METHODOIST UNIVERSITY COLLEGE GHANA

FACULTY OF SOCIAL STUDIES

PSYCHOLOGICAL EXPERIENCE OF CLIENTS DIAGNOSED WITH GLAUCOMA IN SOME SELECTED CLINICS IN ACCRA

BY

VERONICA MAWULI ESHUN

105126613

A DISSERTATION SUBMITTED TO THE METHODIST UNIVERSITY COLLEGE GHANA IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF ARTS IN GUIDANCE AND COUNSELLING

NOVEMBER, 2015
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NOVEMBER, 2015
DECLARATION

STUDENT’S DECLARATION

I, Veronica Mawuli Eshun, declare that except for the references to other people’s work which have been cited, this work submitted as a research document is the result of my own efforts and has not been presented for any degree in any institution either in part or whole.

SIGNATURE: 

DATE: 

SUPERVISOR’S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised by me in accordance with the guidelines for the supervision of thesis laid down by the Methodist University College, Ghana.

NAME OF PRINCIPAL SUPERVISOR: Dr. Attindabilla

SIGNATURE:

DATE:

NAME OF SUPERVISOR:

SIGNATURE:

DATE:
DEDICATION

I dedicate this document first to the almighty God. Secondly to my husband and children for their support.
ABSTRACT

This study examined the prevalence of psychosocial problems among persons living with glaucoma and also examined whether their socio-demographic characteristics significantly affect their levels of psychosocial distress. One hundred (100) patients with glaucoma were selected from two eye clinic in Accra as the sample for the study. The patients were administered questionnaires that measured their levels of depression, anxiety, stress and social distress associated with living glaucoma. The cross-sectional survey design was used and descriptive statistics such as percentages and inferential statistics such as One-Way ANOVA, independent t-test and Pearson correlation were used for the data analysis. Results from the analysis showed that 99% of the patients reported mild to extremely severe depression with the most reported case being moderate depression (55%) followed by severe depression (34%). Only 1% of the sample reported normal depression levels. It was also observed from the analysis that 75% of the patients reported mild to extremely severe anxiety levels. The most reported case is the moderate anxiety (31%) followed by mild anxiety (20%). However, 25% of the glaucoma patients reported normal anxiety levels. On stress levels, 45% of glaucoma patients sampled for the study reported mild to severe stress levels with the most reported case is mild stress (20%) followed by moderate stress levels (16%). However, 55% of glaucoma patients reported normal stress levels. Further analysis showed that female glaucoma patients reported higher depression, anxiety and stress levels than male glaucoma patients, younger glaucoma patients reported higher depression, anxiety and stress levels than older glaucoma patients. However, no statistically significant differences exist among Glaucoma patients who are Employed, Unemployed and Self-employed in their depression and anxiety levels but differed significantly on their stress levels. No
statistically significant differences exist among Glaucoma patients who are Single, Married, Widowed and Divorced in their depression and anxiety levels but differed significantly on their stress levels. Additionally, there is a significant positive relationship between patients’ social distress and emotional distress (DASS). It is concluded that there is high level of psychosocial distress among patients with glaucoma with patients’ age, sex and marital status significantly affecting their psychosocial distress and therefore, psychosocial care should be included in the healthcare of these patients.
ACKNOWLEDGEMENT

The writing of this research work has not been an easy task. It took the efforts of many individuals to put this work in place. I am grateful to the Lord God Almighty for making my dreams come true. I thank my husband Alex Eshun and children for supporting me throughout my studies. My appreciation goes to my mother, mrs Theresa Eviam for encouraging me throughout this journey.

I wish to express my gratitude especially to Dr. Attindabilla and Mr. Peter Abomah, my supervisors for their encouragement, their precious time used to correct my work and their directions on how best to complete the work. I am very grateful to Mr Nuworga Kugbe and Gladstone Agbakpe for going through the work and helping with the analysis.

I would like to thank Mr. Patrick Annan-Noonoo and Cyril Daniel Aniewu who helped in the typing of the work. I will also like to render my special thanks to Rev. Dr. Bruce, head of the psychology department and Mavis of the psychology department who helped and advised me. Above all, I would like to express my gratitude to all my friends who helped in diverse ways to make my work possible.
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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Transition through life’s journey comes with its own psychosocial as well as physical problems. One of the most notable physical challenges in old age is an eye problem commonly referred to as glaucoma. Sandford-Smith (2004) defined Glaucoma as a common disease of the eye which is the second most common cause of world blindness after cataract. Sandford-Smith (2004) explains further that in Glaucoma, the intraocular pressure rises, and the first tissue to be damaged is the optic nerve at the point where it enters the eye. Sandford-Smith (2004) goes on to explain that there are many causes of Glaucoma but the most common one are primary open angle and Angle Closure Glaucoma. Blindness due to this type of Glaucoma is irreversible and as a result, much attention is needed to be giving to the eye.

According to Faal (2012) primary Open-angle glaucoma is sometimes called the “thief of sight”. This is because blindness due to Glaucoma is irreversible and there is no pain or discomfort. Vision loss is so gradual that people often do not notice it. It cannot be cured as it is a chronic condition which requires ongoing treatment for the remainder of a patient’s life. Although the vision loss caused by Glaucoma is irreversible, medication or surgery can usually control the pressure within the eye and slow or halt the progression of the disease. Thus, if the disease is diagnosed in its early stages, it can be treated effectively, and vision can usually be preserved (Friedlaender, 2009). However, most people have fears and misconceptions about losing their
sight and as a result clients with glaucoma need trust and encouragement by their relatives to seek attention.

Furthermore, several risk factors have been noted to predispose individuals to developing glaucoma (Dawoda, Otakpor & Ukponmwam, 2004). One of the most commonly cited risk factors for developing glaucoma is age of the individual. It is observed that glaucoma affects about 2 percent of people over age 40, and about 8 percent of people over age 70. Similarly, family history of glaucoma and race of individuals have been implicated in development of glaucoma. For instance, it is reported that although the pattern of inheritance is not regular and predictable, the disease runs in families. Similarly, black people have been shown to be six to eight times than whites to develop glaucoma and even at an earlier age. Some medical conditions such as diabetes, nearsightedness, high blood pressure, and long-term use of cortisone or other steroid medications have been implicated in developing glaucoma.

Additionally, it is important to note that glaucoma does not manifest in the same way but occurs in two main forms; namely, Chronic simple and Acute Glaucoma. In chronic simple Glaucoma, pressure within the eye rises gradually, and vision loss progresses over a period of years. Chronic Simple Glaucoma is also known as Open-Angle Glaucoma because the angle between the cornea and iris remains normal. This study focuses on chronic simple Glaucoma, which accounts for 95 percent of all cases of Glaucoma (Wu, Guo, Xia, Lu & Xi, 2011).

However, in acute Glaucoma the pressure inside the eye rises suddenly and immediate medical treatment is necessary to preserve vision. Acute Glaucoma is also known as Narrow-Angle or Angle-Closure Glaucoma, because the angle between the cornea (the transparent layer of tissue
at the front of the eye) and the iris (the colored part of the eye) becomes smaller than normal (Wu, Guo, Xia, Lu & Xi, 2011).

Glaucoma is the world’s leading cause of irreversible blindness, approximately 4.5 million people worldwide are blind due to Glaucoma (Johnson et al. 2011). The World Health Organization (WHO) estimated that about 4.4 million blind people were as a result of Glaucoma which represents 12.3% of the blind globally (Krishnadas & Puthuran, 2009). Worldwide, approximately 6.7 million people have significant vision loss in both eyes due to Glaucoma, making this condition the second leading cause of blindness. About 120,000 people in the United States alone have significant bilateral vision loss due to glaucoma, and the condition is the leading cause of preventable blindness in the nation. More than 2 million people are currently being treated for Glaucoma, and an estimated 1 million additional cases of the disease are undiagnosed (Friedlaender, 2009).

According to Glaucoma Today Online, 2014, glaucoma is the second leading cause of blindness in Africa after cataract; Glaucoma is responsible for approximately 15% of blindness on the continent. Despite having the highest incidence and prevalence of Glaucoma in the world, the African region has only recently recognized glaucoma as a priority eye disease, according to Vision 2020 initiatives. Glaucoma in Sub Saharan Africa is a devastating and often neglected disease which most communities stigmatized it with superstitious beliefs.

One of the factors that may cause the delay of patients reporting could be attributed to the fact that about 80% or more of the population live in rural areas, while the majority of ophthalmologists reside in urban centres. In many regions of Sub Saharan Africa, the ophthalmologist-patient ratio is 1: 1 million people. The shortage of trained eye care
professionals is linked to limited number of eye hospitals, the majority of which are located in urban centres. Public health initiatives targeting Glaucoma in Sub Saharan Africa must address factors underlying a lack of public awareness of Glaucoma.

Although some individuals tend to adjust quite well with some form of illnesses, a diagnosis of a serious eye disease such as glaucoma which can lead to blindness has significant emotional impact on the patient and their relatives as the diagnosis requires changing roles in the family and society (Dawoda, Otakpor & Ukponmwan, 2004; Wu, Guo, Xia, Lu & Xi, 2011). Research evidence has suggested that psychiatric comorbidity in glaucoma patients could negatively impact their compliance behavior. For instance, Pappa et al (2006) found from their study that the presence of depression among persons living with glaucoma complied poorly with their treatment regimen compared to their counterparts with no comorbid depression. This noncompliant behavior among the patients could affect the long term prognosis and course of the illness.

The prevalence of comorbid mental health problems in physical illnesses cut across several illnesses. For instance, a study by Shih et al, (2006) in the United Stated among persons living with arthritis noted that adults with arthritis reported higher levels of serious psychological distress, depression and anxiety compared to the general population without the illness. Similar conclusions were also drawn by other researchers that there is high prevalence of mental health problems among persons with medical conditions than their healthy counterparts (Dickens, McGowan, Clark-Carter, & Creed, 2002; el-Miedany & el-Rasheed, 2002).

It has been reported that persons living with Glaucoma which is a progressive disease are likely to experience emotional stress due to nature of their therapies which are usually aggressive over
frequent clinical visits and subjective awareness of a decline in visual function (DiMatteo, Lepper & Croghan, 2000; Lundmark, Trope, Shapiro & Flanagan, 2009). That is, since the patients are aware that their condition gets worse with passage of time and they are likely to lose their sight, feelings of sadness, apprehension, helplessness and hopelessness become common feelings.

The prevalence of psychological distress, non-compliance issues, depression and anxiety among persons living with glaucoma have been associated some patients’ demographic characteristics such as sex, age, income, education and duration of illness. For instance, Dawoda, Otakpor and Ukponmwan (2004) found from their study in Nigeria that lack of formal education significantly predicted psychiatric morbidity among persons living with glaucoma. It was also noted that depression was higher among patients aged 50 years and above than those aged less than 50 years whiles patients less than 50 years reported higher anxiety level than patients above 50 years. These differences in reported psychological distress due to patients’ demographic characteristics have been reported by other researchers (Dunlop, Lyons, Manheim, Song & Chang, 2004).

The challenge to the patients living with glaucoma is twofold as the patients have to deal with issues affecting their sight as well as the psychosocial impacts. For instance, the glaucoma may result in loss of employment as sight problems might hinder the individual’s performance at the workplace. The financial burden of long term treatment for the glaucoma also may affect the family dynamics as resources will be diverted to treatment of the illness which hitherto would have been used for other businesses. These challenges coupled with the physical threats posed by
the disease tend to result in severe emotional distress which needs to be addressed holistically in the provision of healthcare.

1.2 Problem Statement

Various studies in different countries in Sub Saharan Africa have established a significantly higher prevalence of Glaucoma. The recent Tema Eye Survey in Ghana found an overall prevalence of primary open-angle Glaucoma in people over age 40 of 6.8% that increased to 14.6% among those 80 years and older (Debrah, 2014). Debrah (2014) also asserted that Ghana is a leading country with the highest Glaucoma cases of 700,000 with 35,000 patients going blind. He further stated 24,000 Ghanaians are blind with half of the figure being victims of cataract, a clouding of the lens of the eye that impairs vision.

Abutiate (2014) indicates that Glaucoma continues to be a major public health menace and it remains the cause of irreversible blindness in the world. He pointed out that as over 6 to 8 million people who are living with Glaucoma and about half of those figures do not know they have the condition, while over one million people have become blind as a result of Glaucoma. It is estimated that about 600.00 Ghanaians are affected by the eye disease and out of them 25,000 are said to be aware of their medical condition. The eye is a small but delicate organ which serves as a “window” to the body, (Sandford-Smith, 2004). It will therefore, be appropriate to prevent it. The eye controls most of the organs so any damage to it is a serious issue.

It is interesting to note that although several research findings have pointed out the burden of glaucoma, little attention is paid to the psychosocial experiences of these patients and how they
deal with them. The question that remains unanswered is whether their psychosocial experiences of glaucoma patients are taken into consideration in providing healthcare to the patients? Are the glaucoma patients receiving holistic care which includes counseling concerning their illness? These and many other concerns warrant research to address the issues relating to the psychological functioning of glaucoma patients.

1.3 Purpose of the Study

The purposes of this study are twofold;

- Highlight the emotional distresses that confront persons living with Glaucoma as the condition has been reported to be on the increase in Ghana. This is due to the fact that relatively very little is known about the emotional experiences people go through when they are diagnosed with the Glaucoma.

- Literature search revealed that the psychological aspects of living with glaucoma have not received much attention within the Ghanaian context despite findings from other parts of the world demonstrating comparatively poor psychological wellbeing and quality of life. Thus, this study will provide the needed information to healthcare professionals dealing with persons with Glaucoma.

1.4 Objectives of the Study

The study has the following objectives;
1. To determine the level of psychological distress among patients with glaucoma.
2. To examine the level of specific emotional distress such as depression, anxiety and stress among patients.
3. To make a case for policies for glaucoma as part of National Health Insurance Scheme.

1.5 Relevance or Significance of the Study

The study will help in incorporating psychological services into the healthcare regimen of persons living with glaucoma as this study will provide the empirical background for any argument in favor of the study. This study will help identify patients’ characteristics that predispose them to develop mental health problems to inform healthcare decisions. This will help healthcare professionals in developing individual tailored interventions for persons with glaucoma based on their individual differences due to the patients’ characteristics.

This research will provide adequate information for health care professionals, organizations, family members, and society at large to cope with glaucoma and prevent further damage leading to blindness and reducing the stigma. Further, the research findings will also help in policy decision making as glaucoma is not part of the National health insurance scheme. This is because of the cost involved in dealing with glaucoma which could serve as a source of distress to the patients and their family members.
1.6 Organization of the Study

This study is organized into five chapters with each chapter consisting of several subsections. The various chapters are discussed into details;

Chapter One-Introduction

This chapter consists of the background to the study, statement of the problem, aims/objectives, purpose of the study, relevance of the study and the organization of the study.

Chapter Two- Literature Review

This chapter consists of the theoretical framework, the review of empirical studies, summary of literature review, rationale for the study and statement of hypotheses.

Chapter Three-Methodology

This chapter consists of the research design, population and sample, sampling technique, research instruments, data collection procedure and statistical techniques.

Chapter Four- Results

This chapter presents the summary and interpretation of the results, and summary of findings.

Chapter Five- Discussion

This presents the discussion of the key findings, the limitations of the study, implication of the study, the recommendations and conclusion.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter includes the theoretical framework that explains the research problem under review. It also includes review of some empirical literature pertaining to the study to help make fair assessment of the current situation of psychological distress among persons living with Glaucoma. The chapter is categorized under the following sub-headings:

- Theoretical Framework
- Related Studies
- Summary of Literature review
- Rationale for the study
- Statement of Hypotheses

2.2 Theoretical Framework

The study examined three main components of psychological distress among patients with Glaucoma, namely; depression, anxiety and stress. Consequently, two key theories which explain depression and anxiety, and stressed are evaluated. The two theories are the Beck’s cognitive theory of depression and anxiety and stress response theory.
2.2.1 Beck’s Cognitive Theory of Depression and Anxiety (Beck, 1996)

This theory posits that depression is the result of faulty or maladaptive cognitive processes. The theory further assumes that the symptoms of depression whether emotional or physical are due to an individual’s thinking patterns that are usually faulty in nature. The Beck’s theory of depression has three aspects, namely; The Cognitive Triad, Silent Assumptions and Information Processing.

The Cognitive Triad

According to Beck (1996), depressed people have unrealistically negative ways of thinking about themselves, their experiences/world and their future. Thus, the theory assumes that many of the secondary symptoms of depression can be understood in terms of this core of negative beliefs. For example, an individual patient with Glaucoma might believe that he is becoming blind and therefore, he is useless. This might lead the patients lose interest in activities he used to enjoy because he expects nothing better in future as Glaucoma is a chronic and lifelong disease.

Silent Assumptions

In further explaining the causes of depression among people, Beck (1996) asserts that the inner life of depressed people is dominated by a set of assumptions that shape conscious cognitions. These assumptions derive ultimately from the messages we receive from parents, friends, teachers and other significant people. These messages could be intentional or unintentional. Although, every individual subscribes to some of these silent assumptions, the extent to which an individual subscribes to them determines the persons’ emotional outcome. People who are depression prone like patients with glaucoma may overly subscribe to some of these assumptions.
due to their predicament. However, these silent assumptions play significant roles in making people vulnerable to depression. Examples of silent assumptions might include:

- "I must get people's approval"
- "I must do things perfectly or not at all"
- "I must be valued by others or my life has no meaning"
- "The world must always be just and fair"

Information Processing/ Distorted Thinking Styles

A third aspect of Beck’s model concerns how depressed people are prone to distorting and misinterpreting information from the world. They are inclined to make overly negative and self-defeating interpretations that lead to low mood and passivity. The information processing does not pertain to only depression but anxiety disorders as well. For instance, if an individual with Glaucoma patients think that the glaucoma gets treated completely or nothing can be done about it, he is likely to become anxious that he automatically go blind. Some examples of these thinking styles include; polarized thinking, catastrophizing, blaming, personalization, emotional reasoning and over generalization among others.

Despite some few shortcomings of the Beck’ Cognitive Theory of depression and anxiety in explaining etiology and treatment as it fails to explain the mechanisms of action, copious evidence suggest that theory is relevant in explaining the etiology and treatment of depression and anxiety (e.g. Merrill, Tolbert, & Wade, 2003; Persons, Roberts, Zalecki, & Brechwald, 2006; Scher, Ingram, & Segal, 2005; Segal et al., 2006).
2.2.2 General Adaptation Syndrome (Selye, 1976)

When an individual is faced with a challenging situation like chronic illness, the reaction to this challenge is very significant in determining the outcome and wellbeing of the individual in the face of the illness. This is because illnesses pose as major threats to the existence of human and as such are major sources of stress. However, no matter the amount of the stressor, its impact can be long lasting on the individual. Thus, Selye (1982) said that “Every stress leaves an indelible scar, and the organism pays for its survival after a stressful situation by becoming a little older.” This assertion by Selye (1982) shows that the smallest of stressors could have significant negative impacts on an individual’s health if it is not managed well.

The general adaptation model has several assumptions regarding stress and how the human body reacts to threats. The General Adaptation Syndrome assumes that any demand, positive or negative, can provoke the stress response; (b) the stress response is characterized by the same chain of events and pattern of physiological correlates regardless of the stressor or stimulus that provoked it. The GAS theory presumes that adaptive resources are genetically determined and finite. Based on these assumptions underlying the theory, Selye (1976) suggested three specific stages in the stress response process, namely; Alarm stage, Resistance stage and Exhaustion stage. These stages are described in details;
**Alarm Stage**

This stage according to the general adaption syndrome theory is when the presence of a threat (Glaucoma) is noticed by the individual and attempts are made at dealing with the stressor. The individual’s body begins to react with “fight-or-flight” response and sympathetic nervous system is activated. When the sympathetic nervous system is activated, hormones such as cortisol and adrenalin are released into the bloodstream to meet the threat or danger. However, when these hormones are secreted in excess and not completely utilized, they can cause severe health problems to the individual.

**Resistance Stage**

The resistance stage is evidenced by a dramatic reduction in the alarm reaction as full resistance to the stressor is being established. Homeostasis begins restoring balance and a period of recovery for repair and renewal takes place. During the alarm stage of the stress response the sympathetic nervous system is very active but at the resistance stage of the stress response is characterized by the activation of the parasympathetic nervous system which returns many physiological functions to normal levels while body focuses resources against the stressor. At this stage also, an individual’s blood glucose levels remain high, cortisol and adrenalin continue to circulate at elevated levels, but outward appearance of organism seems normal.

**Exhaustion Stage**

If the organism is not able to return to a normal level of resistance (i.e., pre-alarm reaction homeostasis) or the initial insult is too overwhelming, a third stage, the stage of exhaustion, ensues. At this time, endocrine activity is heightened; high circulating levels of cortisol begin to
have pronounced negative effects on the circulatory, digestive, immune, and other systems. The symptoms are strikingly similar to those of the initial alarm reaction, but such a high level of resistance cannot be maintained indefinitely. Human resources become depleted, and permanent damage to the system through wear and tear or death or both is likely to occur. This third stage has placed so much emphasis on stress management as it explains the possible negative health impacts of stress on the individual.

2.3 Review of Related Studies

Living with an eye problem especially glaucoma is one of the most difficult things as it comes with its associated challenges. In an explorative study among persons living with glaucoma to examine their lived experiences and their coping strategies, Wu, et al. (2010) observed that Glaucoma patients’ main concern was ‘learning to living with it’. By this major theme, the researchers identified four themes regarding how Glaucoma patients cope with their illness and these included; seeking support, coping with daily tasks, living with future uncertainty, and adapting to a decline in life quality. The uncertainties associated with living with glaucoma and the decline in quality of life could influence the emotional wellbeing of patients. These findings were also reported by previous studies that documented lasting poor psychological wellbeing (Jampel, 2001; Pache & Flammer, 2006).

A cross-sectional study conducted by Fasih, Hamirani, Jafri, Riaz and Shaikh (2010) assessed anxiety and depression in primary open angle glaucoma patients. The random sampling technique was used to select a total of 100 patients who had undergone thorough investigation
and examination and diagnosed as patients of primary open angle glaucoma. The Hospital Anxiety and Depression Scale were administered to the patients and results from the analysis showed that 33% of the patients and 24% of patients reported Anxiety and depression. These percentages indicate that patients with Glaucoma experience a substantial amount of emotional distress which needs to be addressed in the delivery of healthcare.

Pappa et al (2006) in a study observed that the presence of depression among patients with glaucoma is associated with poor compliance. The researchers also noted that patients’ adoption of immature defensive style further increased the risk for noncompliance with glaucoma treatment. This study examined impact of psychological distress and personality traits on compliance among patients with glaucoma as some previous studies have indicated the adverse consequences of comorbid mental health problems in physical conditions. A total of one hundred patients with primary open-angle glaucoma were selected as the sample and the participants were administered with questionnaires such General Health Questionnaire, Symptom Distress Checklist, Center for Epidemiological Studies Depression Scale, Defense Style Questionnaire, and Hostility and Direction of Hostility Questionnaire. The outcomes of this study highlight the importance of identifying comorbid mental health problems among patients with glaucoma which is consistent with some earlier studies (e.g. Dimatteo, Lepper&Croghan, 2000; Gostautas, Pranckeviciene & Matoniene, 2006; Wing, Phelan & Tate, 2002).

In a related study among Chinese patients to determine the prevalence and risk factors of depression, Yan et al (2013) randomly sampled 784 inpatients from three tertiary general hospitals and evaluated. The results from their analysis revealed that there were 13.1% and 6.9% prevalence rates of any depressive disorder and major depressive disorder (MDD) respectively.
Further analysis revealed that poor marital status, living alone or with others, lack of medical insurance, poor or very poor self-rated physical health, hospitalization in the internal medicine department, and a subjective support score ≤23 were the main risk factors for reporting depression. However, the researchers failed to include persons with eye problems such as glaucoma despite the significance of the eye to the human body and existence.

Zhou, Qian, Wu and Qiu (2013) examined the levels of depression and anxiety among Chinese patients with glaucoma by identifying the socio-demographic characteristics of patients that predict their depression and anxiety levels. The cross-sectional study design was used and a total of 506 Chinese glaucoma patients were randomly sampled and administered the Hospital Anxiety and Depression Scales (HADS) and the Chinese-version Glaucoma Quality of Life-15 questionnaire. Findings from the analysis of the data showed that prevalence of anxiety and depression in Chinese glaucoma patients was 22.92% and 16.40%, respectively. The patients’ characteristics that are significantly associated with anxiety in this sample included younger age, female gender, moderate and heavy economic burden, and the CHI-GQL-15 summary score whereas the prevalence of depression was significantly predicted by duration of glaucoma (and the CHI-GQL-15 summary score. This study provided the basis for screening patients living with glaucoma as the study outcomes revealed high prevalence of depression and anxiety which negatively impact on the quality of life of the patients.

Studies conducted among patients with eye problems, especially Glaucoma have demonstrated that a significant number of the patients experience psychosocial challenges which inevitably affect the quality of life of these patients. As a result, Kong, Zhu, Hong and Sun (2013) examined whether the understanding of glaucoma by the patients is significantly related to their
psychosocial distress and their vision-related quality of life. A total of 100 patients living with glaucoma were sampled for the study. Results showed that patients’ knowledge of glaucoma, compliance and habits were significantly and negatively correlated with their levels of Anxiety and Depression as measured by HADS scores. This finding emphasized the need of psycho-education for patients with glaucoma as knowledge demonstrates a significant association with their emotional distress. The provision of counseling services to the patients regarding their adherence to their treatment regimen is imperative.

In community based-sample of 662 adult who are 70 years and above, Eramudugolla, Wood and Anstey (2013) reported 43.4% prevalence of eye diseases (cataract, glaucoma, or age-related macular degeneration (AMD). The researcher further observed from their study that there was 3.7% prevalence of clinical depression among individuals with no eye disease. However, the prevalence rates of depression were higher among individuals with one eye disease or the other. That is, there was a prevalence rate of 4.3%, 6.7% and 10.5% among individuals with glaucoma, cataract and age-related macular degeneration respectively. The study further examined factors associated with depression and anxiety among individuals with eye diseases revealed that cataract only, AMD, comorbid eye diseases and reduced low contrast visual acuity significantly predicted depression whereas individuals’ self-reported cataract, and reduced low contrast visual acuity, motion sensitivity and contrast sensitivity were the significant predictors of anxiety. It is however interesting to note from this study that living with Glaucoma did not increase the chances of depressive and anxiety symptoms. The conclusion concerning depression and anxiety among glaucoma patients is inconsistent with some previous works which reported Anxiety and depression are two common forms of psychological disturbance that affect patients with glaucoma (Tastan et al., 2010; Wang, Singh & Lin, 2012).
In a large national cross-sectional survey by Wang, Singh & Lin (2012), the prevalence of and the risk factors for depression among participants with glaucoma were examined. A total of 6760 respondents reporting the presence or absence of glaucoma from the National Health and Nutrition Examination Survey (NHANES) which was between 2005 and 2008. The prevalence of depression was determined by a score \( \geq 10 \) on the Patient Health Questionnaire-9 (PHQ-9). The results from the analysis revealed respondents who have glaucoma had depression prevalence of 10.9% while respondents without glaucoma reported depression prevalence of 6.9% respectively. The authors concluded from their results that the association between living with glaucoma and depression remained statistically significant after controlling for respondents demographic characteristics. It was however observed from the results that glaucoma severity did not significantly predict the levels of depressive symptoms among the respondents. Although this study provided an insight to prevalence of depression, it left out anxiety which has been reported as one of the common psychological disturbances in glaucoma patients (Mabuchi et al., 2012; Wang, Singh & Lin, 2012; Zhou, Qian, Wu & Qiu, 2013).

In a related study, Mabuchi et al., (2012) sought to determine the risk factors for anxiety and depression in patients with glaucoma. A total of 408 patients with glaucoma were evaluated using the hospital anxiety and depression scale (HADS) questionnaire, which consists of two subscales, representing HADS-anxiety (HADS-A) and HADS-depression (HADS-D). As such the stepwise and multiple linear regression analyses were carried out. Results of the linear regression analysis showed the significantly related factors to be age for anxiety. Based on multiple linear regression analyses, significant relationships were confirmed between age and the HADS-A subscore. Also significant relationships were also confirmed between age and the HADS-D subscore. Thus, a younger age was found to be a risk factor for anxiety, while an older
age and increasing glaucoma severity were risk factors for depression in patients with glaucoma. Implications of this research are that there is the need for the involvement of clinical psychologist is the treatment of patients with glaucoma to deal with psychological problems of anxiety and depression. Additionally patients will need to be taught good coping strategies so that they do not develop anxiety (especially with younger patients) and depression (with older patients).

Mabuchi et al (2008) examined anxiety and depression in patients with primary open-angle glaucoma (POAG). For the purpose of this study two hundred thirty patients with POAG and 230 sex-matched and age-matched reference subjects with no chronic ocular conditions except cataracts. The prevalence of POAG patients with anxiety (a score of more than 10 on the HADS-A) or depression (a score of more than 10 on the HADS-D) was compared with that in the reference subjects. The prevalence of patients with depression was compared between the POAG patients with and without current beta-blocker eye drops. The prevalence of POAG patients with anxiety was significantly higher than in the reference subjects. The prevalence of POAG patients with depression was significantly higher than in the reference subjects. Between the POAG patients with and without beta-blocker eye-drops, no significant difference in the prevalence of depression was noted. POAG was related to anxiety and depression. No significant relationship was found between the use of beta-blocker eye-drops and depression was noted. Thus, for effective management of the condition anxiety and depression need to be treated.

Weiss, Goldich, Bartov, and Burgansky-Eliash (2011) conducted a study to find the prevalence of depressive symptoms in glaucoma patients and the association between these symptoms and non-compliance with anti-glaucoma therapy. It was cross sectional observational study, to check
compliance with pharmacotherapy was assessed with the Morisky Medication Adherence questionnaire (eight items). Screening for depression was performed by means of the CES-D (Center for Epidemiologic Studies Depression scale). The study group comprised 76 glaucoma patients; 19.7% of the subjects were classified as non-compliant (Morisky cutoff 10) and 21.1% suffered from depression (CES-D cutoff > or = 16). We found a similar level of non-compliance when comparing depressed with non-depressed glaucoma patients. However, a correlation was observed between the level of depression and the level of non-compliance. Even though the study findings were clinically relevant the sample size was relatively small and that might be the reason why there was no significant difference in non-compliance when comparing depressed with non-depressed patients. Thus, future research needs to be conducted on a larger sample.

Wilson, Coleman, Yu, Sasaki, Bing and Kim (2002) in their study aimed at determining whether patients with glaucoma have more depressive symptoms than patients without glaucoma. As such they conducted a prospective case control study with a population recruited from two university-based glaucoma clinical practices and a university-based general ophthalmology clinic and a sample size of 121 patients with open-angle glaucoma, 42 with diagnoses of suspected glaucoma, and 135 with no chronic ocular conditions except cataract. From the results it was evident that depression scores for patients with glaucoma did not differ significantly from scores of control patients. Having past or present mental illness was the only consistent predictor for depression in both questionnaires. Among glaucoma patients, visual acuity level, visual field severity, and use of topical beta-blockers were not predictors for depression.
Cumurcu, Cumurcu, Celikel and Etikan (2006) conducted a research aimed to determine whether patients with pseudoexfoliative glaucoma (PXG), associated with vascular disorders, have more depressive and anxiety symptoms than patients with primary open-angle glaucoma (POAG) and controls without glaucoma. The vascular depression model was tested in this study. The sample consisted of 41 PXG patients, 32 POAG patients and 40 controls. Each subject was diagnosed as having PXG or POAG or chosen as a control patient by an ophthalmologist and then evaluated by a psychiatrist. The Structured Clinical Interview for DSM-IV, Turkish version; Hamilton Depression Rating Scale (HDRS); Hamilton Anxiety Rating Scale (HARS); Mini Mental State Examination; and Montgomery–Asberg Depression Rating Scale (MADRS) were administered to all subjects. Findings revealed HDRS and MADRS scores of the PXG patients were significantly higher than those of the POAG and the control group. The HARS scores did not show a significant difference between the patients with PXG or POAG and the control subjects. In each of the three groups, there was no correlation between the HDRS, HARS or MADRS scores and any of the following parameters: duration of glaucoma, medical treatment, visual acuity, intraocular pressure, perimetric stage, cup–disc ratio and number of glaucoma operations. This research as the ones by Weiss et al. and Mabuchi et al., (2012) emphasize the need of the joint effort of physicians and psychiatrist as well as psychologist in the treatment regimen of glaucoma.

Similarly, Dawoda, Otakpor and Ukponmwan (2004) recruited fifty consenting patients attending glaucoma clinic over six-month period and screened them for general psychiatric morbidity, anxiety and depression using the SRQ-20 and HAD scales respectively. Findings showed that all the depressed patients were males. The glaucoma patients with co-morbid psychiatric disorder had significantly higher scores on all psychometric test instruments than
those without comorbidity. Lack of formal education was the only socio-demographic variable that was significantly associated with psychiatric co-morbidity. Patients aged 50 years or above scored significantly higher than those aged less than 50 years on the depression subscale of the HADS, while the reverse was true for the anxiety sub-scale. The prevalence and pattern of distribution of psychiatric disorders found among glaucoma patients in this study did not differ from that of the normal population. This study was limited in the sample size that was used since it was too small. Thus, findings from this study cannot be generalized to the whole population it will only be limited to the sample that were used for the study.

With the purpose of investigating the relationship between anxiety, depression, and quality of life in patients with glaucoma Tastan, Iyigun, Bayer & Acikel (2010) carried out and important research. This case-control study was carried out with 121 participants with glaucoma with a mean age of 64.2, 68 women, 76.0% married and 64 controls. The data were collected by using a data collection form involving questions on patients' specific characteristics, the Hospital Anxiety and Depression Scale, and the National Eye Institute Visual Function Questionnaire. Rate of clinical anxiety was 14.0% and depression 57.0% among the participants with glaucoma. The anxiety risk in women with glaucoma was found to be 7.5 times higher than in men. Risk of depression was 2.94 times higher in unmarried compared to married participants. Anxiety scores were higher in unmarried participants and women. The mean Depression score was statistically significantly higher for unmarried participants. The incidence of depression and anxiety increased with decreasing quality of life scores. Quality of life was associated negatively with anxiety and depression in patients with glaucoma. It implies that unmarried patients need supportive therapy and coping strategies to help lower the rates of anxiety and depression among them. This study shows that evaluating quality of life, anxiety, and depression in older
individuals who have glaucoma and examining the risk factors are important to provide earlier health care service and preventive psychological treatment.

To determine the prevalence of depression and its association with visual field impairment, quality of life, objective assessment of visual function, and glaucoma severity in elderly patients with glaucoma a Cross-sectional study was conducted. One hundred sixty-five patients with mild, moderate, or severe glaucoma and 34 controls with ocular hypertension were enrolled. After data was analyzed results showed that depression was more prevalent with increasing glaucoma severity, reaching statistical significance in patients aged 70 to 79 years. Summary and subfactor GQL-15 scores reflected decreased quality of life with increasing glaucoma severity. Assessment of function related to vision scores indicated worsening visual function with increasing glaucoma severity. On multivariate regression analysis, depression status was correlated with age and GQL-15 summary score. It was found that depression is more common in patients with increasing glaucoma severity (age, 70 to 79 y). In patients with glaucoma or ocular hypertension, age and GQL-15 summary score are independent risk factors for depression (Skalicky & Goldberg, 2008).

Additionally, Zhou, Qian, Wu and Qiu, (2014) conducted a research with the aim of assessing vision-related quality of life (VRQoL) in Chinese glaucoma patients and explore its socio demographic, clinical and psychological correlates, and determine which of them explain the largest variation. The sample size used was 508 Chinese glaucoma patients. Chinese-version Glaucoma Quality of Life-15 questionnaire (CHI-GQL-15) and Hospital Anxiety and Depression Scales were administered to all participants to evaluate their VRQoL and psychological distresses. Visual functions (habitual-corrected visual acuity (HCVA), intraocular pressure, and
mean defect (MD) of visual field) were assessed through clinical examinations by professionals. Socio demographic information and other treatment histories were collected via interviews and chart review. Stepwise multiple linear regression analyses were performed to identify socio demographic, clinical, and psychological predictors of VRQoL. Patients exhibited the greatest difficulty in activities involving glare and dark adaptation, followed by central and near vision, peripheral vision, and the least difficulty for outdoor mobility. Moderate and heavy economic burden, HCV A and MD of both the better and the worse eyes, number of glaucoma surgeries in the treatment history and the presence of depression were independent predictors for VRQoL of glaucoma patients. Clinical factors explained the largest variation. VRQoL of glaucoma patients is multifactorial and was primarily determined by clinical indices. VRQoL assessment could be informative when adopted as a complement to objective visual measures in clinical practice.

A similar study to evaluate the quality of life (QOL) of primary open angle glaucoma (POAG) patients attending a tertiary eye institution in Lagos, Nigeria and identify clinical and socio demographic factors affecting it was conducted by Onakoya, Mbadugha, Aribaba and Ibidapo, (2012). A hospital-based cross-sectional analytical study design was used to compare 132 patients with varying degrees of severity of glaucoma (cases) with age-matched and sex-matched controls with essentially normal eyes and no family history of glaucoma. After data analyses findings revealed POAG patients had reduced QOL as defined by the 2 instruments used: the National Eye Institute Visual Function Questionnaire25 (NEIVFQ25) and the 15-item Glaucoma Quality of life Questionnaire (GQL-15). Early or mild glaucoma was associated with reduced QOL compared with the controls. Glaucoma patients had the greatest difficulty with glare and dark adaptation subscale of the GQL-15. Increasing severity of disease defined by increasing visual field deficit (mean deviation values) correlated significantly with worsening QOL.
Contrast sensitivity correlated moderately with QOL whiles cup-to-disc ratios, visual acuity, and visual field indices (mean deviation) correlated with QOL scores of both tools. Age had a negative impact on QOL and affected all the subscales of the GQL-15 and most subscales of the NEIVFQ25 except ocular pain, mental health, color vision, and role difficulty. Women generally had better vision-related QOL scores. Higher educational status was associated with better QOL scores. However, ethnicity, religion, marital status and living situation had no significant effect on QOL scores. It was concluded that POAG reduces QOL even in the early stages of the disease, as there was a significant reduction in the QOL of patients with mild glaucoma compared with the controls. It showed a clear trend of worsening QOL scores with increasing severity of disease. One important thing the researchers did was to examine culturally relevant factors such as ethnicity, religion, marital status and living situation and their effects on quality of life among patients with glaucoma. This finding revealed that, it will be necessary to include QOL assessment in clinical practice since that will be highly informative.

Another interesting research to examine the association between health-related quality of life (HRQOL) and visual field (VF) loss in participants with open-angle glaucoma (OAG) in the Los Angeles Latino Eye Study (LALES) was conducted by McKean-Cowdin, Wang, Wu, AzenandVarma (2008). The two hundred thirteen participants with OAG and 2821 participants without glaucoma or VF loss underwent a detailed eye examination including an assessment of their VF using the Humphrey Automated Field Analyzer (Swedish interactive thresholding algorithm Standard 24-2). Open-angle glaucoma was determined by clinical examination. A trend of worse NEI-VFQ-25 scores for most subscales was observed with worse VF loss (using both monocular and calculated binocular data). Open-angle glaucoma participants with VF loss had lower scores than participants with no VF loss. This association was also present in
participants who were previously undiagnosed and untreated for OAG (N = 160). Participants with any central VF loss had lower NEI-VFQ-25 scores than those with unilateral or bilateral peripheral VF loss. There was no significant impact of severity or location of VF loss on SF-12 scores. This finding is similar to those found in a research conducted by Onakoya, Mbadugha, Aribaba and Ibidapo, (2012). Even though this researchers came out with relevant findings from their research they failed to look at anxiety and depression which are reported as the major psychological conditions affecting patients with glaucoma.

2.4 Summary of Literature Review

Research evidences have suggested that living with glaucoma poses a lot of challenge to the patients in physical, psychological and social domains. Two main theories were examined in terms of how patients develop depression, anxiety and stress. Research findings in the western countries and some African countries like Nigeria have demonstrated a high prevalence depression and anxiety among patients living with glaucoma (Tastan et al., 2010; Wang, Singh & Lin, 2012; Yan et al., 2013). However, some research findings did not find any significant difference in the experience of psychological distress between patients with glaucoma and patients without glaucoma (e.g. Eramudugolla, Wood & Anstey, 2013). Other studies have also documented decreased quality of life among patients with glaucoma compared to their counterparts without glaucoma (e.g. McKean-Cowdin, Wang, Wu, Azen & Varma, 2008; Onakoya, Mbadugha, Aribaba & Ibidapo, 2012; Zhou, Qian, Wu & Qiu, 2014).
2.5 Rationale for the Study

Although a lot of research have been conducted on the psychosocial experiences of glaucoma patients in other parts of the world such as the US, UK, Australia and China, only few studies have been reported on the African continent especially in Nigeria (e.g. Dawoda, Otakpor & Ukpongwan, 2004; Onakoya, Mbadugha, Aribaba & Ibidapo, 2012). Examining the literature critically, it was also observed that most studies did not pay enough attention to the stress levels of patients with glaucoma as well as their differences in their levels of depression, stress and anxiety. The review of the literature revealed that this study is the first of its kind among persons living with glaucoma and as a result serves to fill the literature gap in Ghana.

2.6 Statement of Hypotheses

After reviewing the literature, the following hypothesis were formulated.

1. Female glaucoma patients are more likely to report higher depression, anxiety and stress levels than male glaucoma patients.

2. Younger glaucoma patients are more likely to report higher depression, anxiety and stress levels than older glaucoma patients.

3. Unemployed glaucoma patients are more likely to report higher depression, anxiety and stress levels than self-employed and employed glaucoma patients.

4. Single glaucoma patients are more likely to report higher depression, anxiety and stress levels than married glaucoma patients.

5. There will be a significant positive relationship between social distress depression, anxiety and stress scores (DASS score).
CHAPTER THREE

METHODOLOGY

This chapter presents the systematic methods that were followed in the gathering of the data. The chapter is made up of six main sub-sections including the design, population, sample/sampling technique, materials/instruments, data collection procedure and the statistical techniques used for the data analysis. The six sub-sections are presented into more details;

3.1 Research Design

This study sought to examine the attitudes and feelings of glaucoma patients about their illness in terms of the levels of depression, anxiety, stress and glaucoma-related distress. The most appropriate research design considering the aims of this study was the cross-sectional study design which involves gathering data from the respondents at one point in time. The sample was also assumed to be a cross-section of glaucoma patients living and receiving healthcare in the Greater Accra Region of Ghana. One advantage of the cross-sectional survey design is that it allows for the collection of data from a relatively large sample within the shortest possible time (very economical). However, cause and effect relationships cannot be established from data collected at just one point in time without taking into consideration the situational factors that could affect the results.

3.2 Population

The population for this study is all the Glaucoma patients in the Greater Accra Region of Ghana. This population was chosen because the region is the capital of Ghana and has people from
different ethnic and national backgrounds. Thus, the population will not be biased towards any particular ethnic group in the study.

3.3 Sample and Sampling technique

The researcher adopted non-probability sampling of purposive type to select Glaucoma patients from the Emmanuel Eye and the Cocoa Clinics because these two eye clinics are well known for the treatment of eye conditions and have high daily attendance.

A total of one hundred (100) respondents were selected from two clinics in the Greater Accra Region, with a joint size of about 350. These were the Emmanuel Eye Clinic and the Cocoa Clinic. The size was chosen to help understand the psychological experience of clients diagnosed with glaucoma. The convenient sampling technique was used to select the total number of respondents from the Glaucoma patients. This technique was the most appropriate in the face of the resource and time constrains and the willingness of the available patients to take part in the study. The sample characteristics of the respondents in the study are summarized in the Table 1;
Table 1: Summary of Demographic Characteristics of Respondents in the Study

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 45 years</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>46-60 years</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>60 years and Above</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>GENDER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>62</td>
<td>62</td>
</tr>
<tr>
<td>Female</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td><strong>MARITAL STATUS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Married</td>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>Widowed</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>EDUCATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Secondary</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Polytechnic</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>University</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Post-graduate</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>EMPLOYMENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Unemployed</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Self-employed</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td><strong>RELIGION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Islam</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>African Traditional</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
3.4 Research Instruments/Tools

The study made use of mainly questionnaires. The measures were divided into three sections; Section A- Demographic information of the respondents, Section B- Depression, Anxiety and Stress Scale (DASS) and Section C- the Glaucoma related distress scale.

Section A-Demographic Information-This section comprised of information on respondents’ gender, age categories, educational level, employment status, marital status and religious affiliation.

Section B- Depression Anxiety Stress Scale (DASS-21) was used to measure Glaucoma patients’ level of depression, anxiety and stress Depression, Anxiety and Stress Scale (Lovibond & Lovibond, 1995). Items fall into three scales: Depression (D), Anxiety (A) and Stress (S) with 7 items per scale. Each item is scored from 0 ("did not apply to me at all") to 3 ("applied to me very much, or most of the time") in terms of how much the item applied to the individual within the past week. The total scores were multiplied by 2 to obtain the scores to reflect the original 42 item scale. On the DASS, a depression score of 0-9 is classified as Normal depression, a score of 10-13 is classified as Mild depression, a score of 14-20 is classified as Moderate depression, a score of 21-27 is classified as Severe depression and a score 28 and above is classified as Extremely severe depression. For anxiety levels, a score of 0-7 is classified as Normal anxiety, a score of 8-9 is classified as Mild anxiety, a score of 10-14 is classified as Moderate anxiety, a score of 15-19 is classified as severe anxiety and a score of 20 and above is classified as extremely severe anxiety. For stress levels, a score of 0-14 is classified as Normal stress, a score of 15-18 is classified as Mild stress, a score of 19-25 is classified as Moderate stress, a score of 26-33 is classified as severe stress and a score of 38 and above is classified as extremely severe.
stress. The internal consistencies of the three subscales were 0.71 for depression, 0.79 for anxiety and 0.81 for stress (Lovibond & Lovibond, 1995).

Section C-Social Distress Questionnaire. This is a 10 item scale developed by the researcher with the guidance of the supervisors to assess the specific distress that is associated with living with Glaucoma in terms of financial cost, emotional burden and health implications. Each item is scored from 0 (“did not apply to me at all”) to 3 (“applied to me very much, or most of the time”). The total score of the scale could range between 0 and 30 with higher scores reflecting more Glaucoma-related distress and lower score indicate lower Glaucoma-related distress respectively. The scale has an internal consistency of \( \alpha = .83 \) which indicates high reliability.

3.5 Data Collection Procedure

The data was collected from the Emmanuel Eye and Cocoa Clinics. The researcher ensured that all the ethical guidelines involved in the use of human participants in research were strictly followed in the design of the study. Letters of introduction were sent to the managements of the two health facilities with eye care services. These letters introduced the researcher to the managements of the health facilities and explained to them the aims/objectives of the study. After the managements of the two health facilities granted permission for the data collection, dates were fixed for the data collection.

On the days of data collection the researcher sought informed consent from the patients after approaching them individually to decide on whether to take part in the study or not. The participants were informed that participation in the study is voluntary and their refusal to
participate does not in anyway, affect the healthcare they receive. Those who consented to be part of the study were given the questionnaires to complete. The completion of the questionnaires lasted between 30 minutes to 1 hour depending on the reading speed of the individual patients. The completed questionnaires were retrieved for coding and analysis. The entire data collection procedure lasted for two months.

3.6 Data Analysis

For the data analysis, the hypothesis one was analyzed with independent t-tests as two groups of patients were compared. Hypotheses 2, 3 and 4 were analyzed with the One-Way analysis of variance as more than two groups were compared on their levels of depression, anxiety and stress. The 5 hypothesis was analyzed using the Pearson correlation as the variables were assumed to be linearly related and measured on interval scales.
CHAPTER FOUR

RESULTS

Chapter four presents the analysis and summary of the data gathered from the respondents. The Statistical package for the social sciences (SPSS 20.00) was used for the data analysis. The statistical techniques employed in the analysis of the data include frequencies, percentages, independent t-tests and One-Way ANOVAs. The results section has been divided into two main parts, namely; Descriptive Statistics and Hypotheses Testing

4.1 Descriptive Statistics

The Table 2 presents the descriptive statistics of the key variables in the study by presenting the means, standard deviations and the Cronbach alpha of the scales.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>MEAN</th>
<th>STD DEV.</th>
<th>RELIABILITY (α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>9.59</td>
<td>2.31</td>
<td>.61</td>
</tr>
<tr>
<td>Anxiety</td>
<td>8.97</td>
<td>2.88</td>
<td>.72</td>
</tr>
<tr>
<td>Stress</td>
<td>7.21</td>
<td>3.13</td>
<td>.68</td>
</tr>
<tr>
<td>Social Distress</td>
<td>11.59</td>
<td>4.77</td>
<td>.83</td>
</tr>
</tbody>
</table>
4.2 Hypotheses Testing

The key research question regarding the levels of depression, anxiety and stress levels was analyzed and the results are summarized in Table 3 below:

Table 3: Prevalence of Depression, Anxiety and Stress among Glaucoma Patients in the study

<table>
<thead>
<tr>
<th>SEVERITY</th>
<th>Depression (%)</th>
<th>Anxiety (%)</th>
<th>Stress (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>1</td>
<td>25</td>
<td>55</td>
</tr>
<tr>
<td>Mild</td>
<td>6</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Moderate</td>
<td>55</td>
<td>31</td>
<td>16</td>
</tr>
<tr>
<td>Severe</td>
<td>34</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Extremely Severe</td>
<td>4</td>
<td>5</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 3 shows that 99% of the patients reported mild to extremely severe depression with the most reported case being moderate depression (55%) followed by severe depression (34%). Only 1% of the sample reported normal depression levels. It was also observed from the analysis that 75% of the patients reported mild to extremely severe anxiety levels. The most reported case is the moderate anxiety (31%) followed by mild anxiety (20%). However, 25% of the glaucoma patients reported normal anxiety levels. On stress levels, 45% of glaucoma patients sampled for the study reported mild to severe stress levels with the most reported case is mild stress (20%) followed by moderate stress levels (16%). However, 55% of glaucoma patients reported normal stress levels.
Hypothesis One: Female glaucoma patients are more likely to report higher depression, anxiety and stress levels than male glaucoma patients.

This hypothesis compares two groups of male and female patients on their levels of depression, anxiety and stress as shown in the Table 4.

Table 4: Summary of Independent t-Test of Gender Differences in the Levels of Depression, Anxiety and Stress

<table>
<thead>
<tr>
<th>Variables</th>
<th>Male (n=62)</th>
<th>Female (n= 38)</th>
<th>t(df= 98)</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>19.35 (SD=4.87)</td>
<td>22.00 (SD=4.70)</td>
<td>2.67</td>
<td>.009</td>
</tr>
<tr>
<td>Anxiety</td>
<td>17.18 (SD=5.55)</td>
<td>20.50 (SD=5.60)</td>
<td>2.90</td>
<td>.005</td>
</tr>
<tr>
<td>Stress</td>
<td>14.13 (SD=6.29)</td>
<td>16.89 (SD=6.20)</td>
<td>2.15</td>
<td>.034</td>
</tr>
</tbody>
</table>

Table 4 above shows that gender of patients has statistically significant effect on their depression levels, t(98) = 2.67, ρ < .05. It was also observed that patients’ gender has significant effect on their anxiety levels at the .05 alpha level, t(98) = 2.90, ρ < .05. It was also observed from the table above that significant gender difference exists between male and female patients in their stress levels, t(98) = 2.15, ρ < .05. The results showed that female glaucoma patients reported higher depression, anxiety and stress levels, thus, the first hypothesis that female glaucoma
patients are more likely to report higher depression, anxiety and stress levels than male glaucoma patients is supported.

**Hypothesis Two:** Younger glaucoma patients are more likely to report higher depression, anxiety and stress levels than older glaucoma patients.

This hypothesis compares three age groups of participants on their depression, anxiety and stress levels. The ANOVA results are summarized in the Table 5;

**Table 5: One-Way ANOVA of Age Differences in Depression, Anxiety and Stress among Glaucoma Patients**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Less than 45yrs</th>
<th>46-60yrs</th>
<th>60yrs &amp; above</th>
<th>F(2,97)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=26)</td>
<td>(n=44)</td>
<td>(n=30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>23.50 (SD=3.98)</td>
<td>19.05 (SD=4.89)</td>
<td>19.57 (SD=4.74)</td>
<td>8.21</td>
<td>.001</td>
</tr>
<tr>
<td>Anxiety</td>
<td>21.85 (SD=3.56)</td>
<td>17.50 (SD=5.12)</td>
<td>16.87 (SD=7.04)</td>
<td>6.98</td>
<td>.001</td>
</tr>
<tr>
<td>Stress</td>
<td>17.69 (SD=5.53)</td>
<td>12.73 (SD=5.51)</td>
<td>16.00 (SD=7.09)</td>
<td>6.73</td>
<td>.002</td>
</tr>
</tbody>
</table>

An examination of the ANOVA Table 5 indicates that significant age differences exist between at least two of the age groups in their levels of depression at the .05 alpha level, $F(2,97) = 8.21$, $p < .05$. Significant age differences exist between at least two of the age groups in their levels of...
anxiety at the .05 alpha level, F (2,97) = 6.98, ρ < .05. It was further observed that significant age differences exist between at least two of the age groups in their patients’ stress levels, F(2,97) = 6.73, ρ < .05. Since there are more than two groups and the three F-ratios are significant; multiple comparisons were computed for levels of depression, anxiety and stress. The summary of the multiple comparisons of the age groups are presented in the Tables 6 to 8;

Table 6: Multiple comparisons of Age Differences in Patients’ Depression using Bonferroni Test

<table>
<thead>
<tr>
<th>Groups</th>
<th>Less than 45years</th>
<th>46-60years</th>
<th>60years &amp; above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 45years</td>
<td>-</td>
<td>4.45*</td>
<td>3.93*</td>
</tr>
<tr>
<td>46-60years</td>
<td>-</td>
<td>-</td>
<td>.52</td>
</tr>
<tr>
<td>60years &amp; above</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*= significant at the .05 alpha level

Results from Table 6 shows that glaucoma patients less than 45 years of age reported higher depression levels than patients between 46 and 60 years (t= 4.45, ρ < .05) and patients who are 60 years and above (t= 3.93, ρ < .05). However, no significant mean difference was observed between patients who are aged 46-60 years and patients of age 60 years and above (t= .52, ρ > .05) in their depression levels.
Table 7: Multiple comparisons of Age Differences in Patients’ Anxiety using Bonferroni Test

<table>
<thead>
<tr>
<th>Groups</th>
<th>Less than 45 years</th>
<th>46-60 years</th>
<th>60 years &amp; above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 45 years</td>
<td>-</td>
<td>4.35*</td>
<td>4.98*</td>
</tr>
<tr>
<td>46-60 years</td>
<td>-</td>
<td>-</td>
<td>.63</td>
</tr>
<tr>
<td>60 years &amp; above</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*= significant at the .05 alpha level

Results from Table 7 shows that glaucoma patients less than 45 years of age reported higher anxiety levels than patients between 46 and 60 years (t= 4.35, ρ < .05) and patients who are 60 years and above (t= 4.98, ρ < .05). However, no significant mean difference was observed between patients who are aged 46-60 years and patients of age 60 years and above (t= .63, ρ > .05) in their anxiety levels.

Table 8: Multiple comparisons of Age Differences in Patients’ Stress using Bonferroni Test

<table>
<thead>
<tr>
<th>Groups</th>
<th>Less than 45 years</th>
<th>46-60 years</th>
<th>60 years &amp; above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 45 years</td>
<td>-</td>
<td>4.97*</td>
<td>1.09</td>
</tr>
<tr>
<td>46-60 years</td>
<td>-</td>
<td>-</td>
<td>3.87*</td>
</tr>
<tr>
<td>60 years &amp; above</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*= significant at the .05 alpha level

Results from table 8 shows that glaucoma patients less than 45 years of age reported higher stress levels than patients between 46 and 60 years (t= 4.97, ρ < .05). No significant mean difference
was observed in stress levels between patients who are less than 45 years and patients who are 60 years and above (t= 1.09, ρ >.05). However, a significant mean difference was observed between patients who are aged 46-60 years and patients of age 60 years and above (t= 3.87, ρ < .05) in their stress levels. Hypothesis two that states younger glaucoma patients are more likely to report higher depression, anxiety and stress levels than older glaucoma patients is supported.

**Hypothesis Three:** *Unemployed glaucoma patients are more likely to report higher depression, anxiety and stress levels than self-employed and employed glaucoma patients.*

The One-Way ANOVA was used to compare the three groups on their depression, anxiety and stress levels. The results are summarized in the Table 9;

**Table 9: Differences in Depression, Anxiety and Stress due to Employment Status of Patients**

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Employed (n=46)</th>
<th>Unemployed (n=42)</th>
<th>Self-employed (n=12)</th>
<th>F(2,97)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>20.91 (SD=5.21)</td>
<td>19.45 (SD=4.44)</td>
<td>21.42 (SD=5.53)</td>
<td>1.27</td>
<td>.29</td>
</tr>
<tr>
<td>Anxiety</td>
<td>18.93 (SD=5.56)</td>
<td>18.33 (SD=6.14)</td>
<td>16.92 (SD=5.45)</td>
<td>.58</td>
<td>.56</td>
</tr>
<tr>
<td>Stress</td>
<td>13.48 (SD=5.75)</td>
<td>16.71 (SD=7.04)</td>
<td>16.33 (SD=4.74)</td>
<td>3.19</td>
<td>.04</td>
</tr>
</tbody>
</table>
An examination of Table 9, the results showed that no statistically significant difference exists in the depression levels among patients who are employed, unemployed and self-employed at the .05 alpha level, \( F(2,97) = 1.27, \rho > .05 \). Employment status of glaucoma patients did not have any statistically significant effect on their anxiety levels, \( F(2.97) = .58, \rho > .04 \). \( F(2.97) = 3.19, \rho < .05 \). Since there are three employment statuses, the multiple comparisons were performed and the results are summarized in the Table 10;

**Table 10: Multiple Comparisons of Differences in Stress due to Employment Status of Patients using Bonferroni**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Employed</th>
<th>Unemployed</th>
<th>Self-employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>-</td>
<td>3.24*</td>
<td>2.86</td>
</tr>
<tr>
<td>Unemployed</td>
<td>-</td>
<td>-</td>
<td>.38</td>
</tr>
<tr>
<td>Self-employed</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* = significant at the .05 alpha level

Analysis of the multiple comparison Table 10 indicates that significant difference exists between only glaucoma patients who are employed and those who are unemployed (\( t= 3.24, \rho < .05 \)). However, no significant mean differences exist between patients who are employed and self-employed (\( t= 2.86, \rho > .05 \)), patients who are unemployed and patients who are self-employment (\( t= .38, \rho > .05 \)). Therefore, the third hypothesis that unemployed glaucoma patients are more likely to report higher depression, anxiety and stress levels than self-employed and employed glaucoma patients is not supported.
Hypothesis Four: Single glaucoma patients are more likely to report depression, anxiety and stress levels than married glaucoma patients.

One-Way ANOVA was used to compare the three groups on their depression, anxiety and stress levels. The results are summarized in the Table 11:

Table 11: Summary of Differences in Depression, Anxiety and Stress due to Patients’ Marital Status

<table>
<thead>
<tr>
<th>Variables</th>
<th>Single (n=8)</th>
<th>Married (n=86)</th>
<th>Divorced (n=3)</th>
<th>Widowed (n=3)</th>
<th>F(3,96)</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>17.75 (SD=4.06)</td>
<td>20.56 (SD=5.07)</td>
<td>22.67 (SD=4.62)</td>
<td>19.33 (SD=2.31)</td>
<td>1.05</td>
<td>.38</td>
</tr>
<tr>
<td>Anxiety</td>
<td>20.50 (SD=4.11)</td>
<td>18.07 (SD=6.01)</td>
<td>22.67 (SD=4.62)</td>
<td>19.33 (SD=2.31)</td>
<td>1.02</td>
<td>.39</td>
</tr>
<tr>
<td>Stress</td>
<td>18.00 (SD=6.68)</td>
<td>14.51 (SD=6.18)</td>
<td>26.00 (SD=6.68)</td>
<td>16.00 (SD=6.00)</td>
<td>4.09</td>
<td>.01</td>
</tr>
</tbody>
</table>

The Table 11 shows that patients’ marital status did not have any significant effect on their depression levels at the .05 alpha level, F(3,96) = 1.05, ρ > .05. Similarly, patients’ marital status did not have any significant effect on their anxiety levels at the .05 alpha level, F(3,96) = 1.02, ρ > .05. However, patients’ marital status had a significant effect on their stress levels at the .05
alpha level, $F(3,96) = 4.09, \rho < .05$. Since the marital status groups were more than two the post-hoc analysis was performed and the results are summarized in the Table 12;

Table 12: Multiple comparisons of differences in Stress levels of Patients due to their Marital Status

<table>
<thead>
<tr>
<th>Groups</th>
<th>Single</th>
<th>Married</th>
<th>Divorced</th>
<th>Widowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>-</td>
<td>3.49</td>
<td>8.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Married</td>
<td>-</td>
<td>-</td>
<td>11.49*</td>
<td>1.49</td>
</tr>
<tr>
<td>Divorced</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.97</td>
</tr>
<tr>
<td>Widowed</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* = significant at the .05 alpha level

A critical analysis of the multiple comparisons Table 12 shows that a significant mean difference exists between married and divorced patients with divorced patients reporting more stress at the .05 alpha level ($t = 11.49, \rho < .05$). No significant mean differences were observed in the other groups in their stress levels at the .05 alpha level. Therefore, the fourth hypothesis that single glaucoma patients are more likely to report depression, anxiety and stress levels than married glaucoma patients is supported.
**Hypothesis Five:** There will be a significant positive relationship between Social Distress and DASS score (Depression, Anxiety and Stress)

To test which hypothesis gives the Pearson correlation was used and the results are summarized in Table 13;

**Table 13: Summary of Pearson Correlation of the relationship between Patients’ Emotional Distress and Social Distress**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Mean</th>
<th>SD</th>
<th>df</th>
<th>r</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Distress (DASS)</td>
<td>53.90</td>
<td>12.34</td>
<td>98</td>
<td>.40</td>
<td>.001</td>
</tr>
<tr>
<td>Social Distress</td>
<td>11.59</td>
<td>4.77</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From Table 13, it was observed that a significant positive relationship exists between the levels of emotional distress and social distress among the patients at the .05 level of significance, $r(98) = .40$, $p = .001$. Therefore, the fifth hypothesis that there will be a significant positive relationship between Social Distress and DASS score (Depression, Anxiety and Stress) is supported.

4.3 Summary of Results

- Glaucoma patients reported significantly higher depression, anxiety and stress levels.
- Female glaucoma patients reported higher depression, anxiety and stress levels than male glaucoma patients.
Younger glaucoma patients reported higher depression, anxiety and stress levels than older glaucoma patients.

No statistically significant differences exist among Glaucoma patients who are Employed, Unemployed and Self-employed in their depression and anxiety levels but differed significantly on their stress levels. No statistically significant differences exist among Glaucoma patients who are Single, Married, Widowed and Divorced in their depression and anxiety levels but differed significantly on their stress levels.

There is a significant positive relationship between patients’ social distress and emotional distress (DASS).
CHAPTER FIVE

DISCUSSION

5.1 Introduction

The main purpose of this study was to highlight the emotional distresses that confront persons living with Glaucoma as the condition has been reported to be on the increase in Ghana. The specific objectives were to determine the level of psychological distress among patients with Glaucoma, to examine the level of specific emotional distress such as depression, anxiety and stress among patients and also to identify demographic variables influencing stress, anxiety and depression amongst people living with Glaucoma. This chapter contains discussion of findings, implication of findings, limitations, recommendations and conclusions.

5.2 Discussion of Findings

5.2.1 Prevalence of Depression, Anxiety and Stress among Glaucoma patients

The present study hypothesized that Glaucoma patients are likely to report higher depression, anxiety and stress levels. Findings from the study showed that Glaucoma patients reported significantly higher depression, anxiety and stress levels with the major psychological problem being depression as majority of patients suffered from mild to extremely severe levels of depression. This means that most individuals living with glaucoma also have co-morbid psychological problems.

This is because glaucoma is a serious condition which can cause blindness and so poses a lot of stress to the individual diagnosed with this condition. The person would have to find ways of
coping with the situation which sometimes results in psychological burdens. As posited by Beck (1996), individuals faced by stressful life situations are likely to engage in maladaptive thinking processes in making meaning to the situation which may result in depression or anxiety. For instance a person diagnosed with glaucoma may be battling with the thoughts of whether he or she could be treated effectively or whether he or she will become blind. This is likely to lead to ruining thoughts about impending blindness which explains why anxiety level is high among these patients. In addition, patients who have started losing their sight are likely to be depressed about their inability to do certain things they could hitherto do.

Moreover, from the General Adaptation Syndrome (GAS) point of view which was developed by Selye (1976) every stressful event leaves an effect on the individual. Diagnosis of a serious condition such as glaucoma is no small stress. This is likely to place a lot of demands on both the biological and psychological coping systems of the individual. This explains why level of stress was high among the sample used in this study.

However the level of stress depends on the availability of effective coping resources, which implies that the coping resources determine the level of stress the individual experiences. Secondly, the severity of the stressful event may also play a part on the level of stress. This explains why in this study, though all the participants had glaucoma, 45% had normal stress level while 55% had mild to extremely severe levels of stress and the predominant level of stress experienced by these patients was mild.

Findings from the present study are consistent with previous studies which reported that glaucoma has a negative impact on the emotional/psychological health and quality of life of patients (Fasih et al., 2010; Kong et al., 2013; Pappa et al., 2006; Tastan et al., 2010; Wu et al.,
The findings are however inconsistent with findings from Wilson et al.’s (2002) study which found no significant difference in psychological distress between glaucoma patients and healthy controls.

5.2.2 Demographic Determinants of Depression, Anxiety and Stress among Glaucoma Patients

The Role of Gender

It was hypothesized that Female glaucoma patients are more likely to report higher depression, anxiety and stress levels than male glaucoma patients. The results showed that female glaucoma patients reported higher depression, anxiety and stress levels than their male counterparts.

Generally, females are reported to experience higher levels of psychological distress compared to their male counterparts (Kessler, McGonagle, Swartz, Blazer, & Nelson, 1993). This may be due to fact that women have less power in society than men especially in patriarchal societies such as Ghana, which make them more likely to experience certain stressful life events and traumas such as extreme poverty, sexual abuse, harassment and discrimination at the workplace among others. These circumstances pose additional stress and puts strain on the psychological health of women. Therefore, being diagnosed with glaucoma may have a cataclysmic effect on women; making them experience higher psychological impact of the condition than men as stressful experiences are found to have reciprocal effects on each other (Nolen-Hoeksema, 2001).

According to Breslau, Davis, Andreski, Peterson, and Schultz, (1997), even when men and women experience same stressors, women are more likely than men to experience greater
emotional distress because of gender differences in biological responses to stressors, self-concepts and coping styles (Nolen-Hoeksema, 2001).

The finding in this study is consistent with Zhou et al.’s (2013) study which found the female gender as one of the risk factors associated with high prevalence of anxiety among glaucoma patients. Tastan et al., (2010) also found similar gender differences such that the anxiety risk in women with glaucoma was found to be 7.5 times higher than in men.

5.2.3. Age Differences

One of the hypotheses of this study was that younger glaucoma patients are more likely to report higher depression, anxiety and stress levels than older glaucoma patients. Results revealed that, younger glaucoma patients reported higher depression, anxiety and stress levels than older glaucoma patients. It is reported that many older glaucoma patients experienced prolonged sense of hopelessness as many may have suffered treatment failures in the past (Dawoda, et al., 2004), this is likely to result in greater experience of emotional distress than younger patients.

Having a disability or a chronic illness in old age can be very devastating as the elderly already have certain stresses associated with coping with the general decline in physical, psychological and cognitive functioning (Oles & Oles, 2014). Dealing with glaucoma therefore puts additional strain on their already diminished coping resources which is likely to make them susceptible to psychological problems such as depression, anxiety as well as elevated levels of stress.
In addition, older adults are likely to have other disabilities and physical illnesses aside the eye condition than younger adults which may have a culminating effect on their psychological health. This supports findings from previous studies which found age-related differences in the experience of depression, anxiety and stress among glaucoma patients (Dawoda et al., 2004; Skalicky & Goldberg, 2008; Zhou et al., 2013).

There is however a suggestion that, age-related differences observed among glaucoma patients may not necessarily be linked with their condition but rather other biological factors (Eramudugolla et al., 2013). Some studies also found younger age rather being a risk factor for anxiety (Mabuchi et al., 2012; Zhou et al., 2013) which is contrary to the present finding.

5.2.4. The Role of Employment Status

It was also hypothesized that unemployed glaucoma patients are more likely to report higher depression, anxiety and stress levels than self-employed and employed glaucoma patients. Findings revealed that no statistically significant differences exist among Glaucoma patients who are employed, unemployed and self-employed in their depression and anxiety levels but differed significantly on their stress levels.

Economic burden has been found to be one of the risk factors for depression and anxiety among glaucoma patients (Zhou, 2014), which may suggest that people who are employed thus those who have a stable source of income would be less vulnerable to depression and anxiety compared to their unemployed counterparts. However the results of this study disconfirm this assertion as no significant difference was found between employed and unemployed individuals.
This could be as a result of the fact that glaucoma treatment is very expensive and even those who are employed still experience high economic burden associated with the condition. Hence an individual’s employment status may not be strong enough to cushion him/her from the impact economic burden puts on their psychological health. Dawoda et al., 2004 also did not find employment status to be significantly associated with psychological distress; only education had a significant correlation with depression and anxiety. On the other hand, employed individuals experienced less stress compared to unemployed individuals. This may be because employed patients may have a bigger social network from other employees, which could be an effective coping resource to help them deal with their stressors.

5.2.5. Marital Status and depression among people with Glaucoma

Another hypothesis was that single glaucoma patients are more likely to report higher depression, anxiety and stress levels than married glaucoma patients. It was found out that No statistically significant differences exist among glaucoma patients who are single, married, widowed and divorced in their depression and anxiety levels but differed significantly on their stress levels.

Researchers have reported higher depression and anxiety levels among unmarried glaucoma patients than married ones (Tastan et al., 2010). This was however not the case in the current sample. This is probably because majority of the participants were married and very few were single and divorced, so the effect of marital status on depression and anxiety could not be detected.
Moreover, the ability for marital status to protect individuals from depression and anxiety is dependent on the quality of the marital relationship. It is possible the condition of married glaucoma patients maybe putting a burden on their relationship and hence their marriage may not provide the protective shield from emotional distress.

Nonetheless married patients experienced less stress than divorced patients. This is consistent with Tastan et al.’s (2010) finding. Most divorced individuals end up as single parents which pose a lot of stress. Being divorced is also a stressful life event which causes additional stress for the divorced individual apart from having to deal with the diagnosis of glaucoma.

5.2.6. The relationship between Patients Emotional distress and Social Distress

The results showed that the final hypothesis which stated that there will be a significant positive relationship between Social Distress and DASS score (Depression, Anxiety and Stress) is supported. This means that as patients with Glaucoma experiences higher social distress associated with their condition in the form of stigmatization, loss of job, and difficulty in meeting the needs of the family among others, their level of emotional distress in the form of depression, anxiety and stress also increases. This significant relationship between Glaucoma patients’ social distress and emotional distress could be due to the fact that the illness places a lot of limitations of the individual which he/she must deal with.

However, when the individual appraises the situation and realizes that there are limited resources available to him or her to deal with the condition, he/she may experience heightened emotional distress in the form of depression, anxiety and stress. This finding is consistent with previous research among persons with an eye problem who reported significant decrease in their quality of
life and elevated levels of depression, anxiety and stress. For instance, Wu, et al. (2010) observed that Glaucoma patients’ main concern was ‘learning to living with it’ and have identified coping with daily tasks, living with future uncertainty, and adapting to a decline in life quality as some of the major themes in their study. The uncertainties associated with living with glaucoma and decline in quality of life have been significant influence on the level the emotional wellbeing of patients.

5.3 Implications of Study

The findings of the present study are that apart from the physical disability glaucoma patients are faced with, they also experience high levels of depression, anxiety and stress. Secondly, female patients’ psychological health is affected more by their condition than their male counterparts. In addition, employment status does not significantly shield glaucoma patients from depression and anxiety but influences their stress levels. Similarly, marital status does not influence the level of depression and anxiety experienced by glaucoma patients. However, married individuals experience lower stress levels.

5.4 Limitations

Though this study has revealed very important findings as well as paved way for future studies, it is not without limitations.

The study employed self-reported measures which relied solely on the accuracy of the information provided by respondents. This makes it difficult to ascertain whether the reported levels of depression, anxiety and stress by the patients actually represent objective experiences of these psychological states.
Further, the study limited the sample of the study to two hospitals which are not public hospitals. This means that the findings cannot be generalized to patients attending other health facilities.

These notwithstanding, the reliability and relevance of the findings of the study cannot be disputed. The study makes very relevant contribution to what is known about glaucoma patients in Ghana and sets the pace for more research in that area.

5.5 Recommendations

Based on the findings of this study that glaucoma patients experience co-morbid psychological distress, it is recommended that an integrative approach is used in the treatment of glaucoma patients. This integrative approach should include psychiatric/psychological evaluation and treatment rather than just focusing on medical treatment of the condition.

In addition, as glaucoma poses additional stress to the individual which results in high levels of stress among patients, it is recommended that patients are taught effective coping skills by the health personnel and the counselors to deal with their condition as well as effective stress management strategies to help patients deal with other stressors in their lives.

It is also recommended that female glaucoma patients be given special attention by health personnel and counselors, as they seem to be the worst affected by stressors arising from glaucoma.

Future studies should expand the study by including patients from other health facilities and regions. Also, a longitudinal study in which patients will be studied over a period of time may be best suited in fully determining the psychological impact of glaucoma. This will enable multiple
assessment of psychological health among these patients as the disease progresses; hence provide evidence as to changes arising in the psychological health of patients linked to the condition.

5.6 Conclusions

The present study aimed at studying the emotional distress experienced by people living with glaucoma as well as the role of demographic characteristics in these emotional distresses. The results indicate that glaucoma patients experience high levels of depression, anxiety and stress. Gender was found to influence depression, anxiety and stress levels among patients. Employment status and marital status did not predict levels of depression and anxiety but had an effect on the level of stress experienced by patients.

This implies that co-morbid psychological distress exist among many glaucoma patients which need to be addressed. More over the economic burden of glaucoma among patients may be so great that even having an employment does not shield a patient from its impact on their emotional states. It however, may provide additional resources for coping with stress. Furthermore, being diagnosed with glaucoma may put strain on the relationship of married patients, resulting in poor quality of the relationship. Therefore married patients will experience similar levels of emotional distress as the unmarried ones since being married does not protect them.

Psychiatric/psychological treatment is therefore recommended for patients with glaucoma and a special attention need to be paid to female patients. Future studies can also expand on this study by including other health facilities.
REFERENCES


Scher, C. D., Ingram, R. E., & Segal, Z. V. (2005). Cognitive reactivity and vulnerability: 
Empirical evaluation of construct activation and cognitive diathesis in unipolar 

reactivity to sad mood provocation and the prediction of depressive relapse. *Archive of 
General Psychiatry, 63*, 749-755.


Free Press.

Shih, R. A., Glass, T. A., Bandeen-Roche, K., Carlson, M. C., Bolla, K. I., Todd, A. C., & 
Schwartz, B. S. (2006). Environmental lead exposure and cognitive function in 

Skalicky, S., & Goldberg, I. (2008). Depression and Quality of Life in Patients With Glaucoma: 
A Cross-sectional Analysis Using the Geriatric Depression Scale-15, Assessment 
of Function Related to Vision, and the Glaucoma Quality of Life-15. *Journal of 
Glaucoma, 17*(7), 546-551

Turkish patients with glaucoma. *Psychological Report, 106*(2), 343-357.


Dear respondent,
This questionnaire is strictly meant for academic purpose. The responses you give will therefore be kept confidential. Please endeavor to give the right and appropriate responses to each question posed. Your responses will be put with those of many others in order to help in the understanding of the topic of this study.

Section A: Demographic Information/ Personal Data
Please answer all questions in this section. Please tick (√) where applicable

1. Age:  
   1. less than 40 [ ]  
   2. 41 – 45 [ ]  
   3. 46 – 50 [ ]  
   4. 51 – 60 [ ]  
   5. 60+ [ ]

2. Gender:  
   1. Male [ ]  
   2. Female [ ]

3. Marital Status:  
   1. Single [ ]  
   2. Married [ ]  
   3. Divorced [ ]  
   4. Widowed [ ]

4. Level of Education:  
   1. Primary [ ]  
   2. Secondary [ ]  
   3. Polytechnic [ ]  
   4. University [ ]  
   5. Post-graduate [ ]  
   6. Diploma [ ]

5. Occupational Status:  
   1. Employed [ ]  
   2. Unemployed [ ]  
   3. Self employed [ ]

6. Religious Status:  
   1. Christian [ ]  
   2. Muslim [ ]  
   3. Traditional Believer [ ]  
   4. Eastern Religion [ ]
Section B:

Please read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to you over the past week. Please Circle where applicable. 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 the time  
3 - Applied to me very much, or most of the time

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<tr>
<th></th>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>I was aware of dryness of my mouth</td>
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<tr>
<td>2</td>
<td>I couldn't seem to experience any positive feeling at all</td>
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<tr>
<td>3</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
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<tr>
<td>4</td>
<td>I found it difficult to work up the initiative to do things</td>
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<td>5</td>
<td>I tended to over-react to situations</td>
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<td>6</td>
<td>I experienced trembling (eg, in the hands)</td>
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<td>7</td>
<td>I felt that I was using a lot of nervous energy</td>
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<td>8</td>
<td>I was worried about possible situations in which I might panic and make a fool of myself</td>
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<tr>
<td>9</td>
<td>I felt that I had nothing to look forward to</td>
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<tr>
<td>10</td>
<td>I found myself getting stressed out</td>
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<tr>
<td>11</td>
<td>I found it difficult to relax</td>
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<tr>
<td>12</td>
<td>I felt depressed</td>
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<tr>
<td>13</td>
<td>I was upset about anything that kept me from getting on with what I was doing</td>
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<tr>
<td>14</td>
<td>I felt I was anxious</td>
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<tr>
<td>15</td>
<td>I was unable to become excited about anything</td>
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<tr>
<td>16</td>
<td>I felt I wasn't worth much as a person</td>
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<tr>
<td>17</td>
<td>I felt that I was rather impatient</td>
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<tr>
<td>18</td>
<td>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)</td>
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</tbody>
</table>
SECTION C

Please read each statement and tick a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no wrong or right answers.

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

<table>
<thead>
<tr>
<th></th>
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<th>0</th>
<th>1</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>I feel I have low self-esteem</td>
<td></td>
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<tr>
<td>2</td>
<td>I feel I will have financial problems</td>
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<tr>
<td>3</td>
<td>I feel I will lose my job</td>
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<tr>
<td>4</td>
<td>I feel my children will have to stay out of school to take me to the hospital</td>
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<tr>
<td>5</td>
<td>I feel I will be stigmatized</td>
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<tr>
<td>6</td>
<td>I feel my company will shun me, if they find out I have glaucoma</td>
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<tr>
<td>7</td>
<td>I feel bad that it is a lifetime condition</td>
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<tr>
<td>8</td>
<td>I feel it will affect my lifestyle</td>
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<tr>
<td>9</td>
<td>I feel it will affect my sight</td>
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<tr>
<td>10</td>
<td>I feel the cost of treatment will be too high</td>
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THE DIRECTOR
COCOA CLINIC
ACCRA

Dear Sir/Madam

LETTER OF INTRODUCTION-VERONICA MAWULI ESHUN

The bearer of this letter is a student of Methodist University College Ghana pursuing a Master of Arts Degree in Guidance and Counseling.

As part of her requirements for graduation, she is to submit a thesis on the topic “Psychosocial Experiences of Patients Diagnosed with Glaucoma”.

She would need some information from your institution to help her complete this exercise. It would be appreciated if you could give her the necessary assistance she may require.

Yours faithfully,

PROF. J.B. OFOSU
DEAN, FACULTY OF SOCIAL STUDIES

“In all these things we are more than Conquerors” (Romans 8:37)