristics of the Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Diabetic patients</th>
<th>Healthy control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>((n=76))</td>
<td>((n=80))</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>43</td>
<td>49</td>
</tr>
<tr>
<td>Male</td>
<td>33</td>
<td>31</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>(M = 49.34, SD=5.64)</td>
<td>(M=49.54, SD=5.88)</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Married</td>
<td>44</td>
<td>49</td>
</tr>
<tr>
<td>Widowed</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Divorced</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Part-time</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Retired</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Retired with disability</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Self-employed</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td><strong>Educational Background</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Formal Education</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Primary education</td>
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<td>10</td>
</tr>
<tr>
<td>Junior High</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Senior High School</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>Tertiary</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Vocational/Apprenticeship</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td><strong>Religious Affiliation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>55</td>
<td>56</td>
</tr>
<tr>
<td>Islam</td>
<td>21</td>
<td>24</td>
</tr>
</tbody>
</table>

The results in table 1 show that there were a total of 156 participants in the quantitative study. The first column of the table shows the key demographic variables or characteristics of the participants. The second column shows the number of cases for type 2 diabetic patients. The third column shows the number of cases for the healthy control group.
3.3. Sampling Technique

Purposive and convenient sampling techniques were used. The purposive sampling technique was employed for the selection of individuals living with Type-2 diabetes. The convenient sampling was used to select the healthy controls as their participation was based on their availability and willingness to take part in the study.

3.4. Exclusion and inclusion Criteria

Inclusion Criteria
Except for the healthy control, participants for the study were 40 years and above, and had been diagnosed with diabetes for more than 5 years. The age group is relevant because it is reflective of patients with type-2 diabetes (WHO, 2006). The duration of diagnosis of morbidity was beyond 5 years because participants may have used different forms of coping strategies and have had more experience living with the disease than those that are newly diagnosed.

Exclusion Criteria
Pregnant women were excluded from this research because gestational diabetes may confound the results of the study. Diabetic patients who were blind were also excluded. Additionally, patients with memory loss, neurological problems, and cognitive impairments were also excluded.
3.5. Measures

Questionnaires containing standardized scales were employed to measure the various theoretical constructs being investigated in the study. The questionnaires were designed in sections. The first section inquired about the demographic characteristics of the participants. The second section measured religious coping using the Brief RCOPE (Pargament, Smith, Koenig & Perez, 1998). The third section measured the psychological well-being of the participants using the Depression Anxiety and Stress Scale (DASS) -21 (Lovibond & Lovibond, 1995). The fourth section contained Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) which was used to measure social support. The fifth section contained the Summary of Diabetes Self-Care Activities (Toobert, Hampson, & Glasgow, 2000). The final section of the questionnaire comprised WHOQOL-Bref (Skevington, Lofty, & O’Connell, 2004) which measured the quality of life of the participants.

Section A: Demographic Characteristics of Participants

The key demographic characteristics identified in the study were sex, age, marital status, income, level of education, religious affiliation, employment status and duration of illness since first diagnosis.

Section B: The Brief RCOPE (Pargament, Smith, Koenig & Perez, 1998)

The Brief RCOPE is a 14-item measure of religious coping with major life stressors. The first seven (7) items measure positive religious coping while the last seven (7) items measure negative religious coping (that is religious/spiritual struggle). The Brief RCOPE is multi-modal in nature. The scale selects items that represent how people employ religious coping methods cognitively through thoughts and attitudes (e.g. “Saw my situation as part of God’s plan”; “Thought that the
event might bring me closer to God”), behaviorally through actions (e.g. “Prayed for a miracle”; “Confessed my sins”), emotionally through the specific feelings they express (e.g. “Felt my church seemed to be rejecting or ignoring me”; “Sought God’s love and care.”), and relationally through actions that involve others (e.g. “Offered spiritual support to family or friends.”; “Sought a stronger spiritual connection with other people.”). The reliability of the scale is reported to be ranging from a Cronbach’s alpha of 0.80 to 0.92. A four likert-point response format is used for positive and negative subscales by adding up the responses on the first 7 items and the last 7 respectively.

**Section C: Depression Anxiety and Stress Scale (DASS) -21** (Lovibond & Lovibond, 1995)

The third section of the questionnaire (Section C) measured the psychological wellbeing of the participants using the Depression Anxiety and Stress Scales (DASS) developed by Lovibond and Lovibond, (1995). The DASS is a widely used screening tool to assess symptoms of depression, anxiety, and stress in community settings. This instrument comprises three sub-scales: (1) the Depression sub-scale which measures hopelessness, low self-esteem, and low positive affect; (2) the Anxiety scale which assesses autonomic arousal, musculoskeletal symptoms, situational anxiety and subjective experience of anxious arousal; and (3) the Stress scale which assesses tension, agitation, and negative effect. There are two forms of the DASS: the full 42-item and the short 21-item versions. Both assess the same domains. However, for convenience in administration, the current study made use of the 21-item version.

The 21-item DASS consists of three subscales. Each of the three sub-scales: (DASS21-D), Anxiety (DASS21-A), and Stress (DASS21-S) has seven items. Each item comprises a statement and four short response options to reflect severity and scored from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). In order to yield equivalent scores to the full
DASS 42, the total score of each scale is multiplied by two (Lovibond & Lovibond, 1995) and ranges from 0 to 42. Lower score on the overall scale will reflect better psychological well-being and higher scores will represent worse psychological well-being. The internal consistencies of the three subscales were 0.71 for depression, 0.79 for anxiety and 0.81 for stress (Lovibond & Lovibond, 1995). In the normative sample based on 1,870 Australian females aged 17 to 79 years, means (standard deviation) were 6.14 (6.92) for the DASS21-D sub-scale; 4.80 (5.03) for the DASS21-A subscale and 10.29 (8.16) for the DASS21-S subscale (Lovibond & Lovibond, 1995).

**Section D: Multidimensional Scale of Perceived Social Support** (Zimet, Dahlem, Zimet, & Farley, 1988)

The Multidimensional Scale of Perceived Social Support is a 12-item self-report assessment instrument designed to measure levels of perceived social support from three perspectives: family, friends, and significant others (Zimet, Dahlem, Zimet, & Farley, 1988). Each source of social support is assessed using four specific questions and was rated on a 7-point Likert scale from 1 = (Very Strongly Disagree), 2 = (Strongly Disagree), 3 = (Mildly Disagree), 4 = (Neutral), 5 = (Mildly Agree), 6 = (Strongly Agree), and 7 = (Very Strongly Agree). A total score was obtained by summing all of the items and scores ranged from 12 to 84. Higher scores indicated higher perceptions of social support and lower scores indicated lower perceptions of social support. Internal consistency reported for the scale was between .80 and .95.
Section E: Summary of Diabetes Self-Care Activities (Toobert, Hampson, & Glasgow, 2000).

The Diet subscale of the Summary of Diabetes Self-Care Activities (Toobert, Hampson, & Glasgow, 2000) was used to assess how individuals influence their health outcomes through regular healthy practices. The Diet subscale is a 5-item scale of the general summary scale which measures diabetic patients’ diet regimen and how well the patient follows the prescribed procedures. Some of the questions on the scale include; “On average, over the past month, how many days per week have you followed your eating plan?” and “On how many of the last seven days did you eat five or more servings of fruits and vegetables? The entire scale has been shown to be valid and reliable with a Cronbach’s alpha of .74 (Lager, 2006).

Section F: WHO Quality of Life-Bref (Skevington, Lofty, & O’Connell, 2004)

The WHO Quality of Life-Bref (WHOQOL-Bref) is a 26-item questionnaire that measures an individual’s general quality of life as well as domain specific quality of life. The WHOQOL-Bref is a summary version of the original 100-item WHOQOL. Some examples of items on the WHOQOL-Bref include “How satisfied are you with the support you get from your friends? “How satisfied are you with the conditions of your living place?”, “How satisfied are you with your access to health services?”, “How would you rate your quality of life?”, “To what extent do you feel that physical pain prevents you from doing what you need to do?” and “How much do you enjoy life?” The WHOQOL-Bref is known to have a Cronbach’s alpha reliability coefficient of 0.81 (Skevington et al. 2004).
3.6. Procedure

Ethical clearance for the study was obtained from the Ethical Committee for Humanities (ECH) of the University of Ghana. Institutional permission was also sought from the Diabetes Centre at the Korle-Bu Teaching Hospital. The researcher secured the institutional permission by presenting an introductory letter from the Psychology Department to the unit head of the Diabetes Centre. Upon receipt of the introductory letter, the unit head permitted the researcher to carry out the data collection exercise within a three month period.

To commence the quantitative study, the researcher conducted a pilot study prior to the full-scale study. The result of the pilot study guided the researcher to modify and adapt some scale items to fit the Ghanaian population. After the pilot study, the researcher prepared a total of 180 questionnaires and distributed them to the participants. The return rate of the questionnaire was encouraging as a total of 164 out of the 180 questionnaires was retrieved. This represented a 90% return rate. Out of the 164 questionnaires that were retrieved, 156 were found valid for the data analyses. The remaining 8 questionnaires were not complete and therefore excluded from the analyses. It took an average time of 20 minutes for the participants to complete a questionnaire. The researcher assisted participants who could not read or write to fill in their questionnaires. The researcher adhered to all ethical principles in research. The researcher genuinely appreciated the time and effort of the participants after the completion of the questionnaire.

After the quantitative study, the researcher conducted a focused group discussion involving 8 participants who were type-2 diabetic patients. The researcher served as the facilitator for the discussion. Participants were allowed the freedom and liberty to provide uninterrupted reports on their own experiences with regard to living with diabetes and to express their views and feelings in a conducive atmosphere.
3.7. Pilot Study

The present study was preceded by a pilot study to fundamentally assess the feasibility of a full-scale study as was proposed to be undertaken (Baker, 1994; Polit, Beck & Hungler, 2001). The pilot study sought to test the adequacy of research instruments to be employed and where necessary, modify to suit research or develop appropriate ones, design a research protocol that guided the study and assess whether the research protocol was realistic and workable. In addition, the pilot study was conducted to establish the effectiveness of the sampling frame and techniques employed in the study. It was also to identify logistical problems which might occur using the proposed methods, estimate variability in outcomes to help determine sample size, and collect preliminary data. The researcher also conducted the pilot study to determine what resources (financially) were needed for the main study, assess the proposed data analysis techniques to uncover potential problems, confirm with a research question and research plan and develop an alternative where necessary.

Of essence, however, was the need to be able to generalize the findings of the present study. So in conducting the pilot project, the Cronbach Alpha was used to determine the reliability of all the subscales employed in the analysis of the various constructs that were investigated. A sample frame of 38 participants comprising 18 type-2 diabetic patients and 20 healthy control individuals was used for the pilot study. The various coefficient alpha obtained for the various scales had a high level of reliability since a score of 0.6 and above is to be considered fairly good.
Table 2: Cronbach’s Alpha Reliability Coefficients of Scales and Subscales obtained from Pilot Study

<table>
<thead>
<tr>
<th>Scales</th>
<th>Number of Items</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religious Coping</td>
<td>14</td>
<td>.68</td>
</tr>
<tr>
<td>Positive Religious Coping</td>
<td>7</td>
<td>.71</td>
</tr>
<tr>
<td>Negative Religious Coping</td>
<td>7</td>
<td>.64</td>
</tr>
<tr>
<td>Social Support</td>
<td>12</td>
<td>.77</td>
</tr>
<tr>
<td>Family</td>
<td>4</td>
<td>.81</td>
</tr>
<tr>
<td>Friends</td>
<td>4</td>
<td>.73</td>
</tr>
<tr>
<td>Significant Other</td>
<td>4</td>
<td>.78</td>
</tr>
<tr>
<td>Self-care</td>
<td>5</td>
<td>.89</td>
</tr>
<tr>
<td>Psychological Well-being (DASS-21)</td>
<td>21</td>
<td>.83</td>
</tr>
<tr>
<td>Depression (D)</td>
<td>7</td>
<td>.81</td>
</tr>
<tr>
<td>Anxiety (A)</td>
<td>7</td>
<td>.73</td>
</tr>
<tr>
<td>Stress (S)</td>
<td>7</td>
<td>.86</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>26</td>
<td>.81</td>
</tr>
</tbody>
</table>

3.8. Ethical Consideration

Invariably, diabetic patients are known to be one of the vulnerable groups in the population. Aside from their chronic illness, the patients tend to suffer social stigma and discrimination from the public which may affect their psychological well-being (Schabert, Browne, Mosely, & Speight, 2013). For this reason, some diabetic patients may feel reluctant to participate in studies that will reveal their identity to the public. In awareness of this fact, the researcher took measures to ensure the emotional and psychological stability of the participants during the data collection exercise through a strict adherence to ethics in psychological research. The following ethical codes specified by the American Psychological Association (APA, 2000) were strictly adhered to.
Voluntary Participation is an ethical principle that requires that people must not be coerced into participating in research (APA, 2000). In obedience to this principle, the researcher allowed patients to freely and voluntarily offer themselves for participation. No participant was forced or coerced to participate in the study.

Informed Consent is another ethical principle that demands that prospective research participants must be fully informed about the nature, procedures and risks involved in a research before they voluntarily give their consent to participate (APA, 2000). This principle was thoroughly respected in the conduct of this research. Participants in this research were well informed before giving their consent for participation. The researcher dutifully provided detailed explanatory information on the research to all prospective respondents / participants. (see consent form in appendix III). Afterward, there was a consent form provided to each participant to officially indicate his or her voluntary consent for participation (see appendix III). The consent form was signed by each participant before participation.

The principle of confidentiality requires researchers to respect the privacy of their participants in terms of information they obtain about their participants (APA, 2000). Conscious of the social stigma attached to chronic illnesses in the Ghanaian community, the researcher adhered to strict confidentiality. Prior to the commencement of data collection, the researcher had assured all prospective participants of a strict form of confidentiality. All pieces of information provided by the participants were strictly kept confidential. Only the researcher took full custody of questionnaires that contained the sensitive information of her participants.

Aside the principle of confidentiality, the principle of anonymity requires researchers not to disclose the identity or names of their participants (APA, 2000). This principle was well respected in the conduct of this research. Throughout the data collection exercise, there was no attempt made
to obtain participants names. Even the questionnaires used for the data collection did not have any space for participants to write their names. Moreover, in the research report, there is no mention of any name of a participant. All these efforts provide proof to the fact that the principle of anonymity was strictly respected in the study.

Avoidance of harm an ethical principle that requires that researchers do not put participants in a situation where they might be at risk of harm as a result of their participation (APA, 2000). Harm, in this context, may be both physical and psychological. Description of any reasonable foreseeable risks or discomfort to the participant including physical, social and psychological risk must be disclosed to participants. In the consent form (appendix III), such information was conveyed to all prospective participants.

The principle of beneficence was also observed. This principle requires researchers to make known any possible benefits associated with participation (APA, 2000). Information about the possible benefits to participants for participating was made available in the consent form provided to all participants (see appendix III). The possible benefits were both personal and public. In terms of personal benefits, participants were made to believe that their participation could boost their self-confidence and also allow them the opportunity for self-introspection. In terms of public benefits, the participants were made to believe that their participation would enable them contribute to knowledge on the general conditions of HIV/AIDS patients in the Ghanaian community.

Finally, duration of Participation is an ethical principle that demands that researchers declare the span of time that they will engage individual participants in the research (APA, 2000). In the explanatory letter to participants, such information was provided to the participants. The time duration for engagement of individual participants ranged from 15 to 30 minutes with an average time frame of 20 minutes.
CHAPTER FOUR

RESULTS

Study I: Quantitative Study

4.1. Statistical Tests for Analyses

This chapter presents the results from the data analysis and their interpretations. The presentation is done in descriptive (standard deviation, mean, etc.), and the inferential statistics. The inferential analysis was used to test the research hypotheses. The Hierarchical Regression Test was the main statistical test employed for the hypotheses testing. This was useful in determining the extent to which a number of independent variables predict quality of life among type-II diabetic patients. The Regression analysis was preceded by a preliminary analysis that tested normality of the data, and descriptive analysis on the key variables in the study.

Six hypotheses were stated and tested using three different parametric statistical tests. These tests were the independent \( t \) test, the Pearson Product-Moment Correlation Coefficient \((r)\), and the Hierarchical Linear Regression Test. Two main factors informed the choice of these parametric tests. First, the main dependent variable (i.e., quality of life) of all the research hypotheses was measured on the interval scale. Second, the distribution of scores was normal in form and continuous. These two observations satisfied the key assumption underlying the use of parametric tests.

The researcher used the independent samples \( t \) test to test the first research hypothesis and the Hierarchical Regression test to test the remaining five research hypotheses. The independent samples \( t \) test was used to compare the quality of life of type-2 diabetic patients and the control group. This test was appropriately used because the dependent variable (i.e., quality of life) was measured on the interval scale, and the two groups that were compared (i.e, type-2 diabetic patients
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

and the healthy control group) were mutually exclusive. However, in assessing how various independent variables (i.e., religious coping, social support, depression, anxiety, stress, and self-care) predicted quality of life, the researcher employed the Hierarchical Linear Regression Model. This was found to be most appropriate for the data analysis because through this model, the researcher was able to assess amount of variance that the independent variables accounted for in the criterion variable (i.e., quality of life) and the contribution of each independent variable to the criterion variable (see Brace, Kemp & Snelgar, 2003; Punch, 2005). The Pearson r test was used to establish the relationship existing between the various variables under investigation. This test enabled the researcher to determine the strength and direction of the relationship between the variables prior to the Regression analyses.

The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0. The analysis was conducted in two main stages. The first stage involved preliminary analysis in which the researcher tested for normality of data and means and standard deviations. The second stage involved the testing of the research hypotheses.

4.2 Preliminary Analysis

The preliminary analysis was done in three steps. These included analysis of normality of the distribution of data, descriptive statistics (means and standard deviation), and correlation analysis of the key variables. In the first place, the normality of the data obtained for the study was verified. This was done by checking the skewness and kurtosis of the data obtained. Regarding issues of normality, all the variables were normally distributed (see Table 3). Normality was accepted when Skewness and Kurtosis were between -1 and +1 (Tabachnick & Fidell, 2001). All the variables...
were accordingly used in the parametric statistical tests. The next step involved computing the descriptive statistics of key variables and the demographic data. The demographic analyses were done in frequencies and percentage scores (see table 1). Finally, coefficient of internal consistency (Cronbach’s α) was also computed to establish the reliability of each of the scales and subscales in the questionnaire. Measures had satisfactory reliabilities, with alpha values ranging from .72 to .93 (see table 4). This is consistent with the suggestion of Nunnally (1978) that the coefficient alpha should be equal or higher than .70 if a set of items can constitute a reliable scale.

Table 3: Descriptive Analyses on Key Variables (n = 156)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean (SD)</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religious Coping</td>
<td>21.74 (4.70)</td>
<td>.69</td>
<td>.34</td>
</tr>
<tr>
<td>Social Support</td>
<td>62.35 (16.14)</td>
<td>.79</td>
<td>.79</td>
</tr>
<tr>
<td>Self-care</td>
<td>26.06 (4.83)</td>
<td>.80</td>
<td>.64</td>
</tr>
<tr>
<td>Depression</td>
<td>13.33 (5.62)</td>
<td>.73</td>
<td>.89</td>
</tr>
<tr>
<td>Anxiety</td>
<td>11.18 (6.67)</td>
<td>.42</td>
<td>.72</td>
</tr>
<tr>
<td>Stress</td>
<td>18.21 (4.46)</td>
<td>.77</td>
<td>.77</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>96.89 (10.88)</td>
<td>.46</td>
<td>.82</td>
</tr>
</tbody>
</table>

Table 3 shows the mean scores of the participants together with their corresponding standard deviations (SD) on the key variables in the study. The key variables examined in the study were religious coping, social support, self-care, depression, anxiety, stress and quality of life. The results of the tests of normality have also been presented in the table. Observably, data on all the variables well within the required range of normality measured in terms of skewness and kurtosis.
Table 4: Correlations and Cronbach’s Alpha Reliability Coefficients of Scales and Subscales

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Religious Coping</td>
<td>.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Positive Religious Coping</td>
<td>.82**</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Negative Religious Coping</td>
<td>.45**</td>
<td>-14*</td>
<td>.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Social Support</td>
<td>-.12</td>
<td>.00</td>
<td>-.22**</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Family</td>
<td>-.03</td>
<td>-.01</td>
<td>-.03</td>
<td>.63**</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Friends</td>
<td>-.13</td>
<td>-.09</td>
<td>-.08</td>
<td>.72**</td>
<td>.50**</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Significant Other</td>
<td>-.08</td>
<td>-.02</td>
<td>-.10</td>
<td>.63**</td>
<td>.47**</td>
<td>.43**</td>
<td>.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Self-care</td>
<td>.07</td>
<td>.09</td>
<td>-.02</td>
<td>.04</td>
<td>.09</td>
<td>.11</td>
<td>.26**</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Psychological Health</td>
<td>.14*</td>
<td>-.06</td>
<td>.33**</td>
<td>-.06</td>
<td>-.06</td>
<td>-.07</td>
<td>-.11</td>
<td>-.13</td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Depression</td>
<td>.09</td>
<td>-.12</td>
<td>.34**</td>
<td>-.30**</td>
<td>-.30**</td>
<td>-.17*</td>
<td>-.36**</td>
<td>-.07</td>
<td>.35**</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Anxiety</td>
<td>.09</td>
<td>-.01</td>
<td>.18*</td>
<td>-.17*</td>
<td>-.13</td>
<td>-.21**</td>
<td>-.20**</td>
<td>-.25**</td>
<td>.51**</td>
<td>.27**</td>
<td>.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Stress</td>
<td>.18*</td>
<td>.03</td>
<td>.25**</td>
<td>-.24**</td>
<td>-.30**</td>
<td>-.21**</td>
<td>-.40**</td>
<td>-.17*</td>
<td>.26**</td>
<td>.39**</td>
<td>.24**</td>
<td>.93</td>
<td></td>
</tr>
<tr>
<td>13. Quality of Life</td>
<td>.17*</td>
<td>.16*</td>
<td>-.19**</td>
<td>.32**</td>
<td>.44**</td>
<td>.36**</td>
<td>.36**</td>
<td>.30**</td>
<td>-.26**</td>
<td>-.38**</td>
<td>-.44**</td>
<td>-.28**</td>
<td>.89</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; Bolded values Cronbach’s represent alpha reliability coefficients

Table 4 provides the correlation matrix for religious coping, social support, self-care, psychological health, and quality of life scales and subscales. The correlation matrix reveals that quality of life significantly correlated with all scales and subscales. This provided sufficient grounds for Linear Regression Analyses to be conducted. In addition, table 4 reports the Cronbach’s alpha reliability coefficients of scales and subscales in bolded values. All scales and subscales had appreciably sufficient Cronbach’s alpha reliability.
4.3. Hypotheses Testing

**Hypothesis 1**: Type-2 diabetic patients will experience poorer quality of life than healthy control group.

*Table 5: Quality of Life among Type-2 Diabetic Patients and Healthy Control Group*

<table>
<thead>
<tr>
<th>Type of participant</th>
<th>n</th>
<th>Mean(SD)</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic Patients</td>
<td>76</td>
<td>94.92(9.61)</td>
<td>-2.232</td>
<td>154</td>
<td>.027</td>
</tr>
<tr>
<td>Healthy Control</td>
<td>80</td>
<td>98.76(11.72)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The first hypothesis compared type-2 diabetic patients and a healthy control group on their quality of life. This was done by using the independent samples *t* test. The results of the test, as shown in table 5 above, reveals that there is a significant difference in quality of life among type-2 diabetic patients and the healthy control group (*t*<sub>154</sub> = -2.232, *p* < .05). The quality of life of type-2 diabetic patients (*M* = 94.92, *SD* = 9.61) was significantly less than the quality of life of type-1 diabetic patients (*M* = 98.76, *SD* = 11.72). This confirms the first research hypothesis that Type-2 diabetic patients will experience poorer quality of life than healthy control group.

**Testing of Hypotheses 2, 3, 4, 5 and 6**

The Hierarchical Linear Regression test was used to test hypotheses 2, 3, 4, 5, and 6. Hypothesis 2 predicted that *religious coping will significantly improve quality of life of type-2 diabetic patients*. Hypothesis 3 predicted *that social support will have a significant positive impact on quality of life of type-2 diabetic patients*. In hypothesis 4, the researcher conjectured that *family support will significantly contribute more to quality of life than support from friends and significant other*. The researcher further conjectured in hypothesis 5 that that *psychological well-being will be a significant predictor of quality of life of type 2 diabetic patients*. Finally, it was
predicted in hypothesis 6 that self-care activities will have a significant positive impact on the quality of life of type-2 diabetic patients. The hierarchical linear regression analysis on these five hypotheses has been presented in the table below.

### Table 6: Hierarchical Linear Regression Analyses on Predictors of Quality of Life among Type-2 Diabetic Patients

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E.</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>95.663</td>
<td>8.445</td>
<td>.045</td>
</tr>
<tr>
<td>Sex</td>
<td>.948</td>
<td>2.194</td>
<td>-.246</td>
</tr>
<tr>
<td>Age</td>
<td>-.246</td>
<td>.108</td>
<td>-.247*</td>
</tr>
<tr>
<td>Highest education</td>
<td>.632</td>
<td>.747</td>
<td>.087</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-.923</td>
<td>2.061</td>
<td>-.046</td>
</tr>
<tr>
<td>Religious Affiliation</td>
<td>-.769</td>
<td>2.219</td>
<td>-.036</td>
</tr>
<tr>
<td>Employment status</td>
<td>1.325</td>
<td>.509</td>
<td>.272*</td>
</tr>
<tr>
<td>Income</td>
<td>.011</td>
<td>.004</td>
<td>.298**</td>
</tr>
<tr>
<td><strong>Step 2: Religious Variable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>78.623</td>
<td>9.430</td>
<td></td>
</tr>
<tr>
<td>Religious Coping</td>
<td>.425</td>
<td>.129</td>
<td>.336**</td>
</tr>
<tr>
<td><strong>Step 3: Social Support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>72.761</td>
<td>8.369</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>.740</td>
<td>.185</td>
<td>.462***</td>
</tr>
<tr>
<td>Friends</td>
<td>.009</td>
<td>.163</td>
<td>.006</td>
</tr>
<tr>
<td>Significant Other</td>
<td>.446</td>
<td>.153</td>
<td>.286**</td>
</tr>
<tr>
<td><strong>Step 4: Psychological Health</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>91.186</td>
<td>8.561</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-.207</td>
<td>.128</td>
<td>-.151</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.246</td>
<td>.163</td>
<td>-.154</td>
</tr>
<tr>
<td>Stress</td>
<td>-.444</td>
<td>.172</td>
<td>-.244*</td>
</tr>
<tr>
<td><strong>Step 5: Personal Variable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>78.725</td>
<td>8.653</td>
<td></td>
</tr>
<tr>
<td>Self-care</td>
<td>.505</td>
<td>.144</td>
<td>.256***</td>
</tr>
</tbody>
</table>

$R^2 = .312, .408, .552, .662$ and .718 for step 1, 2, 3, 4 and 5 respectively. $\Delta R^2 = .096, .143, .111$ and .056 for step 2, 3, 4 and 5 respectively. $^*p < .05; ^{**}p < .01; ^{***}p < .001$. 

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In conducting the five-step Hierarchical Model, the researcher identified and controlled certain key demographic characteristics of the participants that were likely to influence their quality of life. The key demographic characteristics identified as control variables in step 1 of the hierarchical regression model were sex, age, highest education, marital status, religious affiliation, employment status, and income level. Together, these demographic variables accounted for 31.2% of the variance in the criterion variable which is quality of life ($R^2 = .312, F(7, 68) = 4.407, p = .000$). The demographic variables whose contributions were significant were age ($\beta = -.247, p < 0.05$), employment status ($\beta = .272, p < 0.05$), and income ($\beta = .272, p < 0.01$). Sex, highest education, marital status, and religious affiliation were not significant predictors of quality of life of type-2 diabetic patients.

In step 2 of the hierarchical regression model, the researcher analyzed the effect of religious coping on quality of life in line with the prediction in Hypothesis 2. The results of the analyses indicated that religious coping together with demographic variables significantly accounted for 40.8% and alone accounted for 9.6% of the variance in quality of life of type-2 diabetic patients ($R^2 = .408, \Delta R^2 = .096, \Delta F(1, 67) = 10.891, p = .002$). Its contribution to quality of life was positive and significant ($\beta = .336, p < 0.01$), suggesting that positive religious coping improves quality of life of type-2 diabetic patients. This confirmed the second research hypothesis that religious coping will significantly improve quality of life of type-2 diabetic patients.

Again, the researcher tested Hypothesis 3 in step 3 of the hierarchical regression model. Social support together with the demographic variables and religious coping significantly accounted for 55.2% of the variance in quality of life among type-2 diabetic patients and alone significantly accounted for 14.3% of the variance ($R^2 = .552, \Delta R^2 = .143, \Delta F(1, 66) = 21.084, p = .000$). This
observation confirms the third research hypothesis that *social support will have a significant positive impact on quality of life of type 2 diabetic patients.*

To test for Hypothesis 4, the researcher compared the relative contributions of the three sources of social support (i.e., family, friends, and significant others) to the variance in quality of life. The result in step 3 of the hierarchical regression model shows that family support made a greater significant contribution to the variance in quality of life of type-2 diabetic patients ($\beta = .462, p < 0.001$) than support from significant others ($\beta = .286, p < 0.01$). Social support from friends did not make any significant contribution to the variance in quality of life of type-2 diabetic patients ($\beta = .006, p > 0.05$). The data thus confirms Hypothesis 4 that predicted that *support from family will significantly contribute more to quality of life than support from friends and significant other.*

Hypothesis 5 was tested in step 4 of the hierarchical model. The results show that psychological health together with demographic variables, religious coping, and social support accounted for 66.2% and alone accounted for 11.1% of the variance in quality of life of type-2 diabetic patients ($R^2 = .662, \Delta R^2 = .111, \Delta F(1, 63) = 6.878, p = .000$). Psychological health variables examined in step 4 of the model were depression, anxiety, and stress. Among these, only stress made a significant negative contribution to quality of life ($\beta = -.244, p < 0.05$). There was no significant contribution of depression ($\beta = -.151, p > 0.05$) and anxiety ($\beta = -.154, p > 0.05$) to quality of life of type-2 diabetic patients. This implies that the current data partially supported Hypothesis 5 that predicted that *psychological health will be a significant predictor of quality of life of type 2 diabetic patients.*

Finally, the researcher tested Hypothesis 6 in step 5 of the hierarchical regression model. The model revealed that self-care together with demographic variables, religious coping, social support, and psychological health accounted for 71.8% and alone accounted for 5.6% of the variance in quality of life of type-2 diabetic patients ($R^2 = .718, \Delta R^2 = .056, \Delta F(1, 62) = 12.242, p = $
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

.000). This confirms the prediction in Hypothesis 6 that self-care activities will have a significant positive impact on the quality of life of type-2 diabetic patients.

4.4. Summary of Findings from Study I

The following are summary of the findings obtained after statistically testing all the six formulated research hypotheses.

1. Type-2 diabetic patients experienced poorer quality of life than the healthy control group.
2. Religious coping significantly improved the quality of life of type-2 diabetic patients.
3. Social support had a significant positive impact on quality of life of type-2 diabetic patients.
4. Support from family significantly contributed more to quality of life than support from significant other. However, support from friends was not a significant predictor of quality of life among type-2 diabetic patients.
5. Stress negatively predicted quality of life but depression and anxiety were not significant predictors of quality of life among type-2 diabetic patients.
Study II: Focus Group Discussion (FGD)

The focus group discussion (FGD) involved 8 type-2 diabetic patients who served as participants. The participants were identified as Agyapong, Akosua, Dzifa, Asantewaaah, Dogbe, Eno-Abenaa, Kwamena, and Mohammed. These are pseudo names given to the participants to ensure anonymity. Agyapong was a 45 year old married man who was a Christian and a teacher. Asana was a 54 year old married woman who was a Muslim and a nurse. Dzifa was a 46 year old woman who was unmarried, a Christian, and a trader. Maame Asantewaaah was a 71 year old woman who was a widower, a Christian and retired teacher. Dogbe was a 51 year old married man who was a Christian and a banker. Eno-Abenaa was a 49 year old woman who was single, a Christian, and a trader. Kwamena was 50 year old married man who was a Christian and a factory worker. Mohammad was a 53 year old married man who was a Muslim and a driver. From their characteristics, all the participants were occupationally engaged except Maame Asantewaaah who had retired. There were equal number of females males (4 females and 4 males). With regard to their religious affiliation, 6 of the participants were Christians and 2 were Muslims. Below is a demographic table displaying the composition of the sample for the FGD.

Table 7: Demographic Characteristics of the FGD Participants

<table>
<thead>
<tr>
<th>Names</th>
<th>Gender</th>
<th>Age</th>
<th>Marital Status</th>
<th>Religious affiliation</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agyapong</td>
<td>Male</td>
<td>45</td>
<td>Married</td>
<td>Christian</td>
<td>Teacher</td>
</tr>
<tr>
<td>Asana</td>
<td>Female</td>
<td>54</td>
<td>Married</td>
<td>Muslim</td>
<td>Nurse</td>
</tr>
<tr>
<td>Dzifa</td>
<td>Female</td>
<td>46</td>
<td>Single</td>
<td>Christian</td>
<td>Trader</td>
</tr>
<tr>
<td>Maame Asantewaaah</td>
<td>Female</td>
<td>71</td>
<td>Widowed</td>
<td>Christian</td>
<td>Retired</td>
</tr>
<tr>
<td>Dogbe</td>
<td>Male</td>
<td>51</td>
<td>Married</td>
<td>Christian</td>
<td>Banker</td>
</tr>
<tr>
<td>Eno-Abenaa</td>
<td>Female</td>
<td>49</td>
<td>Single</td>
<td>Christian</td>
<td>Trader</td>
</tr>
<tr>
<td>Kwamena</td>
<td>Male</td>
<td>50</td>
<td>Married</td>
<td>Christian</td>
<td>Factory worker</td>
</tr>
<tr>
<td>Mohammad</td>
<td>Male</td>
<td>53</td>
<td>Married</td>
<td>Muslim</td>
<td>Driver</td>
</tr>
</tbody>
</table>

*Pseudo names of participants
Analysis of Data

Oral responses of the participants in the FGD were transcribed into textual form. Content analysis technique was applied to analyze the transcribed data. Content analysis involves the strict and systematic set of procedures for rigorous analysis, examination, and verification of the contents of textual data. It focuses on language and linguistic features and meaning in context as the rules for analysis are explicit, transparent, and public (Mayring, 2004).

In doing the content analysis, the researcher followed the guidelines suggested by Robson (1993). First, sentences were defined as the units of analyses. Here, sentences that converged on central themes were assigned a common code. Second, the researcher grouped the sentences with common codes together under their themes. The various thematic categories were then tabulated for presentation in the study. The procedure adopted for the content analysis was targeted at achieving semantic validity (Krippendorf, 2004) to provide useful explanation on the findings in the quantitative study. Below are the results from the analysis.

Participants’ Involvement in Religious Activities

Table 8 below shows the analysis of participants’ responses to questions about their involvement in religious activities. In all three themes emerged from the content analyses on the responses of the participants regarding their involvement in religious activities. These are casual church attendance, active church attendance, and leadership role. Evidence to these themes is provided in the table with the direct quotes of the participants. From the table, as many as 4 participants were actively attending church, 3 were occupying leadership positions in church, and only 1 was attending church on a weekly basis (normal church attendance).
Table 8: Participants’ Involvement in Religious Activities

Question 1: Please tell me about your religious affiliation and activities.

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal church attendance</td>
<td>P4: I go to church on Sundays only.</td>
</tr>
<tr>
<td>Active church attendance</td>
<td>P1: I belong to the women’s fellowship and attend meetings on Thursday evenings and church on Sundays.</td>
</tr>
<tr>
<td></td>
<td>P3: I go to church on Sundays and choir practice on Saturdays.</td>
</tr>
<tr>
<td></td>
<td>P5: Women’s fellowship, choir, and church on Sundays</td>
</tr>
<tr>
<td></td>
<td>P8: I attend men’s fellowship and church on Sundays.</td>
</tr>
<tr>
<td>Leadership</td>
<td>P2: I am the leader of the prayer group and so I am in church about 6 days in a week praying for the entire church.</td>
</tr>
<tr>
<td></td>
<td>P6: Catechists meetings on Tuesdays, men’s fellowship on Wednesdays, and church on Sundays.</td>
</tr>
<tr>
<td></td>
<td>P7: I am in church every day. I am a pastor.</td>
</tr>
</tbody>
</table>

The Influence of Religious Activities on Coping Mechanisms and Quality of Life

In addition, the researcher inquired about how participants’ involvement in religious activities influences their coping mechanisms and quality of life. The analyses of the participants’ responses are provided in table 9 below. In all, there were five emerging themes on coping and quality of life. These are prayer, strength and healing from the word of God, adjustment, protection and security, and healthy practices. Evidence to these themes is provided from the direct quotes of the participants. Prayer appears dominant among all the themes. Generally, participants’ engagement in religious rituals and activities provided them with sense of security and solace. Religiosity therefore appears an effective means through which the participants coped with their disease.
### Table 9: The Influence of Religious Activities on Coping Mechanisms and Quality of Life

**Question 2:** Please tell me about the psychological factors. Is life worth living with diabetes? What relationship do you have with your caregiver and healthcare givers?

<table>
<thead>
<tr>
<th>Type of Coping</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prayer</td>
<td>P1: Praying makes me feel secured. I know I am protected by God and that is why I want to be in church all the time.</td>
</tr>
<tr>
<td></td>
<td>P7: From the hospital, I want to go to church to pray over my medicines. Human beings can make mistakes but God does not.</td>
</tr>
<tr>
<td></td>
<td>P8: God is the ultimate. The word of God says we should pray without ceasing so I will be in church and engage in church activities for my sins to be forgiven and then receive my healing as well.</td>
</tr>
<tr>
<td>Strength &amp; Healing from the Word of God</td>
<td>P2: The more I engage in religious activities, the more religious I become. It is the word of God that strengthens me. I am a diabetic and I know healing comes from God so I have to be close to Him so that He can bless me.</td>
</tr>
<tr>
<td></td>
<td>P6: The word of God that I hear every day makes me strong. I am encouraged by it and I know my sickness will be cured by Him. So I will always be with Him.</td>
</tr>
<tr>
<td></td>
<td>P8: God is the ultimate. The word of God says we should pray without ceasing so I will be in church and engage in church activities for my sins to be forgiven and then receive my healing as well.</td>
</tr>
<tr>
<td>Coping</td>
<td>P3: When I go to church and engage in religious activities, I do not worry about anything not even my condition.</td>
</tr>
<tr>
<td>Protection and sense of Security</td>
<td>P4: Being in church all the time makes me feel very close to God and no one can attack me if I am free from evil.</td>
</tr>
<tr>
<td></td>
<td>P5: Being in church especially in the evenings does not make me join friends to drink, smoke, and attend to other social gatherings, which may not be good for my health. God is my protector so I love to be in His presence.</td>
</tr>
<tr>
<td>Healthy practices</td>
<td>P5: Being in church especially in the evenings does not make me join friends to drink, smoke, and attend to other social gatherings, which may not be good for my health. God is my protector so I love to be in His presence.</td>
</tr>
</tbody>
</table>
Challenges/ Stressors associated with Diabetes

Participants were interrogated on the psychological factors, life stressors and anxiety that they experienced as a result of their condition. Common themes that emerged from their responses have been presented in table 10 below. The themes are social support, poor marital satisfaction, hopelessness and despair, and financial difficulties coupled with the lack of social support. Evidence to these themes is provided in the direct quotes of the participants. The lack of marital satisfaction was primarily due to the loss of manhood and disunity among the family. ‘Loss of manhood’ in this context means the patient is unable to have sexual intercourse with the wife. The consequence of this was the rejection by the wife. The availability of social support was instrumental for most patients in dealing with the disease. Social support primarily came from church members and family members.

Table 10: Challenges/ Stressors associated with Diabetes

<table>
<thead>
<tr>
<th>Life Challenges</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor marital satisfaction</td>
<td>P1: Diabetes has destroyed my marriage because I have lost my manhood. My relationship with my family is bad because the children are scattered and my wife has left me. It is the relationship I have with my church members and friends that has sustained me.</td>
</tr>
<tr>
<td>Social support</td>
<td>P2: Diabetes is a family disease, my mother has it and my family is very much aware of it. So they support me even when I feel bad they tell me to relax since it will not kill me. I therefore do not have any worries. Mine is to take my medication, diet, and exercise. The rest is in the hands of God. I am satisfied with the care.</td>
</tr>
<tr>
<td></td>
<td>P3: Diabetes has become part of my life. My family members are aware and I get the necessary support from them. I work hard to be able to buy my medication and eat well. The health care givers are good just that when they talk about the complications I get scared and anxious. Life is still worth living.</td>
</tr>
</tbody>
</table>
P4: Living with diabetes is not easy. It can be depressing when you consider the life style changes alone and the fact that it is chronic and your life is based on it. My only consideration is that my family, my children and grandchildren give me the joy I need to live. My wife is good and she takes good care of me.

P7: My relationship with my family members is good but not all the time. They think I am worrying them so much with my condition especially when I want to keep to my meal times so that I can take my medication with my food. They are, however, supportive and encourage me that I will be fine. My stress is with my work place especially when my boss is demanding too much from me. My finance is not bad, I buy my medicine first and food and then I leave the rest with God. I sometimes feel scared about my condition but I do not feel like ending my life because of diabetes. The healthcare givers in Korle-Bu are nice but the worrying part is that I at times spend almost the whole day there and it is very bad.

Hopelessness and despair

P5: I do not think so. It is not worth living, what is the point in living when I cannot function like a man. Sometimes, I feel like ending it all. I have lost my manhood, what next? Blindness, amputation, or what? But thanks be to God. My family and my church are always there for me.

Financial difficulties and lack of social support

P6: I cannot work as hard as I used to. My finances are bad and I spend a lot on medication. My diet is not the way I want it to be. Some members of my family look down on me and it makes me feel bad because am the only diabetic amongst them. Sometimes, I feel so bad that I want to end it all. After all, the complications are enough to kill me. My healthcare givers are wonderful, they give me hope. When I see diabetics who are old and healthy in the hospital, I know there is hope.

P8: The only problem with me now is that I am not working now. My finances are not the best and I spend the little I get on medication and my diet although I am not able to follow my diet consistently. I do not get enough support and encouragement I would like to get from my family and close relations and this at times makes me sad. But my healthcare givers give me the necessary support and encouragement that I need and always give me hope.
Life Satisfaction of Type-2 Diabetic Patients

Table 11 below shows the expression of the participants’ life satisfaction. The emerging themes from the analyses are acceptance of condition, unhappiness, satisfaction, divine intervention, and pain. Evidence to these themes has been provided in the direct quote of the participants. Generally, most patients attributed their life satisfaction to divine providence. Patients’ hope and trust in God sustained them. However, unhappiness occurred when patients felt rejected by the family. Even under such instance, their trust in God sustained them.

Table 11: Life Satisfaction

Question 4: Please tell me about how satisfied or happy you are about your life in general.

<table>
<thead>
<tr>
<th>Life Satisfaction</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance</td>
<td>P1: My life is generally not bad. I feel I have to adjust to a new way of life to be alive. I know I have to be dependent on medication for the rest of my life so I have accepted it happily.</td>
</tr>
<tr>
<td></td>
<td>P2: I am not happy with my, my family members have all deserted me but I know God will take care of me.</td>
</tr>
<tr>
<td>Unhappiness</td>
<td>P3: My life is generally good, health wise I am ok and I take my medicine and diet so it is not bad. I have heard a lot about diabetes and I know I can live long if I take care of myself. So I am happy it is better than other sickness.</td>
</tr>
<tr>
<td></td>
<td>P5: My life is not bad, God is in control. I am strong, I work hard to buy my medicines and more, so I am good.</td>
</tr>
<tr>
<td></td>
<td>P6: My life is good, with my medicine good diet and my family support I am happy.</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>P4: My life is in the hands of God. That is all I can say so I am satisfied.</td>
</tr>
<tr>
<td></td>
<td>P8: It is God who gives life and I am alive and so I am happy.</td>
</tr>
<tr>
<td>Divine Intervention</td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>P7: I feel the sickness has made me a little weak but I am ok.</td>
</tr>
</tbody>
</table>
Participants’ General Comments on Diabetes and Quality of Life

Finally, the researcher invited the general comments of the participants on diabetes and their quality of life. Table 12 shows the general comments of the participants. Analyses on their comments revealed four main themes. These were the need for family support and care, adherence to medication, proper diet and good lifestyle, divine intervention, hope and self-care. Evidence to these themes is provided in the direct quotes of the participants. Participants’ comments portrayed the painful and stressful nature of the disease, and the crucial role of God’s intervention, healthy lifestyle, and social support.

Table 12: Participants’ General Comments on Diabetes and Quality of Life

<table>
<thead>
<tr>
<th>Type of Comments</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family support and self-care</td>
<td>P1: With diabetes, I have been told that it is a chronic disease. My general comment is that, if the family supports you well and you take good care of yourself then you are ok.</td>
</tr>
<tr>
<td></td>
<td>P2: I know that diabetes is a chronic disease and when you get the necessary support from your family members and also go according to the instructions given you, you will be fine.</td>
</tr>
<tr>
<td>Medication, Good diet, and lifestyle</td>
<td>P3: Diabetes is a chronic disease and I also know that it can only be managed with medication, good diet and lifestyle changes.</td>
</tr>
<tr>
<td></td>
<td>P4: I know that if you take very good care of yourself, especially, with your diet, medication, and the way you live your life, you need not worry about the diabetic condition.</td>
</tr>
<tr>
<td></td>
<td>P5: Diabetes as far as I know cannot be cured and one gets it when he or she does not live his or her life well and also if it is in one’s family. But I also know that, one can be put on medication and told what to do in other that he or she can live long.</td>
</tr>
<tr>
<td></td>
<td>P8: I have been living with diabetes for the 10 years; I am still fine so medication, diet, and a happy life makes me feel good. It drains me financially but it is all good.</td>
</tr>
<tr>
<td>Divine Intervention</td>
<td>P6: Diabetes is a deadly disease. It affects all parts of your body. It is God who can help you.</td>
</tr>
<tr>
<td>Hope and Self-care</td>
<td>P7: This condition is better than cancer and HIV so I think I can live well if I take good care of myself.</td>
</tr>
</tbody>
</table>
CHAPTER FIVE

GENERAL DISCUSSION

According to de-Graft Aikins et al. (2012), the prevalence of major chronic non-communicable diseases and their risk factors has increased over time and contributes significantly to the Ghana's disease burden. They constitute both a public health and a developmental issue that should be of urgent concern not only for the Ministry of Health, but also for the Government of Ghana. The catastrophic costs of care usually drive patients with chronic diseases deeper into poverty. According to de-Graft Aikins et al. (2012), new directions in research, practice and policy are urgently needed. They should be supported by active partnerships between researchers, policymakers, industry, patient groups, civil society, government and development partners. This implies that there is the need to have alternative means of helping patients with chronic diseases like diabetes to effectively cope with their condition. It is in this line that the present study was conducted to assess how religious coping and other psychosocial factors can be useful for patients with type-2 diabetes to effectively cope with their condition.

It is established in the literature that Type-2 diabetic patients are predisposed to different forms of life stressors. Their stressful life events negatively reduce their quality of life (Spinhoven, Elzinga, Hovens, Roelofs, van Oppen & Zitman, 2011). Psychosocial resources are however deemed critical to healthy lifestyle for people who are undergoing acute form of stress such as living with chronic disease. It is based these indications in the literature that the present study was undertaken. The general aim of the study was assess the quality of life of Type-2 diabetic patients and evaluate how certain psychosocial factors affect the quality of life of the patients. Based on this aim, the researcher identified and examined the relationship between religious coping, psychosocial factors and quality of life among individuals living with Type-2 diabetes.
Findings emerging from the study are discussed in this chapter. The chapter highlights the theoretical and practical implications of the findings. The limitation of the study are also brought to the fore. In addition, the researcher offers both theoretical and practical recommendations to improve research and clinical practice. Finally, the researcher draws conclusion based on the evidence obtained in this study.

The aim of the present study was to examine the relationship between religious coping, psychosocial factors and quality of life among individuals living with Type-2 diabetes. In line with this aim, the researcher designed two studies. Study I provided quantitative data to test six research hypotheses that were formulated based on the specific objectives of the study. The results from study II provide explanations to the findings obtained from the quantitative data in study I. Six main findings were obtained from study I. First, it was observed that type-2 diabetic patients experienced poorer quality of life than the healthy control group. Secondly, it was observed that religious coping significantly improved the quality of life of type-2 diabetic patients. Further, social support had a significant positive impact on quality of life of type-2 diabetic patients. In addition, support from family significantly contributed more to quality of life than support from significant other. However, support from friends was not a significant predictor of quality of life among type-2 diabetic patients. Stress negatively predicted quality of life but depression and anxiety were not significant predictors of quality of life among type-2 diabetic patients. Finally, it was observed that self-care activities significantly improved the quality of life of type-2 diabetic patients. These findings are summarized in the model below.
Observed Conceptual Model

Figure 2: A Conceptual Model on Religiosity and Psychosocial Factors as predictors of quality of life of type-2 diabetic patients

The model depicts the observed relationships between psychosocial factors and quality of life of type-2 diabetic patients. Religious coping, social support from family and significant others, stress, and patients’ self-care activities were the psychosocial factors that significantly predict the quality of life of type-2 diabetic patients.
The Impact of Type-2 Diabetes on the Quality of Life of Patients

The first objective of the researcher was to assess the impact of type-2 diabetes on the quality of life of patients. In line with this objective, the researcher conjectured in the first hypothesis that “Type-2 diabetic patients will experience poorer quality of life than a healthy control group.” The healthy control group was matched with the type-2 diabetic patients with respect to age, socio-economic status and educational background. A comparative analysis on quality of life was conducted between these two groups and the statistical outcome revealed a significant negative impact of type-2 diabetes and quality of life. It was observed that type-2 diabetic patients had poorer quality of life than the healthy control group. This finding implies that type-2 diabetes reduces the quality of life of patients.

Indeed, findings from the focused group discussion (study II) confirm that patients with type-2 diabetes face a number of life stressors and have poor quality of life. Participants reported poor marital satisfaction, hopelessness and despair, and financial difficulties. Other participants expressed unhappiness and pain in life. They claimed their life was only by divine providence.

According to Joensen, Almdal, and Willaing (2013), the negative impact of diabetes on patients’ quality of life is due to the stressful nature of the disease. According to WHO (2006), diabetes is a chronic condition characterized by high blood sugar/glucose levels often leading to eye and nervous problems. In people with diabetes, glucose levels build up in the blood and urine, causing excessive urination, thirst, hunger, and problems with fat and protein metabolism. Since these health problems are not encountered by the healthy control, it is valid to observe better quality of life among the healthy control group, compared to type-2 diabetic patients.
Religious Coping and Quality of Life of Type-2 Diabetic Patients

Recently, the field of psychology has begun to display a growing interest in religious coping methods and their implications for health and well-being. Empirical studies have yielded an interesting picture of the relationship between religious coping and physical and mental health. It is based on this motivation that the second research objective examined the influence of religious coping on the quality of life of Type-2 diabetic patients. Based on this objective, the researcher predicted in the second hypothesis that “Religious coping will significantly improve the quality of life of type 2 diabetic patients.” The data confirmed this hypothesis and the finding showed that religious coping significantly improves the quality of life of type 2 diabetic patients.

The result from the study II reveal the extent to which the participants were religious. Most of the participants attend church on regular basis. They held various leadership positions and engaged in various forms of church activities. It is therefore unsurprising that many used religious rituals and practices to cope with the stressful nature of their disease. Many used prayers and trusted in the healing power of the word of God. To these, going to church, listening to the word of God and praying gave them the strength to live. Many of them felt protected and secured whenever they worshipped. Some even believed that being in Church guarded them from bad life practices such as drinking and smoking. Thus, these results show that religion is effective in serving as a coping instrument for people with Type II diabetes.

The above expressions of the participants confirmed the African Self-Consciousness theory (Kambon, 1992, 2003, 2006) that religion and spirituality are integral component of the African personality. Kambon’s model spells out the relevance of religion and spirituality in the life of African. It portrays spirituality as an integral dimension of the African personality and a useful component of the African existence. The spiritual dimension of the African personality allows the
African to develop greater understanding of his environment and experiences. The expressions of the participants in the present study demonstrate that religion constitutes a significant portion of their ideological orientation. It helps to shape their personality and allows them to effectively cope with all forms of stresses including illness.

The second finding indeed establishes the relevance of religion in coping with stressful life diseases such as type-2 diabetes. It confirms the general view that religion is an integral component of life for individuals confronted with illness, disability, and death (Acklin et al., 1983; Ferraro & Kelley-Moore, 2000; Harrison et al., 2001; Laubmeier et al., 2004; Stroebe, 2004). As suggested by the Religious Coping theory, many individuals will rely on their religious beliefs and practices to provide meaning to the disease experience and obtain comfort, hope, and social support (Pargament, 1997; Pargament & Raiya, 2007). Zaldívar and Smolowitz (1994) found that among non-Mexican American Hispanic diabetic patients, belief in God and an individual’s perception of God’s role in diabetes influenced his or her perception of diabetes and treatment choices. These pieces of evidence suggest that the role of religion in dealing with various stressors including chronic illnesses cannot be overemphasized.

The second finding also provides evidence in support of the Afrocentric framework of stress and coping which emphasizes collective and communal orientation in coping among Africans and African Americans. Indeed, collective religious beliefs and collective practices can impact the coping process (Utsey et al., 2000, 2004). Communally and spiritually based coping are particularly useful among individuals of African descent, reflecting an Afrocentric worldview. These observations have found support in a recent coping study of Black Canadians (Constantine et al., 2005; Joseph & Kuo, 2009). Joseph and Kuo (2009) for instance reported that spiritual- and ritual-centered coping constituted the most crucial coping strategies adopted by Black Canadians.
in dealing with interpersonal discrimination (e.g., being looked down on as unintelligent by others). Constantine et al. (2005) also found that both acquiring from and giving support to in-group members and religious coping were an integral part of coping among African Americans.

The study has also confirmed that Ghanaians on the African continent use religion as an effective coping tool in dealing with stresses associated with chronic illnesses like diabetes. Religion permeates the stress process by influencing the cognitive and behavioral responses for interpreting and handling negative life events. Religion appears to influence the interpretation, appraisal, and attribution of chronic illness (Gordon et al., 2002; Siegel et al., 2001). Religion may also contribute to the coping process by providing coping options through the social, interpersonal, cognitive, spiritual, and behavioral aspects of religious faith (Hathaway & Pargament, 1991; Pargament & Raiya, 2007).

Social Support and the Quality of Life of Type-2 Diabetic Patients

Thirdly, it was the researcher’s objective to examine the influence of social support on the quality of life of type-2 diabetic patients. Social support in this context was defined as the support offered by family, friends, and significant others. The researcher assessed the main impact of social support on quality of life of the patients. This was done in the third hypothesis that predicted “Social support will have a significant positive impact on quality of life of type 2 diabetic patients.” In addition, the researcher evaluated the relative impact of social support from friends, family, and significant other. This was also done in the fourth research hypothesis that predicted that “Social support from family will significantly contribute more to quality of life than social support from friends and significant other.”
The third hypothesis was confirmed indicating that social support has a significant positive impact on quality of life of type 2 diabetic patients. By the very nature of their conditions, type-2 diabetic patients are predisposed to different forms of life stressors. Their stressful life events reduces their quality of life (Spinhoven et al., 2011). Psychosocial resources such as social support therefore become very critical to healthy lifestyle among every individual. However, they are exceptionally relevant to people who are already undergoing acute form of stress such as living with chronic disease. The benefits of social support to type-2 diabetic patients was established in the focus group discussion where most of the participants admitted that they had a strong social support that help them to cope with their condition. In terms of life satisfaction, these participants expressed acceptance of their conditions. They felt satisfied with life. They had adjusted to their conditions. Thus, differences in how type-2 diabetic patients respond and adapt to stressful life events can be accounted for by social support.

As pointed out, social support was defined in three aspects: family, friends and significant others. The fourth hypothesis compared these three dimensions of social support. Among these three dimensions, only social support from friends failed to predict quality of life. Social support from family and significant others significantly and positively predicted quality of life. Significant others referred to ‘special’ people in the patient’s life such as church members, pastors and caregivers. Earlier evidence in the literature indicates that church members and pastors provide instrumental and emotional support (Adams, 2003; Cagle et al., 2002; de Vera, 2003; Dietrich 1996; Hornsten et al., 2004; Popoola, 2005; Samuel-Hodge et al., 2000; Young, 1993), and reading the bible and praying reduced daily hassles and stresses (Samuel-Hodge et al., 2000). This was also evident in the qualitative data when most participants expressed that they felt better in the company of church members.
The above finding on the significant role of social support is consistent with the literature. In a review of empirical literature of studies which examined the relationship between social support and self-management in chronic illnesses, Gallant (2003) found that the majority of the studies involved diabetic patients and most of the quantitative studies reported a positive relationship between social support and self-management. That is, the more support patients get, the better they are able to manage their illness. Only one study found no relationship between social support and self-management. However, few methodological concerns were found which needed to be addressed.

Social support has been found to predict a higher quality of life among diabetic patients (Lager, 2006). The reason is that social support influences diabetic patients’ ability to manage their disease (Gleeson-Krieg, Bernal, & Woolley, 2002; Trief et al., 1998). Perceived social support is associated with the use of problem-focused coping and disease management resulting in successful adaptation to diabetes and the treatment regimen. This leads to greater disease acceptance as well as an improved quality of life (Karlsen et al., 2004; McCracken, 2005). Thus, when diabetic patients experience and have a good social support network, their functioning in the face of challenges posed by their illness is well managed.

The above assertion is corroborated by Tang et al.’s (2008) study in which they examined social support and its influence on diabetes-specific quality of life and self-care behaviors among African-American type-2 diabetic patients. They observed that satisfaction with support was predictive of improved diabetes-specific quality of life and blood glucose monitoring. Positive support behavior was also predictive of whether a person would follow a healthy eating plan or not, spacing out carbohydrates evenly throughout the day and physical activity at least 30 minutes per day. Negative support behavior on the other hand was predictive of non-compliance with
recommended medication. This suggests that the type of social support provided to patients is very crucial for their quality of life and the overall management of their illness.

Additionally, the current study provides empirical evidence in support of the Buffer Theory of Social Support (Alloway & Bebbington, 1987; Cohen and Wills, 1985; Dean and Lin, 1977; Lin, Woefel & Light 2005) which proposed that social support acts as a buffer and helps to decrease the appraisal of stressful events so that they are perceived as less threatening. In addition, social support may decrease the number of immune system and behavioral changes that result from stress, thus helping to prevent illness or reducing the negative impact of illness (Cohen and Wills, 1985; Dean and Lin, 1977). The evidence from the current study has shown that type-2 diabetic patients with stronger social support enjoy better quality of life. This confirms and strengthens the theoretical assumption that the presence of social relations or support networks moderates effect of adverse environmental stressors that precipitate illness and disease. In this sense, social support acts as a ‘buffer’ to protect the individual from the negative consequences of type-2 diabetes.

**Psychological health and Quality of Life of Type-2 Diabetic Patients**

Moreover, it was the researcher’s objective to determine the relationship between psychological health and quality of life of type-2 diabetic patients. This objective led to the formulation of the fifth research hypothesis that predicted that “Psychological health will be a significant predictor of quality of life of type 2 diabetic patients.” The data from the study partially confirmed this prediction. It was found that that stress negatively predicts quality of life but depression and anxiety are not significant predictors of quality of life among type 2 diabetic patients.
Unarguably, chronic illness is a significant source of stress. Stress has been associated with many diseases such as diabetes, cancer, cardiovascular disease, and substance abuse (Lazarus & Folkman, 1984). While stress has been defined in many ways, all of the definitions involve an environmental demand to which the person must react and where stress is perceived as at least potentially exceeding the person’s ability or resources to meet the challenges (Belgrave & Allison, 2010). It is in this sense that stress emerges as a significant predictor of quality of life. Type-2 diabetic patients with high stress experience poorer quality of life compared to type-2 diabetic patients with low stress. This implies that factors that determine quality of life among type-2 diabetic patients are external to the person. If stressors of life are reduced and social support is increased for patients with type-2 diabetes they are likely to feel better and experience higher quality of life.

Apart from diabetes-related stress, other life stressors can affect the quality of life and the overall management of diabetes among patients. Walders-Abramson et al. (2014) revealed that major stressors were predictive of medication non-adherence, elevated depressive symptoms and impaired quality of life. However, the present observation is not consistent with earlier findings that suggest that depression and anxiety negatively predict poorer quality of life of type-2 diabetic patients (Paschalides et al., 2004). Indeed, anxiety and depression are some of psychological measures reported to impact on the quality of life of diabetic patients in the literature. For example, Hall, Rodin, Vallis and Perkins (2009) discovered that anxious temperament (anxiety) was negatively correlated with glycaemic control at baseline and a 6-month follow-up period. Increased level of anxiety also predicted the likelihood of being diagnosed with a pre-diabetes condition and also associated with impaired quality of life. Perhaps the discrepancy in findings may be as a result of the fact that Hall et al. (2009) used a people who were newly diagnosed with type 2 diabetes.
Among such newly diagnosed patients, it is obvious that anxious temperament (anxiety) will become a dominant clinical symptom. However, in the present study, the participants are people who have endured the disease for some years and may have learned to adjust to it.

**Self-care and Quality of Life of Type-2 Diabetic Patients**

The final objective of the researcher was to assess the impact of patients’ self-care activities on their quality of life. Self-care activities were assessed in terms of dietary control of type-2 diabetic patients. In line with the last objective, the researcher predicted that “Self-care activities will have a positive significant impact on the quality of life of type-2 diabetic patients.” This prediction was confirmed by the research data. It was observed that patients’ own self-care activities in terms of good dietary practices significantly improve their quality of life. This finding highlights the need for patients to adhere to dietary restrictions recommended by health care professionals.

The type-2 diabetic patients who partook in the study had been advised by their health care givers to follow a healthful diet. The results from the focus group discussion showed that most of the patients were mindful of the need for dietary control and its benefit on their quality of life. These results agree with the International Diabetes Federation (2005) recommendations concerning food planning as it can help the patient to get a well-balanced diet, stable the glucose level and reduce the cardiovascular risk factors. The International Diabetes Federation (2005) also recommended reduced intake of sugar. Parker, Noakes, Luscombe & Clifton (2002) showed that different diets can help to decrease fasting blood glucose and insulin concentrations which also could be an explanation why the participants who adhered to dietary control plan experienced better quality of life.
5.2. Limitations of the Study

The definition of self-care was too restrictive and limited to only dietary control. However, it must be noted that self-care practices among diabetic patients go beyond dietary control to include many other practices. Ramasamy, Shrivastava, and Shrivastava (2013) identified seven essential self-care behaviours in people with diabetes which predict good outcomes namely healthy eating, being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviours. This integrated approach is what is required for promoting self-care practices among diabetic patients to avert any long-term complications. This is therefore brought to the notice of future researchers for critical consideration.

Moreover, the lack of inclusion of cultural orientation in measurement decision limits the conclusion of the current study regarding the nature of coping among the type-2 diabetic patients in the Ghanaian context. It is evident that culture influences coping variables (Belgrave, 1994; Jarama et al. 1996; Jarama et al., 1998; Zea et al., 1996). Whilst the Ghanaian society might be conceived as collectivistic in character, globalization is continuously influencing and changing certain attitudes, believes, and behaviors. This, in itself, implies that a significant number of Ghanaians living in the cities will experience significant changes in their cultural orientation. Therefore, any gross generalization without support from critical data that Ghanaians are collectivistic in orientation will be unwarranted. It is in this light that measurement of cultural orientation of participants becomes necessary.
5.3. Recommendations for Future Research

Based on the limitations of the existing literature and critical observations made in this study, three recommendations are submitted with intention to strengthen future cultural and cross-cultural coping research, and also to expand the scope of research.

First of all, at the conceptual level, there is the need for future researchers to pay greater attention to collective and communal dimension of coping such as family support and religious groups. This is necessary because the increasing evidence of the collective and communal dimension of coping challenges the dominant intrapersonal and individualistic perspective on stress and coping in the extant literature (Dunahoo et al., 1998; Folkman & Moskowitz, 2004), particularly when engaging in coping research with culturally diverse populations. As revealed in this study, even among the prevailing cultural coping studies, few had adopted culturally derived conceptual frameworks or culturally based coping measures. The majority of cultural coping studies remain unchallenged as many continue to operate exclusively under what Utsey et al. (2000) called the “Eurocentric” assumptions on coping, namely the problem- and emotion-focused coping paradigm. Conceptually, it is imperative for the field of stress and coping research to expand its current stress-coping theories and frameworks by accommodating new and more culturally and contextually informed perspectives (Moos, 2002; Wong & Wong, 2006).

Secondly, the current corpus of cultural coping research is heavily represented by studies of African Americans. There is limited research on coping among Africans on the African continent (Haley et al., 1996; Utsey et al., 2000, 2004). Therefore, there is the need to encourage emerging studies on Africultural coping to shift focus to Africans on the African continent. In this way, holistic evidence will be gathered to strengthen the generalization power of the existing Afrocentric coping theories.
Finally, there is the need to expand the scope of this research to other forms of chronic diseases such as cancer, stroke, asthma, and heart attacks. Research is required on broader range of patients with varied kinds of chronic diseases in order to develop a better understanding on how religious coping and psychosocial factors influence the quality of life of such patients. There is the need for future researchers to also focus on the self-care activities of patients and their help-seeking behaviour across medical systems. Impact studies on the psychosocial benefit of patient support groups are required (Read & Doku, 2012). In this way, the scope of research on chronic diseases will become all-encompassing and will serve a useful purpose for practice.

5.4. Implications for Clinical Practice

The following are practical recommendations aimed at improving the quality of life of patients with type-2 diabetes.

Given that self-care activities lead to better quality of life, it is recommended that type-2 diabetic patients adhere to self-care activities. There is the need for strict adherence to dietary control plan in order for type-2 diabetic patients to maximize their quality of life. Eating a lot of fruits and vegetables, avoiding a high fat diet, and drinking a lot of water are among the recommended healthful dietary practices. Other essential self-care behaviours which are known to predict good outcomes are being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviours (Ramasamy, Shrivastava, & Shrivastava, 2013). These self-care activities are worthy to practice.

Secondly, the researcher recommends culture-based treatment as an alternative to the Western approach to chronic disease management. This form of culture-based treatment should have
religion and spirituality as its dominant character and must be complemented with strong social ties and support. There is the need to promote greater knowledge among clinicians and health care providers on the relevance of religion and spirituality as well as social support in the treatment and management of chronic diseases. Poor knowledge and attitudes of health practitioners on chronic diseases undermine quality of care. It is important to include chronic disease management in the continuous professional development activities of health workers and to develop guidelines valid for local use.

Finally, the researcher recommends that type-2 diabetic patients should be encouraged to establish greater and stronger ties with family and significant others based on the evidence that social support from family and significant others are significant predictors of quality of life. Type-2 diabetic patients should make efforts to establish more social relationships that would help broaden their support base. Particularly, type-2 diabetic patients should get involved in Church activities, be part of social groups and organizations within the churches such as women and men fellowships, and should develop greater ties with their religious leaders. Such interactions will pave way for type-2 diabetic patients to receive social support from significant others. This is crucial because social support from significant others had a positive outcome on quality of life.
5.5. Conclusion

The whole study was effective, simple and carried out under acceptable and ethical conditions. The outlined objectives for the study were successfully achieved. First, the researcher observed that type-2 diabetic patients experienced poorer quality of life than the healthy control group. Secondly, religious coping was found to significantly improve the quality of life of type 2 diabetic patients. Moreover, social support had a significant positive impact on quality of life of type 2 diabetic patients. Support from family significantly contributed more to quality of life than support from significant other. However, support from friends was not a significant predictor of quality of life among type-2 diabetic patients. In addition, stress negatively predicted quality of life but depression and anxiety were not significant predictors of quality of life among type 2 diabetic patients. Dietary control significantly improved patients’ quality of life.

Confirmatory evidence were obtained for these findings in focused group discussion that followed the quantitative study. Indeed, participants’ general comments in the focused group discussion confirmed the benefits of religious coping and social support in the management of type-2 diabetes. They indicated that that prayers and religious worship, family support and self-care are necessary to ensure that one continuously enjoy a stable condition. Most of them expressed that medication, good diet, and positive lifestyle are important to manage the disease. Based on these findings, there is the need to consider culture-based treatment strategies for the management of diabetes in Ghana. These treatment strategies should be engrained in the collectivistic cultural orientation of Ghanaians, focusing more on social support and religiosity/ spirituality.
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Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients


101
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients


Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients


Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

Viji P. T, & Singh, M. (2014). A Study to Assess the Practice of Diabetic Patient towards Self Care Activities for Longevity of Life. Scholars Journal of Applied Medical Sciences, 2(1A), 57-60


APPENDICES

APPENDIX I: QUESTIONNAIRE

Section A: Demographic Data

1. How old are you? ______________

2. What is your gender? (a) Female (b) Male

3. What is the highest educational level you achieved?
   (a) Primary School (b) Junior High
   (c) Senior High School (d) Tertiary
   (e) Other (please specify) ______________

4. What is your marital status?
   (a) Single (b) Married
   (c) Separated (d) Tertiary
   (e) Widowed

5. What is your religious affiliation?
   (a) Christianity (b) Islam
   (c) Tradition (d) Other (please specify) ______________

6. What is your employment status?
   (a) Employed Full-Time (b) Employed Part-Time (c) Retired
   (d) Retired due to disability (c) Unemployed

7. When were you diagnosed as an individual with diabetes type-2? ______________

8. On the average, how much do you earn a month? ______________
### Section B

This section measures religious coping with major life stressors. The first seven (7) items measure positive religious coping while the last seven (7) items measure negative religious coping (that is religious/spiritual struggle). The scale selected items that represent how you employ religious coping methods cognitively through thoughts and attitudes.

**How much do you use the following activities in coping?**

<table>
<thead>
<tr>
<th>Not at all = 0</th>
<th>Somewhat = 1</th>
<th>Quite a bit = 2</th>
<th>A great deal = 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I looked for a stronger connection with God.</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
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<tr>
<td>2. I sought God’s love and care.</td>
<td>0 1 2 3</td>
<td></td>
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<tr>
<td>3. I sought help from God in letting go of my anger.</td>
<td>0 1 2 3</td>
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<tr>
<td>4. I tried to put my plans into action together with God.</td>
<td>0 1 2 3</td>
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<tr>
<td>5. I tried to see how God might be trying to strengthen me in this situation.</td>
<td>0 1 2 3</td>
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<tr>
<td>6. I asked forgiveness for my sins.</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
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<tr>
<td>7. I focused on my religion to stop worrying about my problems.</td>
<td>0 1 2 3</td>
<td></td>
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<td>8. I wondered whether God had abandoned me.</td>
<td>0 1 2 3</td>
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<tr>
<td>9. I felt punished by God for my lack of devotion.</td>
<td>0 1 2 3</td>
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<tr>
<td>10. I wondered what I did for God to punish me.</td>
<td>0 1 2 3</td>
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<tr>
<td>11. I questioned God’s love for me.</td>
<td>0 1 2 3</td>
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<tr>
<td>12. I wondered whether my church had abandoned me.</td>
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</tr>
<tr>
<td>13. I decided the devil made this happen.</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. I questioned the power of God.</td>
<td>0 1 2 3</td>
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</table>
Section C

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1. I found it hard to wind down 0 1 2 3
2. I was aware of dryness of my mouth 0 1 2 3
3. I couldn’t seem to experience any positive feeling at all 0 1 2 3
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion) 0 1 2 3
5. I found it difficult to work up the initiative to do things 0 1 2 3
6. I tended to over-react to situations 0 1 2 3
7. I experienced trembling (eg, in the hands) 0 1 2 3
8. I felt that I was using a lot of nervous energy 0 1 2 3
9. I was worried about situations in which I might panic and make a fool of myself 0 1 2 3
10. I felt that I had nothing to look forward to 0 1 2 3
11. I found myself getting agitated 0 1 2 3
12. I found it difficult to relax 0 1 2 3
13. I felt down-hearted and blue 0 1 2 3
14. I was intolerant of anything that kept me from getting on with  
what I was doing 0 1 2 3
15. I felt I was close to panic 0 1 2 3
16. I was unable to become enthusiastic about anything 0 1 2 3
17. I felt I wasn't worth much as a person 0 1 2 3
18. I felt that I was rather touchy 0 1 2 3
19. I was aware of the action of my heart in the absence of physical  
exertion (eg, sense of heart rate increase, heart missing a beat) 0 1 2 3
20. I felt scared without any good reason 0 1 2 3
21. I felt that life was meaningless 0 1 2 3

Section D

Instructions: The items are divided into factor groups relating to the source of the social  
support, namely family, friends or significant other. We are interested in how you feel about  
the following statements. Read each statement carefully. Indicate how you feel about each  
statement.

Circle the “1” if you Very Strongly Disagree
Circle the “2” if you strongly disagree
Circle the “3” if you mildly disagree
Circle the “4” if you are Neutral
Circle the “5” if you mildly agree
Circle the “6” if you strongly agree
Circle the “7” if you Very Strongly Agree

<table>
<thead>
<tr>
<th></th>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>There is a special person who is around when I am in need.</td>
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<tr>
<td>2.</td>
<td>There is a special person with whom I can share my joys and</td>
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<td></td>
<td>sorrow.</td>
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<td>3.</td>
<td>My family really tries to help me.</td>
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<td>4.</td>
<td>I get the emotional help and support I need from my family.</td>
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<td>5.</td>
<td>I have a special person who is a real source of</td>
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<td></td>
<td>comfort to me.</td>
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</tbody>
</table>
### Section E

The questions below ask about your diabetes self-care activities during the past seven days. If you were sick during the past seven days please think back to the last seven days when you were not sick.

#### Diet

<table>
<thead>
<tr>
<th>Question</th>
<th>Number of days</th>
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<tbody>
<tr>
<td>1. On average, over the past month, how many days per week have you followed your eating plan?</td>
<td>0 1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>2. On how many of the last seven days did you eat five or more servings of fruits and vegetables?</td>
<td>0 1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>3. On how many of the last seven days did you eat high fat foods such as red meat or full-fat dairy products?</td>
<td>0 1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>4. On how many of the last seven days did you space carbohydrates evenly through the day?</td>
<td>0 1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>5. On how many of the last seven days have you followed a healthful eating plan?</td>
<td>0 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
Section F

The following questions ask how you feel about your quality of life, health, or other areas of your life. Please choose the answer that appears most appropriate. Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last four weeks.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Very poor</th>
<th>Poor</th>
<th>Neither good or poor</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>How would you rate your quality of life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neither satisfied or dissatisfied</th>
<th>Satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>How satisfied are you about your health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Not at all</th>
<th>A little amount</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>An extreme amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>To what extent do you feel that physical pain prevents you from doing what you need to do?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>How much do you need any medical treatment to function in your daily life?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>How much do you enjoy life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>To what extent do you feel your life to be meaningful?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>How well are you able to concentrate?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>How safe do you feel in your daily life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>How healthy is your physical environment?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Do you have enough energy for everyday life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Are you able to accept your bodily appearance?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Have you enough money to meet your needs?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>How available to you is the information that you need in your day-to-day life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>To what extent do you have the opportunity for leisure activities?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>How well are you able to get around?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>How satisfied are you with your sleep?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>How satisfied are you with your ability to perform your daily living activities?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>How satisfied are you with your capacity for work?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>How satisfied are you with yourself?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>How satisfied are you with your personal relationships?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>How satisfied are you with your sex life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>How satisfied are you with the support you get from your friends?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

113
### Religious Coping, Psychosocial Factors, and Quality of Life among Type-2 Diabetic Patients

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. How satisfied are you with the conditions of your living place?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. How satisfied are you with your access to health services?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. How satisfied are you with your transport?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Seldom</th>
<th>Quite often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. How often do you have negative feelings such as blue mood, despair, anxiety, depression?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
APPEXDIX II: QUESTIONS FOR FOCUS GROUP DISCUSSION (FGD)

Question 1: Please tell me about your religious affiliation and activities.

Question 2: Please tell me about the psychological factors. Is life worth living with diabetes? What relationship do you have with your caregiver and healthcare givers?

Question 3: Please tell me about some of your life stressors, anxiety and whether you feel sad about your condition; your finances and about your diet as well.

Question 4: Please tell me about how satisfied or happy you are about your life in general.

Question 5: General comments on diabetes and your quality of life.
APPENDIX III: CONSENT FORM

Title: “Religious Coping, Psychosocial Factors and Quality of Life among Type-2 Diabetic Patients in Ghana”

Principal Investigator: Vivien Opoku Acheampong

Principal Supervisor: Prof. S. C. C. Mate-Kole

Department of Psychology, University of Ghana, Legon

GENERAL INFORMATION ABOUT THE RESEARCH:

This research seeks to find out whether religious coping as well as other psychosocial factors (depression, anxiety, social support and dietary factors) have any significant influence on the quality of life of Type-2 diabetic patients. There is no hidden information pertaining to the conduct of this study. You are required to complete the questionnaires administered to you as truthfully as possible.

POSSIBLE RISKS AND DISCOMFORTS

There are no foreseeable risks and discomforts to you in taking part in this study except for the amount of time to complete the questionnaires.

POSSIBLE BENEFITS

Specifically, the study will highlight the role of religiosity/spirituality in influencing quality of life and how other psychosocial factors could be incorporated into the management plans of diabetic patients.

CONFIDENTIALITY

Absolute confidentiality is assured as the information you will provide will be used only for the purpose of research. You are not required to provide your name on any of the questionnaires. Analyzed questionnaires will be discarded appropriately.

COMPENSATION

No compensations are attached.

VOLUNTARY PARTICIPATION AND RIGHT TO LEAVE THE RESEARCH

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.
CONTACTS FOR ADDITIONAL INFORMATION

In case of any doubt or/and for additional information concerning the study you may contact the Principal Investigator; Vivien Opoku Acheampong, University of Ghana, Legon. Telephone: 0577049018/0208542442 or email address: vivienacheampong@gmail.com

YOUR RIGHTS AS A PARTICIPANT

This research has been reviewed and approved by the Institutional Review Board of Noguchi Memorial Institute for Medical Research (NMIMR-IRB). If you have any questions about your rights as a research participant you can contact the IRB Office between the hours of 8am-5pm through the landline 0302916438 or email addresses: nirb@noguchi.mimcom.org or HBaidoo@noguchi.mimcom.org.

VOLUNTEER AGREEMENT

The above document describing the benefits and procedures for the research “Religious Coping, Psychosocial Factors and Quality of Life among Type-2 Diabetic Patients in Ghana” has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

_______________________                    _________________________________
Date                                                            Name and signature or mark of volunteer

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.

_______________________                      __________________________________
Date                                                                 Name and signature of witness

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.

_______________________                    _________________________________
Date                                                            Name and signature of person who obtained consent