UNIVERSITY OF CAPE COAST

# PSYCHOLOGICAL DISTRESS, RESILIENCE, SOCIAL SUPPORT AND HELP-SEEKING BEHAVIOURS IN PATIENTS WITH TYPE II DIABETES, BREAST CANCER AND HYPERTENSION

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BY

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Thesis submitted to the Department of Education and Psychology of the Faculty of Educational Foundations, College of Education Studies, University of Cape Coast, in partial fulfillment of the requirements for the award of Master of Philosophy degree in Clinical Health Psychology

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DECLARATION

**Candidate's Declaration**

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature…….. Date……

Name: ……..

**Supervisors' Declaration**

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision laid down by the University of Cape Coast.

Principal Supervisor's Signature…….……..…….. Date……

Name: ……..

Co-Supervisor's Signature……..……...…….. Date……

Name: ……..

## ABSTRACT

Recent research suggests that there is a changing pattern in the illness from infectious or acute diseases to more chronic health conditions; this leads to emotional and psychological problems. Having psychological problems impairs an individual's ability to be resilient in the face of adversity. However this has been ignored by research. The purpose of this study was to examine psychological distress and resilience in patients with specific chronic diseases: Type 2 diabetes, breast cancer, and hypertension. The study also focuses on exploring the major help-seeking behaviours that prevent patients from seeking psychological support. Using the stratified sampling technique, the study sample 83 Type 2 diabetes, 43 breast cancer and 88 hypertensive patients form the Cape Coast Teaching Hospital. Participants answered a 46 item questionnaire that measured psychological distress, resilience, social support as well as help-seeking behaviours of patients. Severe psychological distress was prevalent in half of the sample while over a third of participants reported low resilience. Resilience was significantly and negatively correlated with psychological distress and social support did not moderate this relationship. Differences were found in both psychological distress and resilience based on type of disease. Also a difference was found in resilience based on employment status but on level of education. It was concluded that patients with chronic conditions are likely to develop psychological and emotional problems and this affects their ability to cope with their condition. It was recommended that treatment should adopt a holistic (Biopsychosocial) approach.

KEY WORDS

Chronic diseases

Help-seeking behaviours

Patients

Psychological distress

Resilience

Social support

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DEDICATION

To my mother

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# LIST OF ACRONYMS

| | |
|---|---|
| CCTH- | Cape Coast Teaching Hospital |
| CDC- | Center for Disease Control and Prevention |
| CHIM- | Centre for Health Information Management |
| DM- | Diabetes mellitus |
| GDM- | Gestational Diabetes Mellitus |
| HADS- | Hospital Anxiety Depression Scale |
| IARC- | International Agency for Research on Cancer |
| IDF- | International Diabetes Federation |
| MMDT- | Merck Manual of Diagnosis and Therapy |
| NCD- | Non-Communicable Disease |
| NIDDK- | National Institute for Diabetes and Digestive and Kidney Disease |
| NIHCE- | National Institute for Health and Care Excellence |
| NIMH- | National Institute of Mental Health |
| WHO- | World Health Organization |

# CHAPTER ONE

# INTRODUCTION

This study essentially aims at assessing psychological distress and resilience among individuals with chronic health conditions. The study looks at only three categories of chronic diseases: Cancer, Diabetes and Hypertension because they are amongst the most common chronic diseases in Ghana (Agyei-Mensah & Aikins, 2010). Various research studies point out that chronic health conditions often lead to psychological problems such as major depression and anxiety (Goldberg, 2010). However, many individuals with these chronic health problems seek for only physical or medical treatment for their condition but would hardly seek psychological help.

## Background to the Study

Recent research and epidemiological studies suggest that there is a changing pattern in the illness from infectious or acute diseases to more chronic health conditions such as cancer, diabetes, hypertension, obstructive pulmonary disease among other severe chronic conditions (Bury, 2013). These chronic conditions are basically as a result of unhealthy lifestyle choices. Chronic diseases are defined by World Health Organization (WHO) as conditions of ill health that accompany the individual for a long period of time, produce incapacity, or residual disability caused by irreversible pathological alterations, demand rehabilitation, and follow-up over a long time, and may present periods of improvement and periods of worsening in acute stages (Barros, César, Carandina, & Torre, 2006). Researchers have

pointed out that seven out of ten consultations held in primary care concern chronic diseases (Veale, 2003) and therefore, their management has assumed an important role (Chapman, Perry, & Strine, 2005). Chronic diseases have assumed an increasingly important role in public health research and intervention. A major priority of health care policies during the 21st century is improving care and quality of life for people with chronic diseases (Sfyrkou, 2015). Because this current study focuses on cancer, diabetes and hypertension, information on the prevalence of these three conditions worldwide, sub-Saharan Africa and Ghana are provided.

Cancer arises from the transformation of normal cells into tumour cells in a multistage process that generally progresses from a pre-cancerous lesion to a malignant tumour (WHO, 2018). These changes are the result of the interaction between a person's genetic characteristics and three categories of external agents, which are: physical carcinogens, such as ultraviolet and ionizing radiation; chemical carcinogens, such as asbestos, components of tobacco smoke, aflatoxins (food contaminants), and arsenics (drinking water contaminants); and biological carcinogens, such as infections from certain viruses, bacteria, or parasites (Plummer, de Martel, Vignat, Ferlay, Bray & Franceschi, 2016; WHO, 2018). Cancer is the second leading cause of death globally, and was responsible for 8.8 million deaths in 2015. Globally, nearly 1 in 6 deaths is due to cancer (WHO, 2018). Approximately 70% of deaths from cancer occur in low and middle-income countries. Around one third of deaths from cancer are due to the five leading behavioural and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use (WHO, 2018). According to the American

Cancer Society (2011) as cited in Olsen (2015), approximately 33% of global cancer cases are recorded in sub-Saharan Africa. Also, in sub-Saharan Africa cancer is the seventh most common cause of death with breast cancer leading (American Cancer Society, 2011). Outdoor air pollution and increased exposure to carcinogenic contaminants from occupational risks and increased industrial production in urban settings are also expected to be major players in rising cancer rates throughout the African continent (NCD Alliance, 2012). In Ghana, cancer is ranked the fourth most common cause of death and about 16,000 new cases of cancer occur in the country annually, with liver, breast, cervical and prostate, being the leading types. Moreover, cancer is the fastest growing non-communicable disease (NCD) in the world today, owing to several factors such as lifestyle, obesity and the lack of physical exercises or activity, among other factors (Graphic Online, 2016).

The next chronic condition being looked at in this study is diabetes. Diabetes is a group of metabolic disorders in which there are high blood sugar levels over a prolonged period (WHO, 2014). Diabetes is due to either the pancreas not producing enough insulin or the cells of the body not responding properly to the insulin produced (Shoback & Gardner, 2011). According to WHO (2014) there are three main types of diabetes: Type 1 diabetes results from the pancreas's failure to produce enough insulin. This form was previously referred to as insulin-dependent diabetes mellitus. The cause is unknown (WHO, 2014). The next type is Type 2 diabetes which begins with insulin resistance, a condition in which cells fail to respond to insulin properly. As the disease progresses a lack of insulin may also develop (WHO, 2014). The most common cause is excessive body weight and insufficient exercise.

Recent studies conducted by a number of Swedish and Finnish researchers including Emma Ahlqvist, Petter Storm, Annemari Käräjämäk Tiinamaija Tuomi, Anders Rosengren and Leif Groop using 15,000 participants across Sweden and Finland suggests that there are four subtypes of Type 2 diabetes which have distinct characteristics. This suggests that people with Type 2 diabetes might be affected by their diabetes in different ways and benefit from different treatments. Of the four subtypes of Type 2 diabetes, they found the more common two were linked to older age or being overweight. The other two less common types were linked to a higher risk of diabetes-related complications (Ahlqvist et al., 2018). Gestational diabetes is the third main form, and occurs when pregnant women without a previous history of diabetes develop high blood sugar levels (WHO, 2014). Diabetes has no known cure. Globally, an estimated 422 million adults are living with diabetes mellitus, according to the latest 2016 data from the World Health Organization (WHO, 2016a). Type 2 diabetes makes up about 85 to 90% of all cases and an increase in the overall diabetes prevalence rates largely reflect an increase in risk factors for Type 2, notably greater longevity and being overweight or obese. International Diabetes Federation (IDF) estimates that 14.2 million are living with diabetes in Africa. The region of Africa has the highest percentage of undiagnosed diabetes cases reaching 66.7%, highest proportion of diabetes mellitus related mortality and the lowest health expenditure spent on diabetes (IDF, 2015). The increase in incidence in developing countries follows the trend of urbanization and lifestyle changes, including increasingly sedentary lifestyles, and less physically demanding work. The Ghana Diabetes Association conducted a screening on selected urban areas and estimated that

there are about 4 million diabetics in Ghana. Statistics show that in 2015 alone, a total of 266,200 cases were recorded in Ghana. Furthermore, 518,400 cases of diabetes were recorded in 2017 (IDF, 2018). According to statistics by the World Health Organization (WHO), Ghana has been ranked sixth among other Africa countries on diabetes between 2016 and 2017 (Myjoyonline.com, 2017). This shows that diabetes is a condition that Ghana has been battling with in recent years.

Another chronic health condition under focus in this study is hypertension, also known as high blood pressure. Hypertension is a long-term medical condition in which the blood pressure in the arteries is persistently elevated (Naish & Court, 2014) and usually does not cause symptoms (CDC, 2015). Long-term hypertension, however, is a major risk factor for coronary artery disease, stroke, heart failure, atrial fibrillation, peripheral vascular disease, vision loss, chronic kidney disease, and dementia (Lackland & Weber, 2015). Hypertension (high blood pressure) is classified as either primary (essential) high blood pressure or secondary high blood pressure (Poulter, Prabhakaran & Caulfield, 2015). About 90 to 95% of cases are primarily, defined as hypertension due to nonspecific lifestyle and genetic factors (Carretero & Oparil, 2000; Poulter et al., 2015). Lifestyle factors that increase the risk include excess salt in the diet, excess body weight, smoking, and alcohol use (CDC, 2015; Poulter et al., 2015). The remaining 5 to 10% of cases are categorised as secondary hypertension, defined as high blood pressure due to an identifiable cause, such as chronic kidney disease, narrowing of the kidney arteries, an endocrine disorder, or the use of birth control pills (Poulter et al., 2015). As of 2014, approximately one billion

adults or 22% of the population of the world have hypertension, it is slightly more frequent in men, (WHO, 2016b) and in those of low socioeconomic status, and it becomes more common with age (Kearney, Whelton, Reynolds, Muntner, Whelton & He, 2005). It is common in high, medium, and low income countries (Kearney et al., 2005; WHO, 2016b). In 2004 rates of high blood pressure were highest in Africa, (30%) and lowest in the Americas (18%) (Kearney et al., 2005). In 2016 rates in Africa were about 45% (Oyedele, 2018). The prevalence of hypertension in Ghana has increased steadily over the last two decades with more than ten-fold increase in reported new cases of the disease in public facilities, thus, from 49,087 in 1988 to 505,180 in 2007 (CHIM, 2008). Recent studies in Ghana however, showed the prevalence of hypertension to be from 25% to 48%, with the prevalence higher in urban populations than in rural populations (Solomon et al., 2017). The information provided on the prevalence chronic conditions under study suggest that cancer, diabetes and hypertension are on the increase in Ghana. This also means that psychological problems such as psychological distress related to these aforementioned health conditions are also on the increase because such condition cannot be treated or cured but only be managed (Chapman et al., 2005).

Psychological distress is a general term that is used to describe unpleasant thoughts and emotions that impacts an individual's level of functioning negatively (Sue, Sue & Sue, 2006; Krause & Corts, 2012). Psychological distress is often applied to the undifferentiated combinations of symptoms ranging from depression and general anxiety symptoms to personality traits, confused emotions, hallucination, rage, functional

disabilities and behavioural problems (Drapeau, Marchand, & Beaulieu-Prevost, 2012). Psychological distress often develops in an individual as a result of stressors from the environment. Also, stressors that occur outside of the context of specific roles (e.g., chronic health problems bereavement, stress, lack of sleep, use of drugs or alcohol, assault, abuse, accident or poor social support) are felt to impact on the psychological well- being only if they disrupt social roles (Drapeau et al., 2012). In assessing psychological distress in cancer patients Zabora, Brintzehofeszoc, Curbow, Hooker and Piantadosi (2001) using 4496 cancer patients in United States of America found that the overall prevalence rate of psychological distress for their sample was 35.1%. This shows that almost half of individuals with cancer suffer psychological distress which is characterized by extreme anxiety, depression and other psychological problems. Also, a related nationwide study in Italy by Grassi, Johansen, Annunziata, Capovilla, Costantini, Gritti, Torta and Bellani (2013) using 1108 participants showed that 35% of cancer patients scored high oh the Hospital Anxiety Depression Scale (HADS) which means the 35% of individuals with cancer suffer high levels of psychological distress.

Research suggests that there are certain emotional and psychological problems related to the development of diabetes and other chronic condition (Snoek, Pouwer, Welch & Polonsky, 2000). Diabetes-related emotional distress include irritable mood while psychological prblems related to diabetes include depressive and anxiety disorders as well as suicidal ideation; all related to psychological distress (Snoek et al., 2000). Studying cognitive dysfuntion and psychological distress among type 2 diabetes patients Brands, Van Den Berg, Manschot, Biessels, Kappelle, Haan and Kessels (2007) found

high levels of cognitve dysfunction and psychological distress characterized by clinical depression among the study participants. A study into the prevalance of psychological distress among elderly hyertensive patients revealed that 18% of elderly hypertensive patients have high levels of psychological distress (Ringoir, Pedersen, Widdershoven, & Pop, 2014). These research findings confirm the fact that chronic health conditions are often accompanied by different forms of psychological problems. The psychological distress that arise when an individual has a chronic health condition are mostly due to deteriorating health status, continous use of medication and idea that the chronic health condition may linger until death or may lead to death (Chapman et al., 2005).

Inasmuch as this study assesses psychological distress in individuals with chronic diseases, it also assesses resilience in these individuals as well. Resilience is positive human quality and can be thought of as a process of successfully adapting to maintain or regain emotional well-being in the face of adversity (Trivedi, Bosworth, & Jackson, 2011). It does not mean that distress is not experienced; rather, it is a process through which an individual's thoughts and behaviors overcome distress and optimise positive outcomes (Trivedi et al., 2011). Resilience is not a general structure for all life areas but rather a personal, cultural, dynamic, and background-dependent phenomenon. People may not demonstrate resilience to all life events or aspects but only to specific situations. That is, people may be resilient to specific threats and vulnerable to others (Tusaie & Dyer, 2004). Resilience is one way to respond to stress, allowing the individual to adapt to various stressors, such as injuries, threats, tragic events, interpersonal and family problems, financial problems,

work (employment) and health-related problems, and diseases. The aim of resilience is to reduce the negative effects of the stressor (Reis, Colbert & Hébert, 2004). Studies on resilience in individuals with chronic diseases show confliciting results. A meta-analysis by Gheshlagh, Sayehmiri, Ebadi, Dalvandi, Dalvand and Tabrizi (2016) shows that cancer patients have a higher level of resilience than individuals with cardiovascular disease and patients with other diseases. The results from the meta-analysis suggest that apparently, the more lethal the disease, the higher the patients' resilience to reduce the negative effects of the disease. Resilience, together with feelings of control and capability, make patients feel that they have control over the disease and that they are capable of taking medicine and preserving their own therapeutic diet (Gheshlagh et al., 2016). Meanwhile, other studies suggest that levels of resilience are significantly low in individuals with chronic diseases regardless of the nature or kind of disease (Amirpour, 2014). Resilience shows the way of healthier life to patients, so that they become more adapted to changes in their life and more eager to take part in treatment programmes (Faria, Revoredo, Vilar & Chaves, 2014). Given that progress of the symptoms may cause negative effects on mental health and higher vulnerability to the disease in turn, resilience is an effective way to deal with the pressure caused by the disease (Cal, Sá, Glustak & Santiago, 2015). Though resilience is a positive quality that enhances positive affect, health and psychological well-being, individuals with chronic health conditions may have difficulty in developing this quality due to continuous deterioration of health status and may increase the negative effect of the chronic disease.

Resilience has been studies in different contexts and it is known that various factors affect resilience (Resnick, Gwyther, & Roberto, 2011). Resnick et al. (2011) suggests that some factors that influence resilience include intrinsic and extrinsic motivation, social support, positive outlook and optimism as well as personal characteristics. A number of studies suggest that resilience is somewhat low in individuals with chronic health conditions such as cancer and chronic kidney disease (Eicher, Matzka, Dubey & White, 2015) and this could be due to the inability to cope with these conditions. However research into psychological problems and resilience related to the development of a chronic health condition reveal that higher levels of resilience is associated with lower levels of psychological distress (Min, Yoon, Lee, Chae, Lee & Song, 2013; Cuhadar, Tanriverdi, Pehlivan, Kurnaz & Alkan, 2016). Other studies on the various factors that may interact to help in building resilience suggest that socio-demographic factors can have positive or negative influence on resilience in people with chronic diseases (Newton-John, Mason & Hunter, 2014). Böell, Silva and Hegadoren (2016) studied the relationship between socio-demographic factor and their influence on resilience in 603 patients with Type 2 diabetes and chronic kidney disease and concluded that marital status, age and employment status can affect resilience positively.

In relation to help seeking behaviours towards psychological treatment, thousands of individuals with chronic health conditions could benefit from psychological treatment but delay getting help for many years, or simply go without any treatment at all (Wang, Berglund, Olfson, Pincus, Wells & Kessler, 2005). Literature suggest that it is these help seeking behaviours that

serve as barriers that prevent individual from getting psychological assistance or support from professionals (Krause & Corts, 2012). A nationwide study shows that more than one-third of all U.S adults with diagnosable disorder do not receive treatment (NIMH, 2011). The question is that why have so many individuals who need psychological treatment gone without it? Researchers have begun to focus on help-seeking behaviours that serve as barriers to treatment and what normally comes up are financial, cognitive, cultural, minimalization and misunderstanding of psychological problems and other factors that prevent individuals from seeking and receiving psychological therapy (Krause & Corts, 2012). Thus it is imperative to understand these help-seeking behaviours of patients in order to help determine how they form barrier and find various ways to help individual with and without chronic diseases to overcome these barrier and seek professional psychological help.

In this study, social support is one of the main variables of interest because the study focuses of psychological distress and resilience among patients with chronic diseases. However research into the factors that help in developing resilience suggest that social support is essential in coping with adverse situations. Numerous studies indicate social support is essential for maintaining physical and psychological health. The harmful consequences of poor social support and the protective effects of good social support in chronic physical and psychological illness have been well documented. Ozbay, Johnson, Dimoulas, Morgan III, Charney and Southwick (2007) suggest that social support may moderate environmental vulnerabilities and influence resilience to stress. Thus social support has been built into this study as

another variable that may moderate the relationship between psychological distress and resilience.

The literature and information provided point out that the probability of developing psychological distress while having a chronic physical health condition such as cancer, diabetes or hypertension is very high (Chapman et al., 2005). This is largely due to inability to cope with dwindling health status and how an individual evaluates the impact or effect of the disease. Also research suggest that resilience among individuals with chronic health conditions are significantly low and the lack of resilience may lead to further psychological problems is individuals with chronic diseases (Amirpour, 2014). Again, there is the need to explore the various barriers that prevent individuals with chronic diseases from seeking psychological help. Due to these reasons, it is imperative to conduct this study to assess psychological distress and resilience in individuals with chronic disease and also find out the behaviours that barriers that prevent these vulnerable individuals from seeking psychological help.

**Statement of the Problem**

As the management of chronic diseases has assumed an increasingly vital role in health care delivery, recognition of the importance of psychological disorders related to chronic diseases have also grown (Nugent, 2008). By 2030, psychological problems such as psychological distress, personality disorders, depressive disorders and others are expected to be second only to heart disease as a source of the global burden of disease (Chapman et al., 2005). As chronic disease and psychological distress are increasingly recognized as major impediments to health, understanding the

connection between them becomes of utmost importance to providing quality health care. Despite the growing recognition of the importance of both chronic disease and depressive disorders to the health of individuals and communities, research examining their interrelationship has been the subject of surprisingly little empirical review. A large number of studies focus on the medical aspect of treating these patients, with less attention paid to psychological distress these patients have to endure (Rosenberg, Curhan & Sheridan, 2014). Previous medical research has also thoroughly documented the medical burden of chronic disease measured as multimorbidity for these patients (Boyd, Leff, Weiss, Wolff, Clark & Richards, 2010). In addition, research conducted by White and McDonell (2014) suggests that exploring the amount of psychological distress that patients with chronic diseases endure is of vital importance in order to promote better treatment outcomes. Psychological distress has not been thoroughly addressed as a problem among individuals with chronic cancer, diabetes and hypertension in Africa and more specifically Ghana. This is probably the case because the majority of the studies on patients with these conditions conceptualise psychological distress in terms of disorder, mostly depressive disorder and stress (Sfyrkou, 2015), thus there is the need to conceptualise psychological distress holistically.

Furthermore, there is growing interest in the potential influence of resilience on health, (Friendli, 2009) and major international bodies, such as the Economic and Social research Council in the UK, consider it an important factor for lifelong health and well-being (Medical Research Council, 2010). There are studies that have suggested that resilience has an impact on the treatment of diverse chronic diseases, such as systemic lupus erythematosus,

diabetes, rheumatoid arthritis, juvenile idiopathic arthritis among others (Cal & Santiago, 2013). It is well known to researchers that protective factors involved in resilience, such as optimism and positive mood, self-esteem, self-care, independence, social support, and reduced anxiety, are related to the influence on health, including biologic processes such as neuroendocrine and immune function (Cal et al., 2015). However, the relationship between resilience (not only protective factors) and health has not yet been sufficiently explored in Africa and Ghana. This is so, not only with regard to the psychological well-being and quality of life aspects, but also the impact on physical health and disease progression. Also, majority of the research in clinical psychology focus on the psychopathologies that individuals who have chronic diseases may have without paying much attention to their positive characteristics. This is in direct contrast to positive psychology: a model proposed by Martin Seligman and Mihalyi Csikszentmihaly (2000). This model proposes that practice and research into psychology should not only focus on pathologies but should also focus on positive subjective experiences, positive individual traits and positive institution that have the capacity to improve human living and quality of life (Seligman & Csikszentmihaly, 2000); but this had been mostly ignored by researchers.

Also, despite the high prevalence and burden of psychological distress among individuals with cancer, diabetes and hypertension studies have suggested that they infrequently seek professional help (Salaheddin & Mason, 2016). Seeking help is considered to be an important step towards accessing appropriate physical and psychological health support and improving quality of life (Salaheddin & Mason, 2016). In recent years, improving public well-

being and access to mental health services has become a key agenda in government policies, campaigns, and programmes (Salaheddin & Mason, 2016). However, studies in Africa and Ghana only point out the psychological problems these patients face but do not look out for the help seeking behaviours that serve as barriers that prevent them from seeking psychological help (Copeland & Snyder, 2011). Copeland and Synder (2011) suggest that certain barriers to seeking for psychological help are due to mistrust, stigma, and low socio-economic status among others. Understanding the barriers to help-seeking is an important step towards facilitating early access to mental health services and improving psychological and physical well-being in patients with chronic diseases.

Finally, the role of social support in the relationship between resilience and psychological distress (Ozbay et al., 2007) has only been suggested by researchers but lack enough empirical backing. Thus it is important to incorporate social support as a moderating variable that can influence resilience in patients with the chronic health conditions that are under study. It is therefore imperative due to the aforementioned reasons to conduct this study to know the prevalence of psychological distress and resilience in patients with chronic health conditions in Ghana, specifically in the Cape Coast Teaching Hospital. The Cape Coast Teaching Hospital is chosen as the main centre for the study because it the central regional hospital and thus majority of cancer, hypertension and diabetes cases are referred for treatment from other hospitals and clinics in the central region.

**Purpose of the Study**

The overall purpose of this study was to examine the level of psychological distress, resilience and social support in patients with chronic diseases, specifically focusing on patients with breast cancer, Type 2 diabetes and hypertension. The study also focuses on exploring the major help-seeking behaviours that prevent patients with cancer, diabetes and hypertension from seeking psychological support. Specifically, this study seeks to:

1. Investigate the level of psychological distress in patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast.
2. Investigate the level of resilience in patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast.
3. Examine the major help-seeking that prevent patients with Type 2 diabetes, breast cancer and hypertension from seeking psychological help.
4. Establish the relationship between resilience and psychological distress in patients with Type 2 diabetes, breast cancer and hypertension.
5. Determine how social support moderates the relationship between psychological distress and resilience in patients with Type 2 diabetes, breast cancer and hypertension.
6. Ascertain how social support mediates the relationship between psychological distress and resilience in patients with Type 2 diabetes, breast cancer and hypertension.
7. Examine the differences in the level of psychological distress in patients with Type 2 diabetes, breast cancer and hypertension.

8. Investigate the differences in the level of resilience in patients with Type 2 diabetes, breast cancer and hypertension.
9. Determine how level of education influences resilience in patients with Type 2 diabetes, breast cancer and hypertension.
10. Determine how employment status influences resilience in patients with Type 2 diabetes, breast cancer and hypertension.

**Research Questions**

The following research questions guided the study.

1. What is the level of psychological distress in patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast?
2. What is the level of resilience in patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast?
3. What are the help-seeking behaviours that prevent patients with Type 2 diabetes, breast cancer and hypertensions from seeking psychological help?

**Research Hypotheses**

The hypotheses were:

1. $\boldsymbol{H_0}$: There is no significant relationship between resilience and psychological distress in patients with Type 2 diabetes, breast cancer and hypertension.

   $\boldsymbol{H_1}$: There is a significant relationship between resilience and psychological distress in patients with Type 2 diabetes, breast cancer and hypertension.

2. ***H₀***: Social support does not significantly moderate the relationship between resilience and psychological distress in Type 2 diabetic, breast cancer and hypertension patients.

   ***H₁***: Social support significantly moderates the relationship between resilience and psychological distress in Type 2 diabetic, breast cancer and hypertension patients.

3. ***H₀***: Social support does not significantly mediate the relationship between resilience and psychological distress in Type 2 diabetic, breast cancer and hypertension patients.

   ***H₁***: Social support significantly mediates the relationship between resilience and psychological distress in Type 2 diabetic, breast cancer and hypertension patients.

4. ***H₀***: There is no significant difference in the level of psychological distress in Type 2 diabetes, breast cancer and hypertension.

   ***H₁***: There is a significant difference in the level of psychological distress in Type 2 diabetes, breast cancer and hypertension.

5. ***H₀***: There is no significant difference in the level resilience in Type 2 diabetic, breast cancer and hypertensive patients.

   ***H₁***: There is a significant difference in the level of resilience in Type 2 diabetic, breast cancer and hypertensive patients.

6. ***H₀***: There is no significant difference in level of resilience with regard to educational level of patients Type 2 diabetic, breast cancer and hypertensive patients.

***$H_1$***: There is a significant difference in level of resilience with regard to educational level of patients Type 2 diabetic, breast cancer and hypertensive patients.

7. ***$H_0$***: There is no difference in level of resilience with regard to employment status of patients Type 2 diabetic, breast cancer and hypertensive patients.

   ***$H_1$***: There is a difference in level of resilience with regard to employment status of patients Type 2 diabetic, breast cancer and hypertensive patients.

**Significance of the Study**

The study provides valuable information on the psychological problems that individuals with chronic health conditions face as literature has already pointed out. This would inform stakeholders such as clinical health psychologists, clinical psychologists, psychiatrists, medical doctors and counsellors in the health-care delivery system to find appropriate and effective ways of helping this vulnerable group of individuals deal effectively with the psychological implications of having a chronic health conditions such as the ones under study.

The study also informs health-care policy makers (ministry of health) on the need to incorporate the Biopsychosocial (Spiritual) model of diagnosis and treatment in the health care delivery system in Ghana as recommended by the World Health Organization. In doing so, the health-care system would not only focus on the physical or biological health needs of individuals with chronic health conditions but would also find it necessary to provide psychological and social help to such individuals.

The study provides information on how social support can be effective in dealing with psychological problems related to chronic health conditions and how social support can also help in building resilience in patients with chronic diseases. The role of social support in fostering both physical and psychological health has been emphasized by many researchers; this study however seeks to confirm their findings on how important social support is in improving well-being.

Findings from this study also add up to the existing and growing body of literature that confirms the relationship between physical and psychological health and thus the mind and the body. Also, it would increase the knowledge that exists on the psychological problems that individuals with chronic diseases face. It also seeks to set a new precedent that would shift the focus of psychological research in Ghana from psychopathologies to positive human experiences and characteristics that would improve quality of life of patients with chronic diseases.

**Delimitations**

1. Though this study looked at psychological distress among individuals with chronic health conditions, it should be noted that there is a large number of chronic health conditions and thus this study focuses on only three chronic health conditions. They are breast cancer, Type 2 diabetes and hypertension. This is because according to research findings these conditions are common in Ghana. (Agyei-Mensah & Aikins, 2010).
2. This research work solely focused on psychological distress and resilience in patients with chronic diseases and also the help-seeking

behaviours that serve as barriers that prevent them from seeking psychological support.

3. Geographically, this study focused on the Cape Coast Metropolis in the Central Region of Ghana and more specifically focuses on patients seeking treatment at the Cape Coast Teaching Hospital.

**Limitations**

1. There were problems related to understanding and appropriately completing the data collection instrument given to the study participants.
2. Responses of the study participants may not be objective since some patients may have overrated or underrated their responses. Biases associated with answering of items on data collection instruments by some of the participants cannot be ruled out completely and that is likely to affect the validity and reliability of the research finding.
3. Some participants could not respond to the questionnaire provided themselves because could not read and understand the English language. Thus the items on the questionnaire were translated to them in either Fante or Twi. Although it was effective, it is possible that the actual meaning of the items was lost in translation and thus affected their responses. This could affect the reliability of their responses and the results in general

**Definition of Terms**

**Chronic disease:** a human health condition or disease that is persistent or otherwise long-lasting in its effects or a disease that comes with time.

**Diabetes:** a group of diseases that result in high sugar level in the blood (high blood glucose).

**Breast cancer:** a group of diseases involving abnormal cell growth in the breast with the potential to invade or spread to other parts of the body.

**Hypertension:** a chronic cardiovascular health condition in which an individual has a high blood pressure.

**Psychological distress:** an unpleasant feelings or emotions that impact your level of functioning.

**Resilience:** the ability to successfully cope with adverse situations.

**Help-seeking behaviours:** personal beliefs and attitudes that serve as barriers to seeking psychological help.

**Organisation of the Study**

The study research entails five main chapters. Chapter one gives a broad overview of the topic under study from different perspectives and justifies why it is important to conduct this study with statistics and research findings. Chapter two, deals with the review of related literature. It presented what authors from various disciplines have written about psychological distress and resilience among patients with chronic health conditions. It presents theoretical, conceptual and empirical review on psychological distress, resilience and barriers to psychological help seeking. Chapter three presents the research methodology that will be used for the study. This consists of the research design, population, sample and sampling procedure, data collection instruments, and data collection procedure and data analysis. The presentation of the results from data collected from the field is found in the Chapter four. This is where the data gathered was subject to analysis and

discussion in relation to the literature reviewed. Chapter five which is the final chapter presents the summary, conclusions and recommendations based on the research findings and suggestions for future research.

# CHAPTER TWO

# LITERATURE REVIEW

## Introduction

This study focuses on exploring psychological distress and resilience among individuals with chronic diseases as well as the help-seeking behaviours that prevent them from seeking psychological help. The previous chapter explained the background of the study, the research problems and gave justification for the necessity of the study. This chapter aims at reviewing literature that is relevant and related to this study. The review covers:

1. **Theoretical Review**
    a. Cognitive model of Psychopathology (Clark & Beck, 1999)
    b. Resiliency Theory (Ouellette & DiPlacido, 2001)
    c. Biopsychosocial (Spiritual) Model (Engel, 1977)
2. **Conceptual Review**
    a. Diabetes
    b. Breast cancer
    c. Hypertension
    d. Psychological distress
    e. Resilience
    f. Social support
    g. Conceptual Framework

3. **Empirical Review**

    a. Prevalence of psychological distress in patients with chronic diseases
    b. Prevalence of resilience in patients with chronic diseases
    c. Help seeking behaviours to seeking psychological support
    d. Relationship between psychological distress and resilience
    e. Social support as a moderator of the relation between psychological distress and resilience
    f. Social support as a mediator of the relation between psychological distress and resilience
    g. Psychological distress in patients with chronic diseases
    h. Resilience in patients with chronic diseases
    i. Level of Education and Resilience
    j. Employment status and Resilience

**Theoretical Review**

This review focuses on the various theoretical perspectives that form the basis of the study.

**Cognitive model of psychopathology**

The study is grounded in a larger theoretical framework based on the Cognitive Model of psychopathology by David Clark and Aaron Beck (1999). The cognitive model describes how people's thoughts and perceptions influence their lives. This model assumes that cognition is vital to understanding and treating psychological disorders. Clark and Beck (1999), define cognition as that function that involves inferences about one`s experience and the occurrence and control of future events. Cognition includes

the processes involved in identifying and predicting complex relations among events for the purpose of adaptation. Humans have the capacity for primitive and higher level cognitive processing (Nelson-Jones, 2010). Often, distress can distort people's perceptions, and that, in turn, can lead to unhealthy emotions and behaviours. Cognitive theory assumes that individuals can learn to identify and evaluate their "automatic thoughts" and shift their thinking to be healthier (Beck & Weishaar, 2011). The cognitive model is at the core of cognitive theory, and it plays a critical role in helping therapists use gentle Socratic questioning to develop treatments (Beck & Weishaar, 2011). Cognitive theory views personality as shaped by interactions between innate disposition and environment, and emphasizes the role of information processing in human responses and adaptation that are crucial in individual's lives and how they function (Beck & Dozois, 2011; David & Szentagotai, 2006).

The Cognitive model of psychopathology main basis is on an information processing model which posits that during psychological distress a person's thinking becomes more rigid and distorted, judgments become overgeneralised and absolute, and the person's basic beliefs about the self, others and the world become fixed (Neenan & Dryden, 2010). In other words, when we become emotionally distressed our normal information processing abilities tend to become faulty because we introduce a consistently negative bias into our thinking, thereby maintaining our problems. Information processing depends upon two interacting subsystems, described as primary or automatic processing system and secondary or reflective processing system (Beck & Weishaar, 2011). This conceptualisation of a dual processing system

has its roots in Freud's concept of appraisal and reflective reappraisal and relates to automatic and controlled processing in cognitive psychology (Schneider & Chein, 2003). The automatic system processes stimuli rapidly and is triggered by events that signal personal threats, gains, or losses. This system fits incoming data into gross categories and is likely to produce errors (Schneider & Chein, 2003). The reflective system processes stimuli more slowly, is resource demanding, and is more deliberate, nuanced, and controlled. The meanings and interpretations tend to be more objective and refined, and less absolute and extreme, than the products of primary processing (Schneider & Chein, 2003).

The two systems may act reciprocally in that the subjective meanings assigned by the automatic system may be appraised and corrected or modified by the reflective system that is reality testing (Neenan & Dryden, 2010). The dual processing system is driven by cognitive structures and labelled schemas (Neenan & Dryden, 2010). Cognitive schemas contain people's perceptions of self and the world, goals and expectations, memories, and previous learning (Beck & Weishaar, 2011; Dowd, Clen, & Arnold, 2010). In Cognitive Theory, early negative experiences are the developmental precursors for negative schemas regarding the self, current circumstances, and the future. Individuals respond to situations cognitively, emotionally, motivationally, and behaviourally through a set of schemas (Ledley, Huppert, Foa, Davidson, Keefe & Potts, 2005). Schemas are self-selective in an active and evolutionary process in which all perceptions and cognitive functions are applied to new functions (Ledley et al., 2005). Schemas are central to psychopathology, and those schemas that distort reality, fail to fit new circumstances, accommodate

new structures, or create distortions would be maladaptive and considered cognitive shifts or vulnerabilities that generate problems (Beck & Weishaar, 2011; Dowd et al., 2010).

According to Beck and Weishaar, (2011) and Neenan and Dryden (2010), common information-processing distortions or biases include:

a. Arbitrary inferences which refers to making conclusions without supporting and relevant evidence. This includes "catastrophising," or thinking of the absolute worst scenario and outcomes for most situations. Catastrophising is common in patients with chronic health problems.
b. Selective abstraction which consists of forming conclusions based on one isolated detail of an event. In this process other information is ignored, and the significance of the total context is missed. The assumption is that the events that matter are those dealing with failure and deprivation.
c. Overgeneralization is a process of holding extreme beliefs on the basis of a single incident and applying them inappropriately to dissimilar events or settings.
d. Magnification and minimization consist of perceiving a case or situation in a greater or lesser light than it truly deserves. A patient might make this cognitive error by assuming that committing even a minor symptom in his or her health could easily create crisis for oneself and might result in psychological damage or death.
e. Personalisation is a tendency for individuals to relate external events to themselves, even when there is no basis for making this connection.

f. Labelling and mislabelling involve portraying one's identity on the basis of imperfection and mistakes made in the past and allowing them to define one's true identity. Instead of labelling only the behaviour or condition, patients attach the label to themselves (e.g. 'I am sick and bedridden, so that makes me a worthless').

g. Dichotomous thinking involves categorising experiences in either-or extremes. With such polarised thinking, events are labelled in black or white terms. Situations are viewed in either/or terms.

h. Mind-reading is the belief that one can discern the thoughts of others without any accompanying evidence (example: 'she doesn't have to tell me – I know she thinks I'm worthless').

Distorted thinking underlies all psychological disturbances (Ledley et al., 2005). These distortions usually stem from underlying dysfunctional beliefs that are activated during emotional distress. Thus distorted thinking about having a chronic disease would inevitably lead to psychological distress and other related psychological problems.

The Cognitive model of psychopathology and emotional disorders advances three levels of thinking that should be examined and modified. These levels are organised in a hierarchical form according to Neenan and Dryden, (2010) and they are as follows:

a. **Negative Automatic Thoughts:** These are thoughts that come rapidly, automatically and involuntarily to mind when a person is stressed or upset and seem plausible at the time. Negative Automatic Thoughts can be triggered by external events.

b. **Underlying Assumptions/Rules:** These are the often unarticulated assumptions that guide our everyday behaviour, set our standards and values, and establish our rules for living. Assumptions and rules are also called intermediate beliefs as they link Negative Automatic Thoughts with core beliefs.

c. **Core Beliefs:** These are the fundamental beliefs about ourselves, others and the world that help us to make sense of our life experiences. We usually have both positive and negative core beliefs.

Neenan and Dryden (2010), assert that it is the interaction between the three levels of thinking that brings about psychopathology or psychological problems. Thus negative thoughts about the development of a chronic health condition have the tendency of putting an individual into a state or disorganization and stress which in turn would result in the development of psychological distress. However, it should be noted that having negative thoughts about a chronic health condition cannot be completely overruled due to the nature of these conditions.

***Application of the cognitive model of psychopathology***

According to Beck's theory on the etiology of psychopathology, people acquire a negative schema of the world in childhood and adolescence; children and adolescents who experience psychopathology acquire this negative schema earlier (Beck, 2002). People acquire such schemas through a loss of a parent, rejection by peers, bullying, criticism from teachers or parents, the depressive attitude of a parent and other negative events. To cognitivists, people create the world in their minds and try to understand the events that are going on around them (Comer, 2010). Whether thing around us

would be useful or harmful to us depends on the effectiveness of our thoughts. Thus effective thoughts lead to adjustment, whereas ineffective thoughts and inner world that is painful and harmful to us (Dryden & Ellis, 2001). Abnormal functioning can result from several kinds of cognitive problems. Some people may make assumptions and adopt attitudes that are disturbing and inaccurate (Brown & Beck, 2002).

Illogical thinking processes are another source of abnormal functioning, according to cognitivists. Beck (2002), for example, states that some people consistently think in illogical ways and keep arriving at self-defeating conclusions. An illogical thought that is common in depression for example is overgeneralization: where people draw series negative conclusions on the basis of a single insignificant event, and this causes psychopathologies (Comer, 2010). In view of this, treatment should focus helping clients find more rational thoughts to replace self-defeating and irrational thoughts in order to foster proper adjustment (Beck, 2002).

**Resiliency theory**

Resilience can be a process consisting of positive adaptation when facing significant hardship, or adversity (Zauszniewski, Bekhet & Suresky, 2010) or a dynamic set of skills utilized when facing a difficult situation, encompassing a range of thoughts (positive outlook), feelings (such as sense of humour) and behaviours (capacity to utilize social support) (Simpson & Jones, 2013). This study is also based on the resilience theory which was developed by Ouellette and DiPlacido (2001).

The Resilience theory states that resilience is determined by both risk and protective factors (Ouellette & DiPlacido, 2001; Greeff, Vansteenwegen

& Ide, 2006; Zauszniewski, Bekhet & Suresky, 2009). The risk factors are the factors that pose a threat to an individual's resilience and mental health, examples of these include elements such as stigma, isolation, occupational restrictions among others (Zauszniewski et al., 2009). In relation to cognition, an example of a risk factor could be when an individual choses to appraise their situation as life threatening, burdensome and stressful (Zausniewski et al., 2010). The protective factors are factors that facilitate and foster resiliency. They tend to focus predominantly on positive cognitions. These factors improve an individual's response to stressful and problematic life events producing a positive outcome (Zausniewski et al., 2010). There are said to be seven main determinants for conquering adversity in order to become resilient, stronger, more flexible and healthier (Zausniewski et al., 2010). They are:

a. **Acceptance:** This refers to tolerating what is perceived to be an undesirable even and the ability to understand the deeper role of that e, its importance and value. Acceptance helps to change the way a situation is perceived.
b. **Hardiness:** This involves internal strengths such as cognitive and behavioural flexibility, endurance, control and commitment. Resilience flourishes from the ability to accept the challenge, and use active problem solving techniques when looking after a loved one with a mental illness.
c. **Mastery:** This is when the individuals facing the problem and family members believe they have a sense of control over the situation, or that perhaps they hold the belief that they are the masters of their outcome.

It is a form of coping that facilitates adaptation and a sense of competence.

d. **Hope and Optimism:** This has been said to be an integral component of coping. It is produced through positive memories and interpersonal relationships, which facilitate fresh insights and a sense of purpose.
e. **Self-efficacy:** An individual's belief that they are both competent and confident in dealing with stressful events is important. It has been said that higher levels of self-efficacy are related to more effective management of problems.
f. **Sense of coherence:** This is when an individual believes that the world is manageable and meaningful. It refers to a global perspective and orientation towards life. It is the way in which distressed individual and all family members come together and combine their strengths and shared values to manage the tension and strain in a given challenging situation.
g. **Resourcefulness:** This refers to being prudent when it comes to utilizing positive cognitions to cope effectively through positive thoughts, feelings and behaviours. It also refers to being willing to seek help from others when needed.

A resilient survivor is an individual with a combination of damages and strengths; however they predominantly hold positive insights, independence, positive interpersonal relationships, initiative and humour (Zausniewski et al., 2010). All these positive characteristics help in being able to cope and thrive in the face of adverse life situations. It is clear that resilience does not result from the evasion of risk, but rather the utilization of protective factors in order

to manage adversities and come out of the situation not only stronger, but flourishing (Benzies & Mychasink, 2009).

According to Greene (2002) as cited in Greene, Galambos and Lee (2004), there are certain key theoretical assumptions that underpin this resilience theory they include the following:

a. Resilience is a Biopsychosocial and Spiritual phenomenon which does not focus on only one aspect of human nature but applies holistic approach.
b. Resilience involves a transactional dynamic process of person-environment exchanges.
c. Resilience encompasses an adaptation process of goodness-of-fit.
d. Resilience occurs across the life course with individuals, families, and communities experiencing unique paths of development.
e. Resilience is linked to life stress and people's unique coping capacity and involves competence in daily functioning.
f. Resilience may be interactive, having an effect in combination with risk factors.
g. Resilience is enhanced through connection or relatedness with others.
h. Resilience is influenced by diversity including ethnicity, race, gender, age, sexual orientation, economic status, religious affiliation, and physical and mental ability.
i. Resilience is expressed and affected by multilevel attachments, both distal and proximal, including family, school, peers, neighbourhood, community, and society; consequently, resilience is a function of micro and macro factors.

These assumptions are thought to be critical when studying and explaining resilience. The theory and it assumptions gives an insight into the various factors that play a role in building resilience. Furthermore, the theory emphasizes that confrontation with adversity leads individuals to a new level of growth, and the notion endorsed by some Psychologists that resilience is an innate quality that needs only to be properly awakened (Fleming & Ledogar, 2008).

***Application of resiliency theory***

According to the resiliency theory, resilience is a characteristic which is determined by risk factors and protective factors. The risk factors are various situations that could trigger negative psychological and or behavioural responses. Having a chronic health condition has some negative physical and mental implications. However by applying the various determinants of resilience (acceptance, hope and optimism, self-efficacy etc.) an individual can overcome problems related with having a chronic condition such as diabetes, cancer and hypertension to facilitate positive response and adaptation. Again, cognitivists are of the view that resilience is the ability to replace negative thoughts with positive thoughts and dwelling n them to make important life changes and would improve quality of life. This means that in order to be considered a resilient, there should be the presence of a challenging stimulus; and how a person deals with this stimulus would determine how resilient the person is.

**Biopsychosocial (Spiritual) model**

The Biopsychosocial model was developed at University of Rochester by George Engel and John Romano in 1977. The Biopsychosocial model is a

broad view that attributes disease outcome to the intricate, variable interaction of biological factors (genetic, biochemical), psychological factors (mood, personality, behaviour), and social factors (cultural, familial, socioeconomic, medical) (Santrock, 2007). The Biopsychosocial model counters the biomedical model, which attributes disease to roughly only biological factors, such as viruses, genes, or somatic abnormalities (Engel, 1977). While traditional biomedical models of clinical medicine focus on pathophysiology and other biological approaches to disease, the Biopsychosocial approach emphasize the importance of understanding human health and illness in their fullest contexts. The Biopsychosocial model applies to disciplines ranging from medicine to psychology to sociology; its novelty, acceptance, and prevalence vary across disciplines and across cultures (Penney, 2010).

Some authors see the Biopsychosocial model in terms of causation (Santrock, 2007). Its biological component seeks to understand how the cause of the illness stems from the functioning of the individual's body and biological processes. The psychological component looks for potential psychological causes for a health problem such as lack of self-control, emotional turmoil, negative thinking among other psychological factors. Its social part investigates how different social factors such as socioeconomic status, culture, technology, and religion can influence health (Santrock, 2007). However, a closer reading of Engel's seminal paper in the American Journal of Psychiatry (1980) embeds the model far more closely into patient care. It is not just about causation but also about how any clinical condition (medical, surgical, or psychiatric) can be seen narrowly as just biological or more widely as a condition with psychological and social components, which will impinge

on a patient's understanding of her condition and will affect the clinical course of that condition (Engel, 1980). The Biopsychosocial model also focuses of the interaction of biological, psychological and social factors and how they can influence an individual's health and well-being.

Currently, the Biopsychosocial model has been expanded to include the spiritual dimension as well; this has been supported by many authorities. One of such authorities is Katerndahl (2008), whose study has shown the relevance of spiritual symptoms and their interactions for understanding health outcomes. Sulmasy (2002) justifies the expansion of the model to a Biopsychosocial-spiritual one by remembering that genuinely holistic health care must address the totality of the patient's relational existence. According to him, this will contribute to a more comprehensive model of care and research that takes account of patients in their fullest wholeness (Sulmasy, 2002). Also, the World Health Organization (WHO) highlights the importance of the spiritual dimension for clinical purposes (Saad, de Medeiros, & Mosini, 2017). Arguably, the transcendent and sacred questionings of the spiritual dimension cannot be exhausted on the mental and social grounds, notwithstanding the interfaces between the concepts (Saad et al., 2017).

***Application of the Biopsychosocial(S) model***

The model is based in part on social cognitive theory (Santrock, 2007). It implies that treatment of disease processes, like Type 2 diabetes and cancer, requires the health care team to address biological, psychological, social factors as well as spiritual influences upon a patient's functioning and well-being. Also, psychosocial factors can cause a biological effect by predisposing the patient to risk factors (Purdy, 2013). An example is that clinical depression

by itself may not cause liver problems, but a depressed person may be more likely to have alcohol problems and may lead liver damage. Perhaps, it is that increased risk-taking that leads to an increased likelihood of disease. Most diseases in Biopsychosocial discussion are such behaviourally-moderated illnesses, with known high risk factors, or so-called "Biopsychosocial illnesses or disorders" (Disorbio & Bruns, 2006).

**Conceptual Review**

The conceptual review provides information on the various concepts under study. It considers definitional issues and explanation, characteristics, causes and risk factors, effects, and treatment and management of health conditions where applicable, and also explains the main variables in the study.

**Diabetes mellitus**

Diabetes mellitus (DM), commonly referred to as diabetes, is a group of metabolic disorders in which there are high blood sugar levels over a prolonged period (WHO, 2014). Diabetes is due to either the pancreas not producing enough insulin, or the cells of the body not responding properly to the insulin produced (Shoback, & Gardner, 2011).

As of 2015, an estimated 415 million people had diabetes worldwide (IDF, 2015) with type 2 diabetes making up about 90% of the cases (Shi & Hu, 2014). As of 2014, trends suggested the rate would continue to rise (IDF, 2015). Diabetes at least doubles a person's risk of early death (WHO, 2014). From 2012 to 2015, approximately 1.5 to 5.0 million deaths each year resulted from diabetes (IDF, 2015).

***Types of diabetes***

There are three main types of diabetes mellitus (WHO, 2013):

a. **Type 1 diabetes:** this results from the pancreas' failure to produce enough insulin due to loss of beta cells (WHO, 2013). This form was previously referred to as "insulin-dependent diabetes mellitus" or "juvenile diabetes" and the cause is unknown (WHO, 2013). Type 1 diabetes is characterized by loss of the insulin-producing beta cells of the pancreatic islets, leading to insulin deficiency. This type can be further classified as immune-mediated or idiopathic. Type 1 diabetes is partly inherited, with multiple genes, including certain genotypes, known to influence the risk of diabetes. In genetically susceptible people, the onset of diabetes can be triggered by one or more environmental factors, as well as viral infection or diet (Butalia, Kaplan, Khokhar, & Rabi, 2016).

b. **Type 2 diabetes:** this type begins with insulin resistance, a condition in which cells fail to respond to insulin properly (WHO, 2013). As the disease progresses, a lack of insulin may also develop. This form was previously referred to as "adult-onset diabetes" (WHO, 2013). Type 2 diabetes is characterized by insulin resistance, which may be combined with relatively reduced insulin secretion (Shoback, & Gardner, 2011).The defective responsiveness of body tissues to insulin is believed to involve the insulin receptor. However, the specific defects are not known. Type 2 diabetes is the most common type of diabetes mellitus (WHO, 2013). Type 2 diabetes is primarily due to lifestyle factors and genetics (Risérus, Willett, & Hu, 2009).

c. **Gestational Diabetes Mellitus (GDM):** this is the third main form, and occurs when pregnant women without a previous history of diabetes develop high blood sugar levels (WHO, 2013). GDM resembles Type 2 diabetes in several respects, involving a combination of relatively inadequate insulin secretion and responsiveness. It occurs in about 2 to 10% of all pregnancies and may improve or disappear after delivery (NIHCE, 2015). However, after pregnancy approximately 5 to 10% of women with GDM are found to have diabetes, most commonly Type 2 (NIHCE, 2015). GDM is fully treatable, but requires careful medical supervision throughout the pregnancy. Management may include dietary changes, blood glucose monitoring, and in some cases, insulin may be required (WHO, 2013). Though it may be transient, untreated gestational diabetes can damage the health of the foetus or the mother.

***Signs and symptoms of diabetes***

The characteristic symptoms of untreated diabetes are weight loss, frequent urination, increased thirst, and increased hunger (Cooke, & Plotnick, 2008). Symptoms may develop quickly (weeks or months) in Type 1 diabetes, while they usually develop more slowly, subtle or absent in Type 2 diabetes. Several other signs and symptoms can mark the onset of diabetes although they are not specific to the condition (Cooke, & Plotnick, 2008). In addition to the known ones above, they include blurred vision, headache and fatigue, slow healing of cuts, and itchy skin as well as diabetes dermadomes (diabetes related skin rashes) (Rockefeller, 2015).

Low blood sugar (hypoglycemia) is common in people with both Type 1 and Type 2 diabetes. Most cases are mild and are not considered medical emergencies (Kenny, 2014). Effects can range from feelings of unease, sweating, trembling, and increased appetite in mild cases to more serious effects such as confusion, changes in behaviour such as aggressiveness, seizures, unconsciousness, and permanent brain damage or death in severe cases (Verrotti, Scaparrotta, Olivieri, & Chiarelli, 2012).

All forms of diabetes increase the risk of long-term complications. These typically develop after 10 to 20 years but may be the first symptom in those who have otherwise not received a diagnosis before that time. The major long-term complications relate to damage to blood vessels. Diabetes doubles the risk of cardiovascular disease (Sarwar et al., 2010) and about 75% of deaths in diabetics are due to coronary artery disease (O'Gara et al., 2013).

***Causes and risk factors of diabetes***

The following have been implicated as some causes and risk factors of diabetes:

a. **Genetics and family history:** Genetics and family history have been implicated as possible causes. Type 1 diabetes for example occurs when the immune system, attacks and destroys the insulin-producing beta cells of the pancreas (Butalia, et al., 2016). Scientists think type 1 diabetes is caused by genes and environmental factors, such as viruses, that might trigger the disease (Butalia et al., 2016). Also genetic mutations in single gene can cause diabetes (monogenic diabetes) (NIDDK, 2016). These changes are usually passed through families, though the gene mutation sometimes happens on its own. Most of these

gene mutations cause diabetes by making the pancreas less able to make insulin. The most common types of monogenic diabetes are neonatal diabetes and maturity-onset diabetes of the young (NIDDK, 2016).

b. **Lifestyle:** A number of lifestyle factors are known to be important to the development of Type 2 diabetes: lack of physical activity, poor diet, stress, and urbanization (Pradeep, & Haranath, 2014). Obesity is also a major risk factor to the development of type 2 diabetes. Extra weight sometimes causes insulin resistance and is common in people with type 2 diabetes (NIDDK, 2016). Dietary factors also influence the risk of developing Type 2 diabetes. Consumption of sugar-sweetened drinks in excess is associated with an increased risk (Malik, Popkin, Bray, Després, Willett, & Hu, (2010).

c. **Medical conditions and medications:** Certain hormonal diseases cause the body to produce excess of certain hormones, which sometimes cause insulin resistance and diabetes. For example, excess production of cortisol, hyperthyroidism and acromegaly can lead to the development of diabetes (NIDDK, 2016). Furthermore, pancreatitis can harm the beta cells or make them less able to produce insulin, resulting in diabetes. If the damaged pancreas is removed, diabetes will occur due to the loss of the beta cells (NIDDK, 2016). Also certain medication such as anti-seizure drugs, psychotropic drugs, glucocorticoids, anti-rejection medications and statins (medication to reduce cholesterol level) can harm beta cells or disrupt the way insulin works causing diabetes (NIDDK, 2016).

***Treating and managing diabetes***

Diabetes is a chronic health, for which there is no known cure except in gestational diabetes where the condition goes away after delivery. Management diabetes focuses on keeping blood sugar levels as close to a normal level, without causing low blood sugar. The various ways diabetes can be managed are:

a. **Lifestyle changes:** Individuals with diabetes can benefit from certain lifestyle modification in various aspects of their lives. This includes good nutrition to achieve a normal body weight, and exercise, with the aim of maintaining both short-term and long-term blood glucose levels within acceptable bounds (Haw, Galaviz, Straus, Kowalski, Magee, Weber, Wei, Narayan, & Ali, 2017). Attention is also given to other health problems such as high cholesterol levels and obesity that may accelerate the negative effects of diabetes. Lifestyle modifications including physical activity also reduce the risk of cardiovascular diseases (Mottalib, Kasetty, Mar, Elseaidy, Ashrafzadeh, & Hamdy, 2017).

b. **Medication:** Medications that are used to treat diabetes lower high blood sugar levels. Maintaining tight glucose control keeps the glucose levels in the blood within normal range and reduces diabetes related complications (MacIsaac, Jerums, & Ekinci, 2018). Drugs such as Metformin: which is recommended for treating for type 2 diabetes decreases the liver's production of glucose (Krentz, & Bailey, 2005). Other groups of drugs include agents that increase insulin release,

agents that decrease absorption of sugar from the intestines, and agents that make the body more sensitive to insulin (Krentz, & Bailey, 2005).

c. **Insulin therapy:** Insulin therapy used for treating diabetes however is mostly recommended for individuals with type 1 diabetes (Krentz, & Bailey, 2005). It is usually a synthetic hormone which is typically administered by injection under the skin, but some forms may also be used by injection into a vein or muscle. Insulin therapy helps to manage elevated blood sugar levels and keep it within a target range (Davidson, 2015). Insulin therapy requires intense monitoring and a great deal of patient education, as improper administration is quite dangerous (Davidson, 2015).

***Preventing diabetes***

There is no known preventive measure for Type 1 diabetes; however Type 2 diabetes which accounts for majority of all cases worldwide can often be prevented through maintaining a normal body weight, engaging in physical activity, and eating healthy diet (WHO, 2013). Studies suggest high levels of physical activity reduce the risk of diabetes by 28% (Kyu et al., 2016). Dietary changes known to be effective in helping to prevent diabetes include maintaining a diet rich in whole grains and fiber, and choosing good fats, such as the polyunsaturated fats found in nuts, vegetable oils, and fish. Limiting intake of sugary beverages and cessation of tobacco smoking can be an important preventive measure (Willi, Bodenmann, Ghali, Faris, & Cornuz, 2007).

**Breast cancer**

Cancer is a heterogeneous group of diseases involving anomalous cell development with the possibility to attack or spread to different parts of the body (WHO, 2018). These contrast with benign tumours, which do not spread to other parts of the body. Breast cancer is cancer that develops from breast tissue (WHO, 2018). Outcomes for breast cancer vary depending on the cancer type, extent of disease, and person's age (Boyle & Levin, 2008). Survival rates in the developed world are high, (Boyle & Levin, 2008) with between 80% and 90% of those in England and the United States alive for at least 5 years (Office for National Statistics, 2013). In developing countries survival rates are poorer (IARC, 2014). Worldwide, breast cancer is the leading type of cancer in women, accounting for 25% of all cases (IARC, 2014). It is more common in developed countries and is more than 100 times more common in women than in men (IARC, 2014).

***Stages of breast cancer***

Breast cancer staging using the is based on the size of the tumour, whether or not the tumour has spread to the lymph nodes in the armpits, and whether the tumour has metastasized (i.e. spread to a more distant part of the body). Larger size, nodal spread, and metastasis have a larger stage number and a worse prognosis. The main stages are:

a. **Stage 0:** a lump and pre-cancerous or marker condition, which has not spread into the lymph nodes of the breast.
b. **Stages 1-3:** this when the cancer is within the breast or regional lymph nodes.

c. **Stage 4:** metastatic cancer that has a less favourable prognosis since it has spread beyond the breast and regional lymph nodes.

***Signs and symptoms of breast cancer***

Breast cancer, like other cancers, occurs because of an interaction between an environmental (external) factor and a genetically susceptible host. Normal cells divide as many times as needed and stop. They attach to other cells and stay in place in tissues. Cells become cancerous when they lose their ability to stop dividing, to attach to other cells, to stay where they belong, and to die at the proper time (American Cancer Society, 2011).

The primary discernible indication of breast cancer is regularly a lump that feels different from the rest of the breast tissue. More than 80% of breast cancer cases are found when the patient feels a lump (MMDT, 2003). Lumps found in lymph hubs found within the armpits can also demonstrate he presence of breast cancer (MMDT, 2003). Signs of breast cancer other than a lump may include thickening distinctive from the other breast tissue, one breast getting to be bigger or lower, and nipple changing position or shape swelling underneath the armpit or around the collarbone (American Cancer Society, 2011).

Another detailed symptom of breast cancer is Paget's disease of the breast. This disorder presents as skin changes such as redness, discoloration, or mellow chipping of the nipple skin (National Cancer Institute, 2005). As Paget's disease of the breast advances, signs may incorporate tingling, increased sensitivity and burning on the nipple area. Approximately 50% of women diagnosed with Paget's disease of the breast moreover have a lump in the breast (National Cancer Institute, 2005).

Occasionally, breast cancer presents as metastatic disease (cancer that has spread beyond the original organ). The symptoms caused by metastatic breast cancer will depend on the location of metastasis. Common sites of metastasis include bone, liver, lung and brain (Lacroix, 2006). Unexplained weight loss can occasionally signal breast cancer, as can symptoms of fevers or chills. Bone or joint pains can sometimes be manifestations of metastatic breast cancer, as can jaundice or neurological symptoms (Lacroix, 2006). These symptoms are called non-specific, meaning they could be manifestations of many other illnesses (National Cancer Institute, 2004).

***Risk factors of breast cancer***

Risk factors of cancer are divided into two categories: modifiable risk factors and fixed risk factors. Modifiable risk factors are thing people can change themselves (such as alcohol consumption) while fixed risk factors are thing that cannot be changed (such old age and biological sex) (Hayes, Richardson & Frampton, 2013). The primary risk factors for breast cancer are being female and older age (Reeder & Vogel, 2008). Potential risk factors include genetics, lack of childbearing or lack of breastfeeding, higher levels of certain hormones, certain dietary patterns, and obesity (Yager & Davidson, 2006; Breast Cancer Care, 2018). A recent study by Haim & Portnov (2013) indicate that exposure to light pollution is a risk factor for the development of breast cancer. Other studies also implicated the following as risk factors of breast cancer:

a. **Genetics:** Heredity and genetic susceptibility may play a minor role in most breast cases (Pasche, 2010). Overall, however, genetics is believed to be the primary cause of 5 to 10% of all cases (Gage,

Wattendorf & Henry, 2012). Women whose mothers were diagnosed before age 50 have an increased risk of developing the condition than and those whose mothers were not diagnosed at all or after the age 50 (Colditz, Kaphingst, Hankinson, & Rosner, 2012).

b. **Medical conditions:** Breast changes like atypical ductal hyperplasia found in benign breast conditions are correlated with an increased breast cancer risk (Afonso & Bouwman, 2008). Diabetes mellitus might also increase the risk of breast cancer (Anothaisintawee et al., 2013). Autoimmune diseases such as lupus erythematous seem also to increase the risk for the acquisition of breast cancer (Böhm, 2011).

***Treating and Managing breast cancer***

The management of breast cancer depends on various factors, including the stage of the cancer and the person's age (Carlson et al., 2009). Treatments are more aggressive when the prognosis is worse or there is a higher risk of recurrence of the cancer following treatment. Treatment procedures include:

a. **Surgery:** Breast cancer is usually treated with surgery. Surgery involves the physical removal of the tumour, typically along with some of the surrounding tissue (Carlson et al., 2009). One or more lymph nodes may be biopsied during the surgery; increasingly the lymph node sampling is performed by a sentinel lymph node biopsy. Standard surgeries include: mastectomy (removal of the whole breast), quadrantectomy (removal of one-quarter of the breast) and lumpectomy (removal of a small part of the breast). Once the tumour has been removed, if the person desires, breast reconstruction surgery

(plastic surgery) may then be performed to improve the aesthetic appearance of the treated site.

b. **Medication:** Medications used after and in addition to surgery are called adjuvant therapy (Holmes, Chen, Li, Hertzmark, Spiegelman, & Hankinson, 2010). There are currently three main groups of medications used for adjuvant breast cancer treatment: hormone-blocking agents, chemotherapy, and monoclonal antibodies. Hormone blocking therapy is used when the cancer requires oestrogen to continue growing (Petit, Dufour, & Tannock, 2011). These cancers can be treated with drugs that either block the receptors, or block the production of oestrogen. Chemotherapy is predominantly used for cases of breast cancer in stages 2 to 4, and is particularly beneficial in oestrogen receptor-negative disease (Carlson et al., 2009). The chemotherapy medications are administered in combinations, usually for periods of 3 to 6 months. Another treatment for breast cancer involves the use of monoclonal antibodies that bind only to cancer cell-specific antigens and induce an immune response against the target cancer cell (Jahanzeb, 2008). However, the medications also damage fast-growing normal cells, which may cause serious side effects.

c. **Radiation:** Radiotherapy is given after surgery to the region of the tumour bed and regional lymph nodes, to destroy microscopic tumour cells that may have escaped surgery. It may also have a beneficial effect on tumour microenvironment (Belletti et al., 2008). Radiation therapy can be delivered as external beam radiotherapy or as brachytherapy (internal radiotherapy). Radiation can reduce the risk of

recurrence by 50 to 66% when delivered in the correct dose and is considered essential when breast cancer is treated by removing only the lump (Belletti et al., 2008).

***Preventing breast cancer***

Breast cancer can be prevented by various means however the most common ways are:

a. **Lifestyle:** Women can reduce their risk of breast cancer by maintaining a healthy weight, reducing alcohol use, increasing physical activity, and breast-feeding (American Cancer Society, 2011). These modifications might prevent 38% of breast cancers. High levels of physical activity reduce the risk of breast cancer by about 14% (Eliassen, Hankinson, Rosner, Holmes, & Willett, 2010). Regular physical activity reduces obesity could also have other benefits, such as reduced risks of cardiovascular disease (Hayes et al., 2013). High intake of citrus fruit has been associated with a 10% reduction in the risk of breast cancer (Song & Bae, 2013).

b. **Pre-emptive surgery:** Removal of both breasts before any cancer has been diagnosed or any suspicious lump or other lesion has appeared (a procedure known as risk reducing mastectomy) (Carbine, Lostumbo, Wallace, & Ko, 2018). This may be considered in people who have been tested to have a genetic mutations on the BRCA gene (tumor suppressor gene), which is associated with a substantially heightened risk for an eventual diagnosis of breast cancer (Meijers-Heijboeret al., 2001).

Medications such as tamoxifen could reduce the risk of breast cancer but increase the risk and endometrial cancer. They are thus not recommended for the prevention of breast cancer in women at average risk but may be offered for those at high risk (Moyer, 2013).

**Hypertension**

Hypertension is a long-term medical and cardiovascular condition in which the blood pressure in the arteries is consistently elevated (Naish, & Court, 2014). This implies the blood applies excessive force against the walls of the veins. Blood pressure is expressed by the systolic and diastolic pressures, which represents the maximum and minimum pressures respectively (CDC, 2016). In adults, normal resting blood pressure is within the range of 100 to 130 mmHg for systolic pressure and 60 to 80 mmHg for diastolic pressure (Poulter et al., 2015). Thus hypertension is present when resting blood pressure is consistently at 130/80 mmHg or above (Poulter et al., 2015). It should be noted that these number rating as different in children (James, Oparil, Carter, Cushman, Dennison-Himmelfarb, Handler & Smith, 2014). Long-term hypertension is a major risk factor for coronary artery disease, stroke, heart failure, chronic kidney disease, and dementia (Hernandorena, Duron, Vidal, & Hanon, 2017). Hypertension affects about 16 to 37% of the global population (Poulter et al., 2015).

***Types of hypertension***

Hypertension is classified into either primary hypertension or secondary hypertension.

a. Primary hypertension is usually due to non-specified genetic or environmental factors or a combination of both factors (Poulter et al.,

2015). Lifestyle factors have the implicated in the development of primary hypertension. Primary hypertension accounts for about 90-95% of all hypertension cases (Poulter et al., 2015).

b. Secondary hypertension is high blood pressure which is basically due to identifiable causes such as chronic kidney disease, use of birth control medication and pregnancy. It accounts for the remaining 5-10% of all hypertension cases (Poulter et al., 2015).

***Signs and symptoms of hypertension***

Hypertension usually develops without any symptoms, thus people do not realize they have the condition (Poulter et al., 2015). It is identified is usually through screening, or when seeking healthcare for an unrelated problem. Some individuals with hypertension report headaches (particularly at the back of the head and in the morning), as well as lightheadedness, altered vision or fainting episodes (Fisher, & Williams, 2005). These symptoms could also be associated with anxiety rather than high blood pressure (Marshall, Wolfe & McKevitt, 2012). Hypertension with certain specific symptoms may suggest secondary hypertension (Poulter et al., 2015). Severely elevated blood pressure levels could lead to hypertensive emergencies that could result in damage to one or more organs in the body (Chobanian et al., 2003).

***Causes and risk factors of hypertension***

a. **Genetic causes:** Numerous common genetic variants with small effects on blood pressure have been identified as well as some rare genetic variants with large effects on blood pressure. Studies conducted by a group of researches in University of Gothenburg using 200,000 Europeans reveal 16 previously unknown genetic regions with

interesting genes that regulate the body's blood pressure. They concluded that mutations in the genes are likely to lead to high blood pressure (Ehret, Munroe, Rice, Bochud, Johnson, Chasman, & Pihur, 2011). The researchers also stated that hypertension is a heritable trait with several biological pathways (Ehret et al., 2011).

b. **Lifestyle:** Various lifestyle factors have been implicated as causes of hypertension. They include dietary factors, excessive tobacco and alcohol use, obesity due to lack of physical activity and stress (Booth III, Li, Zhang, Chen, Muntner, & Egan, 2017). In relation dietary factors, excess salt (sodium) and insufficient potassium in diet causes the body to retain fluid, causing high blood pressure (Booth III et al., 2017). Also, excessive use of tobacco and drinking alcohol damages the heart and also damages the lining of the arterial wall, causing the arteries to narrow; leading to hypertension.

c. **Medical conditions:** Certain chronic conditions also may increase your risk of high blood pressure, such as kidney disease, diabetes and sleep apnea. These conditions are the most common cause of secondary hypertension (O'Brien, Beevers & Lip, 2007).

d. **Age:** Blood pressure rises with aging and the risk of becoming hypertensive in later life is considerable (Buford, 2016). Until about age 64, high blood pressure is more common in men. Women are more likely to develop high blood pressure after age 65 (Buford, 2016).

Other risk factors of hypertension include race (black race) as well as early life situation such as low birth weight, maternal smoking, and lack of breastfeeding.

***Treating and managing hypertension***

Hypertension does not have cure, however treatment aims at keeping blood pressure within the required range. Hypertension is usually treated to achieve a blood pressure of below 140/90 mmHg. Various approaches are applied in managing hypertension.

a. **Lifestyle modification:** Lifestyle changes are the first line of treatment in hypertension and they include dietary changes, physical exercise, and weight loss (Semlitsch, Jeitler, Berghold, Horvath, Posch, Poggenburg, & Siebenhofer, 2016). Diet that have a low sodium conten and a vegetarian diet are beneficial. Also physical activity is recommended for individuals with hypertension. These have all been shown to significantly reduce blood pressure in people with hypertension.
b. **Medication:** Antihypertensive medications are available for treating hypertension. Medications for hypertension include thiazide-diuretics, calcium channel blockers, angiotensin converting enzyme inhibitors and angiotensin receptor blockers (James et al., 2014). These medications help restore blood pressure values to pre-treatment levels (Chen, Heran, & Wright, 2009).

Other hypertension treatment programmes aim to reduce psychological stress that cause hypertension by applying biofeedback and transcendence mindfulness meditation.

***Preventing hypertension***

The British Hypertension Society guidelines proposed certain lifestyle alterations that are in line with a set of procedures proposed by the United

States National High Blood Pressure Education Program in for the primary prevention of hypertension (Williams, Poulter, Brown, Davis, McInnes, Potter, & Thom, 2004). They include:

a. Maintaining normal body weight for adults
b. Reducing dietary sodium intake
c. Engaging in regular aerobic physical activity such as brisk walking
d. Limiting alcohol consumption , and
e. Consuming a diet rich in fruit and vegetables.

These guidelines are recommended everyone but mostly for groups at high risk for hypertension including those with a high-normal blood pressure, a family history of hypertension, African American (black) ancestry, overweight or obesity and sedentary lifestyle.

**Psychological distress**

Psychological distress is a common mental health problem in the society (WHO, 2001). Psychological distress is a general term that is used to describe unpleasant thoughts and emotions that impacts an individual's level of functioning negatively (Sue, Sue & Sue, 2006). Psychological distress is term utilized, both by some mental health professionals and users of mental health services, to depict a scope of indicators and experiences of an individual's internal life that are normally held to inconvenience, befuddling or out of the ordinary (Goldberg, 2000; Drapeau et al., 2012; Arvidsdotter, Marklund, Kylén, Taft, & Ekman, 2016). Psychological distress has a more extensive degree than the related term mental illness. Mental illness alludes to a specific set of medically characterized conditions (Goldberg, 2000).

***Signs and symptoms of psychological distress***

Psychological distress is complex condition which has a host of signs and symptoms. It however is typically characterised by:

a. **Depression:** An individual with psychological distress is like to experience a depressive mood. The individual tends to extremely sad and overwhelmed, typically losing interest in activities and relationships that used to bring pleasure (Getzfeld, 2010). Depression may also lead to changes in eating habits which could result in weight loss or weight gain. Sleep disturbance, problem with concentration and decision making is also common in depression (Sue et al., 2006).

b. **Anxiety:** Anxiety is also another reaction related to psychological distress. It is a state of uncontrollable heightened tension in which the individual feels a sense of dread and doom (Sue et al., 2006). This state is characterized by increased heart rate, dry mouth, rapid breathing and sweating (Comer, 2010).

c. **Confusion:** Confusion describes a mental state of disorientation and an inability to think clearly (Sue et al., 2006). An individual with psychological distress has difficulty making decisions and trouble with logical thinking.

d. **Rage:** Extreme form of anger which may be characterized by intense violence and aggressive behaviour in an individual (Linehan, 2018). Psychological distress can trigger the feeling of rage in an individual with no violent or aggressive trait.

e. **Hallucination:** Additional symptom of psychological distress is hallucination. Hallucination is a perception in the absence of external stimulus that has qualities of real perception (Getzfeld, 2010). Hallucinations could be visual or auditory.

A review of the literature on psychological distress identified five defining characteristics of patients living with psychological distress: perceived inability to cope, changes in emotional status, discomfort, communication of discomfort and harm (Ridner, 2004). Other literature also report demoralization and pessimism towards the future, anguish and stress, self-depreciation, social withdrawal and withdrawal into oneself as well as stress (Arvidsdotter et al., 2016). These symptoms often coexist with common somatic complaints and a wide range of chronic conditions as well as with medically unexplained syndromes (Arvidsdotter et al., 2016).

It should be noted that though these symptoms may be present in an individual, certain conditions would be taken into consideration before he or she is diagnosed as having psychological distress. For example the conditions that trigger the symptoms, content of symptoms, context and consequence of behaviour as well as the duration of the symptoms would be considered before diagnosis.

***Causes and risk factors of psychological distress***

Psychological distress is a complex psychological condition thus it is difficult of ascertain its main causes and risk factors. However, environmental and biological factors have been implicated as major risk factors that facilitate the condition.

a. **Environmental factors:** Psychological distress is believed to be causes by certain environmental determinants such as stress and trauma. Stress has been defined as the feeling of psychological and physical strain or pressure (Gianaros, & Wager, 2015). This could be due to unemployment, inability to adapt to the environment, conflicts, socio-economic factors among others (Jones, Bright & Clow, 2001). These stressors, depending on their severity can lead to psychological distress. Trauma is also another cause of psychological distress. Trauma is as a result of distressing event that cause physical or psychological damage (Storr, Ialongo, Anthony & Breslau, 2007). Traumatic events like accidents, medical conditions, loss or bereavement and witnessing a traumatic event can lead to psychological problem if not properly addressed (Comer, 2010).

b. **Biological factors:** Biological factors have also been implicated as causes of psychological disorders. These biological causes are mostly related to imbalances in neurotransmitters that are responsible for regulating certain reactions. Depression has been linked to problems or imbalances in the brain with regard to the neurotransmitters serotonin, norepinephrine, and dopamine (Palazidou, 2012). Anxiety is also associated with associated with imbalances in gamma-aminobutyric acid (GABA), norepinephrine and cholecystokinin (Palazidou, 2012).

Another explanation of the causes of psychological distress is given by the diathesis-stress model. The diathesis-stress model explains psychopathology, or its trajectory, as the result of an interaction between predisposition (vulnerability) and a stress caused by life experiences (Ingram & Luxton,

2005). The diathesis interacts with the individual's subsequent stress response and disrupts a person's psychological equilibrium and may catalyze the development of a psychological disorder (Oatley, Keltner, & Jenkins, 2006).

***Treating and managing psychological distress***

Treatment of psychological distress depends on the severity of the condition. Treating psychological distress may require a wide range of approaches in order to effectively manage the condition. Treatment includes psychotherapy to the use of medication or a combination.

a. **Psychotherapy:** Psychotherapy is considered by practitioners as the best treatment option for many people who struggle with psychological problem (Comer, 2010). Several form of therapies like Cognitive Behavioural Therapy (CBT), Acceptance and Commitment Therapy (ACT), Mindfulness based Interventions and Relaxation Therapies have proven useful and effective in treating condition like depression, anxiety and rage in people with psychological distress (Wedding, & Corsini, 2013).

b. **Medication:** In treating psychological distress, medication is used in extreme cases (Imel, Malterer, McKay & Wampold, 2008).These medications are medications are prescription medications and they affect how neurotransmitters work in the brain. The medications used to treat psychological distress are under categorized under Antidepressant, Anxiolytics and Antipsychotics (Imel et al., 2008). Antidepressants include Selective Serotonin Reuptake Inhibitors (SSRIs) and Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs) are effective in treating depression (Stahl, 2008). Anxiolytics

include Benzodiazepine and Barbiturates and are used to treat anxiety while Antipsychotics include typical and atypical antipsychotics are used to treat hallucinations (Stahl, 2008). These medications work by either enhancing the production of certain neurotransmitters or by blocking the reuptake of other neurotransmitters.

c. **Drug Rehabilitation:** In situations where the individual resorts to me use of psycho-active drugs as a way of coping with distress, drug rehabilitation may the applied in order help the individual return to normal or near normal functioning without the use of the drugs (McKetin, Lubman, Lee, Ross, & Slade, 2011). Rehabilitation process includes drug detoxification, counselling and relapse prevention.

**Resilience**

Emmy Werner was one of the early scientists to use the term resilience in the 1970s. The first research on resilience was published in 1973. The study used epidemiology, to uncover the risks and the protective factors that now help define resilience. Resilience is widely understood as a positive adaptation after an adverse situation (Hopf, 2010). Resilience is present in people who are able to develop mental and behavioral capabilities that allow them to withstand difficult situations without long-term negative consequences (De Terte & Stephens, 2014).

***Resilience as a process***

Resilience is often assumed to be a characteristic of an individual; however it is best understood as a process. A number of studies point out that resilience is the result of an individual's ability to adapt and interact with his or her environment and the processes that either promote well-being or protect

him or her against the overwhelming influence of risk factors (Zautra, Hall, & Murray, 2010). Resilience as a process argues that when individuals face adverse situations, they respond in one of three ways: erupt with anger, implode with overwhelming negative emotions and become unable to react or simply become upset about the disruptive change (Siebert, 2005). The first two approaches lead people to adopt the victim role and rejecting any coping methods even after the crisis is over. However, the third approach promotes well-being because those who become upset about the disruptive state change their current pattern in order to cope with the situation (Siebert, 2005). Those who able to adapt to the adverse conditions tend to cope, spring back, and halt the crisis, however, those who respond with negative emotions and behaviour are not able to solve the problems they face (Siebert, 2005).

***Factors associated with resilience***

a. **Positive emotion:** Positive emotion is considered as the lack of negativity. Examples include hope, gratitude, inspiration and love. Studies show that maintaining positive emotions whilst facing adversity promote flexibility in thinking and problem solving. Thus positive emotion is positively associated with resilience (Fredrickson, & Branigan, 2005).

b. **Grit:** This refers to the perseverance for long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007). Grit affects the effort a person contributes by acting on the importance pathway. Grit is associated with differences in potential motivation, and may also influence an individual's perception of task difficulty (Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013).

c. Other factors that are also associated with resilience, like the capacity to make realistic plans, having self-confidence and a positive self-image (Elm, Lewis, Walters, & Self, 2016) developing communications skills, and the capacity to manage strong feelings and impulses (American Psycological Association, 2017) as well as family cohesion and accessibility of prosocial support systems (Masten, & Reed, 2002).

***Building resilience***

The American Psychological Association (2014) suggests ten ways to build resilience:

a. maintain good relationships with close family members, friends and others
b. avoid seeing crises or stressful events as unbearable problems
c. accept circumstances that cannot be changed
d. develop realistic goals and move towards them
e. take decisive actions in adverse situations
f. look for opportunities of self-discovery after a struggle with loss
g. develop self-confidence
h. keep a long-term perspective and consider the stressful event in a broader context
i. maintain a hopeful outlook, expecting good things and visualizing what is wished
j. take care of one’s mind and body, exercising regularly, paying attention to one's own needs and feelings.

## Social support

Social support is understood as the perception and actuality that and individual has assistance from other people, and most importantly, is part of a supportive social group or network (Uchino, Bowen, de Grey, Mikel & Fisher, 2018). Social support could come from various sources, including a family relatives, close friends, intimate partners, pets, community relations and co-workers but is not limited to only these sources (Taylor, 2011). Social support is studied across a wide range of disciplines including psychology, medicine, sociology, nursing, public health, education, rehabilitation, and social work.

### *Types of social support*

Social support can be categorized into four types (Taylor, 2011). They include:

a. **Emotional support:** Also known as esteem support, it involves offering of empathy, concern, love, trust, acceptance, intimacy, encouragement, or caring. It is the warmth and nurturance provided by sources of social support and can let an individual know that he or she is valued.

b. **Informational support:** It is the provision of advice, guidance, suggestions, or useful information to an individual. This type of information has the potential of helping people solve their problem.

c. **Companionship support:** This type of support gives an individual a sense of social belonging. This is seen as the presence of companions and people to engage in shared social activities with.

d. **Tangible support:** This deals with the provision concrete (material) support such as financial assistance, material goods, or services. It is also known as instrumental support.

***Factors associated with social support***

Research conducted on social support and it related factors point out that strong social support is associated with increased resilience. Social support indicators including social connectedness, stronger network ties and perceived supportive communities are key factors that foster resilience in both individuals with and without health related problems (Machisa, Christofides & Jewkes, 2018).

Gender differences have been found in a number studies on social support. Studies suggest that women provide more social support to others and are more engaged in their social networks (Taylor, Klein, Lewis, Gruenewald, Gurung & Updegraff, 2000). Evidence has also supported the notion that women may be better providers of social support and in addition to being more involved in the giving of support, women are also more likely to seek out social support to deal with stress, especially from their spouses (Taylor et al., 2000). However, another study indicates that there are no differences in the extent to which men and women seek companionship, informational, and tangible types of support. Rather, the big difference lies in seeking emotional support (Day & Livingstone, 2003).

Cultural differences have been found to exist in social support. In many Asian and African cultures, the person is seen as more of a collective unit of society, whereas Western cultures are more individualistic and conceptualize social support as a transaction in which one person seeks help

from another (Taylor, Sherman, Kim, Jarcho, Takagi & Dunagan, 2004). In more interdependent Eastern cultures, people are less inclined to enlist the help of others (Taylor et al., 2004).

***Benefits of social support***

Social support improves mental health and is associated with psychological well-being (Taylor, 2011). People with low social support report more sub-clinical symptoms of depression and anxiety than do people with high social support (Ahuja, Hagerty & Townsend, 2018). Also Lack of social support is also strongly related to life dissatisfaction and suicidal behaviour. Other studies document the effects of social support as a coping strategy on psychological distress in response to stressful work and life events (Taylor, 2011).

Social support also has a strong connection with physical health outcomes in individuals, with numerous ties to physical health including mortality. People with low social support are at a much higher risk of death from a variety of diseases including cardiovascular diseases (Uchino, 2009). Other related studies have shown that people with higher social support have an increased likelihood for survival (Holt-Lunstad, Smith & Layton, 2010).

**Conceptual framework**

The conceptual frame work for this study explains how the variable in the study are related and connected to each other. The predictor variable in the study is resilience while psychological distress is the outcome variable. Social support is not a main variable in this study but literature suggests that it can have an influence of both resilience and psychological distress. Thus it has been built into this study as a moderator variable. Moderation implies an

interaction effect, where introducing a moderating variable changes the direction or magnitude of the relationship between two variables. Hence the moderation effect of social support could enhance (where an increase in social support would increase the effect of resilience on psychological distress); buffer (where an increase in social support would decrease the effect of resilience on psychological distress); or antagonize (where an increase in social support would reverse the effect of the resilience on psychological distress). The conceptual framework is depicted in figure 1 below.

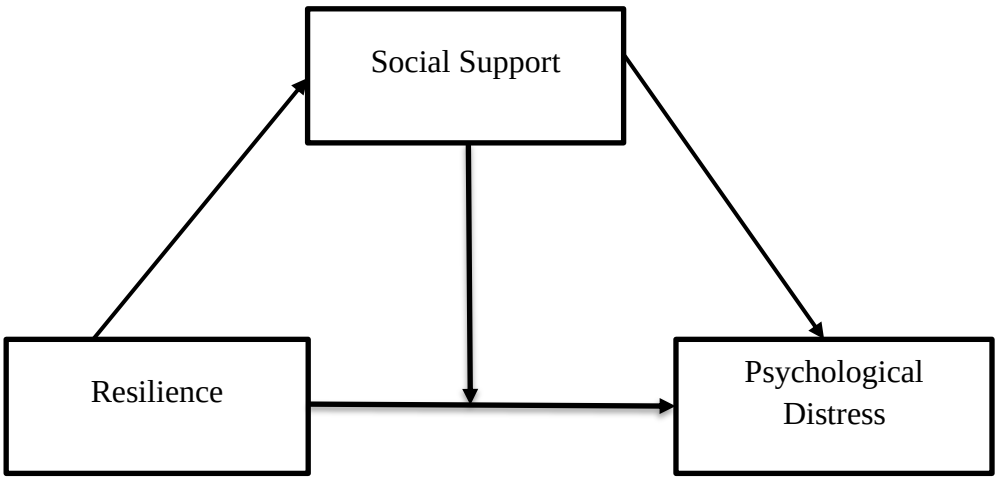


*Figure 1:* Proposed relationship between resilience and psychological distress, with social support as a moderator and mediator

**Empirical Review**

This review covers various empirical studies that are related to this study. The empirical review was done in relation to the research questions and research hypotheses that are guiding this study. The empirical review helps to understand various perspectives of researchers and also aid in the discussion of findings from this study.

**Level of psychological distress in patients with chronic diseases**

A research by Fontana, Hussain, Schwartz, Moyer, Su and Lok (2002) to establish the prevalence of emotional and psychological distress among 220 patients with chronic Hepatitis C attending hepatology clinics in the University of Michigan showed that about 35% of the participant had moderate to severe forms of depression and somatization disorders. Also, broad array of psychological symptoms were observed. All these symptoms signaled the presence of psychological distress in the participants (Fontana et al., 2002).

Describing the prevalence of psychological distress, depression and anxiety in three Australian rural settings and using a total of 1563 participants, Kilkkinen, Kao-Philpot, O'Neil, Philpot, Reddy, Bunker and Dunbar (2007) revealed that psychological distress (anxiety and depression) is prevalent in 31% of men and women who are 45 years and over; also seeking medical attention. Kilkkinen et al. (2007) suggested that health professionals should attend not only to physical health, but also to mental health status of people in this age group.

A meta-analysis on the prevalence of psychological distress among patients with chronic kidney disease by Zalai, Szeifert and Novak (2012) disclosed that symptoms of psychological distress affect approximately 25% patients on hemodialysis and can be associated with low quality of life and increased mortality. They proposed that with the high prevalence of severe psychological distress in patients there is the need integrate psychological screening and intervention in routine renal care.

In a study to determine the prevalence of psychological distress among elderly hypertensive patients in the primary care setting in the Netherlands, Ringoir, Pedersen, Widdershoven and Pop (2014) sampled a total of 605 participants between the ages of 60 and 85 years. Their study revealed that 18% of adults with high blood pressure suffer moderate to severe forms of psychological distress. The study also revealed a relationship between psychological distress and elevated level of blood pressure.

Recent studies to assess the prevalence of psychological distress and to identify problems indicative of high distress in cancer patients across Germany, Mehnert et al. (2018) using a sample size of 3724 participants discovered that one in two cancer patients (52%) have significant levels of psychological distress. The most prevalent problems that participants reported were: fatigue, sleep problems, extreme sadness, and problems getting around. Mehnert et al. (2018) recommended that clinicians identify help distressed patients even if no routine distress screening is available and help patients deal with it.

The empirical studies reviewed shows that indeed psychological distress is prevalent among individuals with chronic health conditions. The prevalence rate from the studies above ranges from 18% to 52% which is an alarming rate. Whereas studies by Kilkkinen et al. (2007) and Mehnert et al. (2018) used large sample sizes other studies used relatively smaller sample sizes (Fontana et al., 2002; Ringoir, 2014). Also, none of the studies above were conducted in Africa or Ghana to be specific; thus the prevalence of psychological distress in patients with chronic conditions is Ghana is unknown.

**Level of resilience in patients with chronic diseases**

With the aim of determining how resilience influences fatigue in a consecutive sample (*n*= 239) of cancer patients treated with radiotherapy in Germany, Strauss et al. (2007) found that resilience was low in patients receiving palliative treatment. Resilience was found to be highly prevalent in about 28% of the study participants. Participants also reported problems with coping. They concluded that resilience is an important psychological predictor of quality of life and coping in cancer patients.

A correlational study to describe the relationship between resilience and glycosylated haemoglobin levels in African-American women with type 2 diabetes by DeNisco (2011) using a voluntary sample of 71 discovered that as 87.4% participants reported moderate to high levels or resilience, 12.6% reported significantly low levels of resilience. The study concluded that majority of the women were resilient and this high level of resilience in an important factor in coping with the diabetes and its related complications.

Min et al. (2013) also assessed the relationship between psychological resilience and emotional distress among cancer patients in South Korea with a total of 152 participants. Finding from the study pointed out that 18-27% of the participants have moderate to low levels of psychological resilience. In conclusion, Min et al. (2013) stated the clinical importance of psychological resilience in predicting the low risk of emotional distress among cancer patients and beneficial resilience can be in maintaining good health.

Recent studies by McGowan, Brown, Lampe, Lipman, Smith & Rodger (2018) in order to understand resilience and physical and mental health among adults with and without HIV across the United Kingdom also

revealed interesting findings. The study was made up of a total of 325 adults with and without HIV. The results show that high levels of resilience was found in 48.4% and 45.6% of adults with and without HIV respectively while moderate to low levels of resilience was found in 51.6% and 54.4% of adults with and without HIV respectively. The researchers submitted that it may be necessary to consider resilience when exploring the well-being of adults ageing with HIV.

In assessing resilience, various empirical literatures have come up with various results and findings. The empirical evidence points out conflicting findings. For example DeNisco (2011) report a high prevalence of high levels of resilience (87.4%); also McGowan et al., (2018) reports high prevalence of high level of resilience. However, studies by Strauss et al. (2007) and Min et al. (2013) report a low prevalence of high levels of resilience among patients with certain chronic conditions 28% and 18-27% respectively. These conflicting results do not give a clear indication on how prevalent resilience is among patients. Again all the studies reviewed were conducted in Europe, America and Asia; thus fuelling the argument that there is little or no empirical evidence in the case of Africa and Ghana specifically.

**Help-seeking behaviour in seeking psychological support**

Analysing helps-seeking behaviours in the United States, Berger, Levant, McMillan, Kelleher and Sellers (2005), observed gender roles and become a barrier to psychological help-seeking. Berger et al. (2005) stated that in the United States and other countries, men often go without psychological treatment due to conflicts between stereotypes of psychological treatment and gender roles Masculine gender emphasizes strength- which is in conflict with

acknowledging and talking through emotional, psychological and interpersonal problems. Theses gender roles also emphasize independence, so even if a problem is acknowledged, males would be more likely to believe they should just “get over it” (Berger, Levant, McMillan, Kelleher & Sellers, 2005).

According to a study Colonna-Pydyn, Gjesfjeld and Greeno (2007), the perceived expense and availability are two of the main help-seeking behaviours that serve as a barrier to psychological treatment. Psychotherapy can be expensive, often costing more than $100 per hour making it difficult or impossible to afford for people without health insurance in the United States of America. Also because therapy may require weekly sessions spanning several months, even middle-class families would have to sacrifice to cover the typical cost of therapy. In addition, clinics where psychological treatment is given are not readily available to individuals who need psychological help (Colonna-Pydyn et al., 2007). An individual may not have any idea where to find they need and thus may give up on seeking treatment for their psychological problems.

Vanheusden, Mulder, van der Ende, van Lenthe, Mackenbach and Verhulst, (2008), also state that other help-seeking behaviours that form a barrier to psychological treatment include minimalization, misunderstanding and mistrust. It is quite common for individuals who avoid treatment by minimalize their condition, meaning that they tend to view their symptoms as less severe than others might believe. Again, some individuals may be impaired to the extent that they do not understand that their condition requires that attention on a professional (Vanheusden et al., 2008). They further stated

individuals may not seek psychological treatment because they do not think it is helpful in treating emotional and psychosocial problem as well as having some form of mistrust towards the psychotherapist.

Studies by Vogel, Wade and Aschemen (2009) reveled that help-seeking behaviours can become a barrier to seeking psychological treatment as result of the stigma related mental health. Even among individuals who believe they need treatment, many resist seeking help because of the negative stereotype associated with psychological disorders (Vogel et al., 2009). They concluded that mental health stigmas affect not only adults' decisions about caring for their own problems, but also their decisions on behalf of their children (Vogel et al., 2009).

Help-seeking behaviour has been defined as the attitude an individual has towards seeking psychological support during hard times. The studies above outline major help-seeking behaviours that serve as barriers to seeking psychological support. Paramount among these behaviours are the perceived expensive nature of psychotherapy, gender roles, lack of understanding of psychological conditions as well as stigma associated with mental-health conditions. Thought these studies level compelling arguments, they however do not consider other factors such as time constraints, cultural and religious constraints as well as the perceived unhelpful nature of psychotherapy. These factors (help-seeking behaviours) have been somewhat ignored by the researchers.

**Relationship between resilience and psychological distress**

The relationship between psychological distress and resilience has be explored some researchers across the globe. For example, with the aim of

assessing the role of resilience on psychological adjustment and physical health in patients with diabetes who were receiving treatment in diabetes, Yi, Vitaliano, Smith, Yi and Weinger (2008), using 111 patients receiving treatment at Joslin Diabetes Center in Boston (USA) discovered that psychological resilience was negatively and significantly correlated with distress ($r$ = -.55, $p$ < .001). Yi et al. (2008) concluded that presence of resilience helps in dealing with symptoms of psychological distress including depression, stress and anxiety in patients with diabetes.

In a study to investigate the relationship between resilience and emotional distress in cancer patients, Min et al. (2013), sampled at total 152 cancer patients receiving treatment in a hospital in Seoul (South Korea). The findings from the study also pointed out that there is a negation relationship between psychological and emotional distress and resilience ($r$ = -.34, $p$ < .001). The study suggests that psychological resilience may independently contribute to low emotional and psychological distress in cancer patients (Min et al., 2013). The researcher recommended psychological interventions to enhance resilience and provide useful approaches to overcome cancer-related psychological and emotional distress.

Furthermore, as study to assess the relationship between psychological distress and resilience in rescue workers in Pakistan also yielded similar results. The study was conducted by Yasien, Abdul Nasir and Shaheen (2016), using a sample size of 100 participants. Pearson product moment coefficient of correlation was applied to analyse the relationship of psychological distress and resilience. Analysis of the result indicated that there is negative relationship between psychological distress and resilience ($r$ = -.203, $p$ < 0.01)

in rescue workers. The negative correlation between psychological distress and resilience indicates that high levels of resilience associated with low levels of psychological distress in individuals.

A cross-sectional observation study aimed at establishing the relationship between resilience, psychological distress and physical activity in cancer patients conducted by Matzka et al. (2016), also had similar findings. Matzka et al. (2016), sampled a total of 343 cancer patients who were receiving treatment at Vienna General Hospital (Austria). The results from the study showed that resilience was inversely correlated with psychological distress ($r$ = -.59, $p$ < .05) in cancer patients. The study also pointed out that cancer patients with higher resilience, particularly older patients, experience lower psycho- logical distress (Matzka et al., 2016).

In a related study by Tian et al. (2016), which was focused on how resilience is associated with psychological distress among patients who have gone through renal transplant, the results also disclosed that resilience was associated with psychological distress after controlling for perceived social support and socio-demographic variables: a one-point increase in resilience decreased the likelihood of having possible psychological distress. The study included a sample size of 139 participants and was conducted in China. In conclusion, the researchers indicated that psychological and psychosocial interventions focused on resilience might provide useful approaches to overcome psychological distress in patients with renal related problems as well as other health conditions.

The empirical evidence provided points out clearly that there is significant relationship between psychological distress and resilience; but this

association is an inverse one. However, whereas studies by Min et al. (2013) and Yasien et al. (2016) report a weak association between psychological distress and resilience, Yi et al (2008) and Matzka et al. (2016). This shows that thought researchers concur on the negative association between psychological distress and resilience; they are not in agreement as so whether this association is weak or moderate. Since most researchers agree that there is a negative relationship between psychological distress and resilience, it was expected that this study would also have similar results; and also establish whether this relationship is a weak, moderate or strong one.

**Social support as a moderator of the relationship between resilience and psychological distress**

A study by Wilks and Croom (2008), tested the moderating role of social support in the relationship between perceived stress and resilience in Alzheimer's disease caregivers. The study included 229 participants sampled from the South-eastern part of the United States. Results from the study showed that social support demonstrated moderation, as it interacted significantly ($\beta$ = -.351, $p$ < .01) with perceived stress on the resilience outcome. Wilks and Croom (2008) stated that the negative effect of stress on resilience lessened upon stress interaction with social support as a moderator. They concluded that recognition of protective resources of resilience such as social support may be of practical use to health care professionals.

In another study by to assess resilience, academic stress and the role of social support among undergraduate social work students, Wilks and Spivey (2010), sampled 145 students from universities in the South-eastern parts of the United States. Results from regression analysis in the study indicated that

Friend support (a form of social support) was the lone moderator among the social support factors, significantly interacting with academic stress ($\beta$ = .184, $p$ < .05), demonstrating a moderation function on stress and resilience. Wilks and Spivey (2010), concluded that the support of friends was deemed protective in the sense that it assuaged the negative impact of academic stress on students' perceived ability to overcome adversity.

A cross-section observational study by Matzka et al. (2016), to determine the relationship between resilience, psychological distress and physical activity among cancer patients also analysed the moderating role of social support in the relationship between resilience and psychological distress. The researchers sampled 343 patients from the Vienna General Hospital (Austria). The results from the study stipulated that the relationship between resilience and psychological distress is not significantly moderated by social support ($\beta$ = .10, $p$ = .12) but was significantly moderated by age ($\beta$ = -.33, $p$ < 0.01). Matzka et al. (2016) concluded that though social support did not moderate the relationship between resilience and psychological distress, social supports helps in coping with adversity as addressed by empirical evidence.

Also Ong et al. (2018), researched on resilience and burden in caregivers of older adults; and the moderating effect of perceived social support. The study included a sample of 285 participants from Singapore. The study revealed that perceived social support did not demonstrate moderating effect as there was no significant association between resilience and burden ($\beta$ = -.014, $p$ > 0.05), and no interaction effect of resilience and perceived social

support on burden ($\beta$ = .000, $p$ > 0.05). The researchers concluded that the importance of social support in health promotion cannot be under estimated.

The moderating role of social support in the relationship between psychological distress and resilience has been examined by researchers over the years. Studies by Wilks and Croom (2008) and Wilks and Spivey (2010) both assert that social support is a significant moderator in the relationship between resilience and psychological distress; meanwhile more recent studies by Matzka et al. (2016) and Ong et al. (2018) report that social support is not significant moderator in the relationship between resilience and psychological distress. Ong et al. (2018) suggest that though social support is not a moderator in the relationship between resilience and psychological distress, social support is a significant mediator in the relationship between psychological distress and resilience. Due to this argument this study sought to confirm whether social support is a significant moderation in the relationship between psychological distress or not.

**Social support as a mediator of the relationship between resilience and psychological distress**

A number of studies have examined the mediating role social support plays in the relationship between resilience and psychological. For instance, the work of Xu and Ou (2014) focused on resilience and quality of life among earthquake survivors and the mediating role of social support. The study used a cross-sectional design. Self-report psychological questionnaires, the standard Chinese 12-item Short Form (SF-12v2), the Resilience Scale for Adults (RSA), and the Social Support Rating Scale (SSRS) were used to assess a total of 2080 survivors from 19 counties in the 2008 Wenchuan Earthquake area. A

regression analysis was conducted to evaluate the mediating effect of social support on quality of life. The results revealed that the association between resilience and quality of life improved after social support was included; suggesting that at least a part of this association was mediated by the level of social support provided (Xu & Ou, 2014).

Ong et al. (2018) examined on resilience and burden among caregivers of older adults; and the mediating role of perceived social support. The study involved a sample of 285 respondents in Singapore. The study applied a cross-sectional survey and data analysis included regression and moderation analyses. The study findings showed that perceived social support demonstrated a significant ($\beta$ = -.136, $p < 0.05$) mediating effect in the relationship between resilience and burden. Thus the indirect effect of resilience on burden was through perceived social support.

There are very few studies that have investigated the mediating role of social support in the relationship between psychological distress and resilience. The studies reviewed above examined the mediating role of social support in the relation between resilience and quality of life (Xu & Ou, 2014) and the mediating role of social support in the association between resilience and burden (Ong et al., 2018). Although these studies reveal interesting findings, they did not explicitly focus on the patients with chronic health conditions such as hypertension, Type 2 diabetes and breast cancer. Again these studies were conducted in Asia and America, with less evidence in the African and Ghanaian perspective. This reveals a gap in research that needs to be addressed.

**Differences in psychological distress in patients with chronic diseases**

A study conducted by Miller, Okun, Fernandez, Jacobson IV, Rodriguez and Bowers (2007) on depression in patients with movement disorders compared levels of depression in patients with Parkinson's diseases, dystonia and essential tremors. A total of 490 participants (354 patients with Parkinson's disease, 83 patients with dystonia, and 53 patients with essential tremors) were selected from the University of Florida Movement Disorders Center (USA) for the study. The results from their one-way ANOVA analysis revealed no significant differences in severity of overall depression symptoms (total Beck Depression Inventory score) across the Parkinson's disease, dystonia, and essential tremor groups $F(2, 386) = 2.01$, $p < .01$). They recommended that Clinicians should be aware that depression is a frequent problem in dystonia and essential tremor, in addition to Parkinson's disease, and inquire about depression symptoms in these patients so that they can be appropriately treated.

Nekouei, Yousefy, Manshaee and Nikneshan (2011) also conducted a research to compare depression and anxiety in cardiac patients and patients with other conditions apart from cardiac illness. Thus they sampled a total of 109 (53 cardiac patients and 56 non-cardiac patients) from the Chamran Hospital in Isfahan (Iran). Independent sample t-test analysis showed a significant difference between the depression and anxiety of cardiac patients and non-cardiac patients ($p < 0.001$). Moreover, the differences between the amount of obvious anxiety and hidden anxiety in the two groups were significant ($p < 0.001$ for both). Nekouei et al. (2011) concluded that cardiac

disease causes anxiety in patients, therefore evaluating this anxiety and applying proper techniques to reduce this anxiety is necessary.

In a related study, Goh, Wong, Zaroff, Shafaee and Lundstrom (2016) also compared anxiety and depression in patients with Takotsubo stress cardiomyopathy (sudden weakening of the muscular portion of the heart) to those with acute coronary syndrome. The researchers sampled 73 Takotsubo Stress Cardiomyopathy patients and 111 acute coronary syndrome patients ($n$ = 184) from Singapore. The results from their Independent sample t-test showed that a significant difference in the levels of anxiety in patients with Takotsubo stress cardiomyopathy and acute coronary syndrome (t = 2.51, $p$ = .05) however there was no significant difference in the levels of depression in the patients (t = 1.05, $p$ = .26). They concluded that patients who present Takotsubo stress cardiomyopathy with have higher levels of anxiety than those with acute coronary syndrome but not depression. They also recommended that attention should be paid to treating anxiety and depression in these patient groups.

The empirical studies reviewed on the difference that exists among patients with different chronic condition on psychological distress. Some studies state categorically that the type of condition one has influence that level of psychological distress experience but other studies argue that no matter the kind of health condition on has, the level of psychological distress is the same. This depicts a disagreement in the findings of various research studies; thus findings on this subject are inconclusive. Also, majority these study were conducted in Europe, America and Asia, with no known literature on the nature of this phenomenon in Africa and Ghana.

**Differences in resilience in patients with chronic diseases**

Investigating psychological resilience in the older adults as compared with that of the young ones, Gooding, Hurst, Johnson and Tarrier (2012) found significant results. 120 participants made up of 60 older adults and 60 younger adults were sampled from communities in the UK and the University of Manchester respectively. The findings from the study pointed older adults have higher levels of resilience ($M$ = 52. 12, $SD$ = 7.25) than younger adults ($M$ = 48.20, $SD$ = 5.05). This result was significant ($p < .001$). Older adults showed resilience in related problem solving and emotional regulation. However, resilience related to social support was higher in the young adults compared with that of the older adults. These results highlight the importance of maintaining resilience-related coping skills in both young and older adults but indicate that different psychological processes underlie resilience across the lifespan (Gooding et al., 2012).

Ma et al. (2013) also studied the relationship between health-promoting behaviors and resilience in patients with chronic kidney disease (CKD) using a total of 150 patients sampled from nephrology outpatient clinic in northern Taiwan. The researchers compared three subgroups within the sample (High risk CKD patients, Early CKD patients and Pre-end stage CKD patients). The pre-end stage group obtained a lower resilience score ($M$ = 130.7, $SD$ = 22.1) than the other groups when compared with other patients ($p < .01$). Ma et al. (2013) recommended that health-care providers should focus on developing resilience and health promotion advocacy throughout the life of not only patients but also their families.

A meta-analysis by Gheshlagh et al. (2016) shows that cancer patients and patients with cardiovarscular conditions have a higher level of resilience than patients with other diseases such as diabetes. Gheshlagh et al. (2016) found a significant mean difference among the three groups ($p < .05$). In terms of diseases, the mean resilience score of cancer patients was 79.6 whereas it was 77.8 for cardiovascular disease patients and 64.6 for patients with other diseases. The results from the meta-analysis suggest that apparently, the more lethal the disease, the higher the patients' resilience to reduce the negative effects of the disease. Resilience, together with feelings of control and capability, make patients feel that they have control over the disease and that they are capable of taking medicine and preserving their own therapeutic diet (Gheshlagh et al., 2016).

Empirical provided on the difference that exists among patients with different chronic condition on resilience show consistent results. All the studies state categorically that the nature (type) of a patients' affects that level of resilience that the patient has. Though according to researchers there is an agreement on how the type of disease affects, it is difficult to state that the case is the same or similar in Africa. This is because the studies with these findings were conducted outside Africa and thus can be argued that the findings are context bound.

**Level of education and resilience**

A study by Bonanno, Galea, Bucciarelli and Vlahov (2007) using a large sample of participants ($n$ = 2,752) studied the predictors of resilience in individuals after a disaster. The study was conducted in the New York are after the September 11$^{th}$ 2001 terrorist attack. A number of socio-demographic

factors were implicated as predictors of resilience in the study participants. However, a multivariate regression analysis also showed that level of education also significantly ($t = 22.61$, $p < .05$) predicts resilience. Bonanno et al. (2007) recommended that further research should be conducted in the area of resilience and effective intervention strategies should be put in place to help people develop resilience.

Again a study by Ma et al. (2013) which was aimed as assessing the relationship between health-promoting behaviours and resilience in patients with chronic kidney disease also how level of education influenced an individual's level of resilience. The study included 150 participants and was done in Taiwan. The results from the study pointed out that the patients with higher education level (above high school) have a higher resilience score when compared with patients with lower education levels ($x^2 = 7.714$, $p < .05$). Level of education was also significantly correlated with resilience ($r = .349$, $p < .05$ Ma et al. (2013), concluded that education is one of the key factors in building resilience.

Ikizer, Karanci and Doğulu (2016) also explored factors associated with psychological resilience among earthquake survivors from Turkey. A total of 360 adult earthquake surviviours living in Van (Turkey). The findings from the study revealed that a higher level of education was found to be associated with higher levels of stress-coping ability. Education was previously shown in many empirical studies to be associated with higher resilience. It was recommended that comprehensive support should to given to indidviduals who have suffered trauma as result of a disaster in order to help build resilience and cope with adversity.

Level of education has ben associated with an individuals ability to develop resilience in the face of adversity. The empirical evidence point out that higher level of education is associated with high level on resilience. Two of these studies were conducted with none-patients but with individuals who have experienced some kind of natural disaster. Thus the question remians whether this is the same with patients suffering from particular health condition. Though the stdu by Ma et al. (2013) focused on patients with kidney disease, it however not enough to generalize thee findings to patients with other kinds of health conditions.

**Employment status and resilience**

A Scientific investigation to assess how socio-demographic and childhood environmental predicts resilience in a community sample by Campbell-Sills, Forde and Stein (2009) using 764 participants in the USA who have experience maltreatment in childhood. The results from the study pointed out several socio-demographic factors that predict resilience in the study participants. Employment status which was related to level of income was a major predictor of resilience. Also the finding from the regression analysis revealed that 11% of the time, socio-demographic factors (gender and level of education) combined to predict resilience in people who have experience childhood maltreatment and trauma. However employment status was not a significant predictor of resilience. Campbell-Sills et al. (2009) also argued that other variables to influence a person's resilience to stress.

Also, in the study by Ma et al. (2013) to explore the relationship between health-promoting behaviours and resilience in patients with chronic kidney disease (CKD), the researchers also tried to examine the effect of

employment status on the resilience level of 150 patients in Taiwan. The result from the data analysis showed significant a difference in the level of resilience in employed and unemployed participants ($x^2$ = 6.818, $p$ < .05). Also in the subgroups, both early patients with CKD and those with end-stage renal disease who were employed reporting a higher resilience score than unemployed patients ($t$ = 2.422, $p$ < .05 and $t$ = 4.479, $p$ < .001 respectively) than those at risk of developing CKD. Ma et al. (2013) advocated for the incorporation of psychological interventions to help develop resilience in patients.

In exploring factors associated with psychological resilience among earthquake survivors from Turkey, Ikizer, Karanci and Doğulu (2016) also sampled total of 360 adult earthquake survivors living in Van (Turkey). The researchers also tried to figure out how employment status influenced resilience. The results from the study revealed showed a significant difference in level of resilience in employed and unemployed participants ($t$ = -2.41, $p$ < .05). The researcher concluded that employment status which is a source of income has the capacity of maintaining resilience in adverse situations which can be managed with income.

Finally, a more recent study by Heinz, Meffert, Halvorson, Blonigen, Timko and Cronkite (2018) revealed consistent results. Heinz et al. (2018) focused on exploring employment characteristics, work environment, and the course of depression over 23 years and also establish whether employment fosters resilience in patients diagnosed with depression. The results revealed that employment at baseline was associated with lower levels of depression at baseline and less severe life courses of depression. Among employed

participants, higher occupational prestige, a more supportive work environment and lower work stress may protect against more severe, intractable depression over time and may have bolstered their functioning and resilience. Heinz et al. (2018) concluded that the finding from their study could be translated in to vocational rehabilitation and also clinician can guide patient decision making about how to reduce vulnerability to depression and foster resilience via employment.

In assessing how patients employment status influences their level of resilience, the studies reviewed found point out discrepant results. For instance the study by Cambell-Sills et al. (2009) revealed that employment status is not a significant predictor of resilience in patients who have experienced some trauma. On the other hand, studies by Ma et al. (2013), Ikizer et al. (2016) and Heinz et al (2018) all concur that employed individuals have higher levels of resilience than those who are unemployed. Thus it is imperative to confirm the assertion of these researchers.

**Chapter Summary**

This chapter reviewed related literature that is relevant to this study. This chapter defined the theoretical review of this study emphasizing the cognitive theory of psychopathology, resiliency theory and the Biopsychosocial (spiritual) model. The chapter also defined the variables in the study and how they are related to each other. It also revealed varying empirical findings of studies done in Africa, Asia and Europe patients and non-patients. The findings from the review are considered relevant in discussing the findings from this study. The next chapter presents the Research Methodology.

# CHAPTER THREE

# RESEARCH METHODS

This study aimed at assessing psychological distress as well as resilience among patients with chronic health condition, and the barriers that prevent them from seeking psychological help. The previous chapter reviewed theories and concepts related to the study and also empirical studies that have been conducted in the area. This chapter outlines the various research methodologies that would be applied in the study.

## Research Design

Conducting a research requires the application of a research approach. There are three major research approaches: quantitative research which is the systematic empirical investigation of observable phenomena via statistical, mathematical, or computational techniques (Given, 2008), qualitative research which inquires deeply into specific experiences, with the intention of describing and exploring meaning through text, narrative, or visual-based data, by developing themes exclusive to that set of participants (Glesne, 2011). The third paradigm is the mixed method which combines both quantitative and qualitative methodologies, thus using both statistical and exploratory approaches (Cohen, Manion, & Morrison, 2011). This study is under the quantitative research paradigm. Under the quantitative paradigm there are various research designs or approaches such as the experimental design, quasi-experimental design, correlational design and descriptive designs (Creswell, 2013).

This study applies the descriptive survey; more specifically the cross-sectional design and makes use of both descriptive and inferential analytical approaches to data analysis. Cross-sectional design gathers data from a population at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationships that exist between specific events (Cohen et al., 2011). Thus, cross-sectional may vary in their levels of complexity from those that provide simple frequency counts to those that present relational analysis (Cohen et al., 2011). The cross-sectional design was chosen because it provides a high level of general capability in representing a large population (Creswell, 2013). As compared to other methods of data gathering, surveys are able to extract data that are near to the exact attributes of the larger population. Again, cross-sectional design has good statistical significance because it is highly representative; thus it is often easier to find statistically significant results and yields higher validity and reliability than other research designs (Creswell, 2013). Also, cross-sectional design is highly objective and multiple variables can be effectively analysed (Bernard, 2013). Despite its strengths, the descriptive survey design has certain weaknesses. For example, it is possible that participants or subjects may not be truthful with their responses (Grimes & Schulz, 2002), and also the cross-sectional design has poor control due to the large sample thus participants may not answer honestly, written responses may not be truly representative of actual behaviour (Punch, 2013). The strengths of the cross-sectional design outweighs its weaknesses and has proven to be an effective design in quite a number of reliable academic and social research studies; due

to this the cross-sectional design is the most appropriate design for this study.

**Study Area**

The major study area for this research is the Cape Coast Metropolis. Cape Coast is the administrative capital of Cape Coast Metropolitan District and Central Region of south Ghana. Cape Coast is situated on its south to the Gulf of Guinea. According to the 2010 population census in Ghana, Cape Coast had a settlement population of 169,894 people (Ghana Statistical Services, 2012) and the native language of the people of Cape Coast is Fante. However most people in Cape Coast can read, speak and understand simple English language and terminologies. Cape Coast is mostly a fishing community but has other smaller farming communities in its surrounding areas. The city has a number of second cycle institutions like Mfantsipim Senior High School and major tertiary institutions like the University of Cape Coast. Cape Coast is home to the Cape Coast Teaching Hospital (CCTH), popularly known as "Interberton" which is also the Central Regional Hospital. The Cape Coast Teaching Hospital was chosen because majority of chronic health cases are referred form neighbouring towns and villages for treatment and management at the Cape Coast Teaching Hospital. The city is made of adults and children of varying ages and ethnic backgrounds.

**Population**

A research population is generally a large collection of individuals or objects that is the main focus of a scientific query (Creswell, 2013). All individuals or objects within a certain study population usually have a common, binding characteristic or trait. Research population is basically divided into two: the target population and the accessible population. The

target population for a survey is the entire set of units for which the survey data are to be used to make inferences. Thus, the target population defines those units for which the findings of the survey are meant to generalize (Cohen et al., 2011). The accessible population on the other hand is the population in research to which the researchers can apply the conclusions of the study. This population is a subset of the target population (Cohen et al., 2011). It is from the accessible population that the sample for the study is drawn. The target population for this study is all individuals with any form of chronic health condition while the accessible population is Type 2 diabetic, breast cancer and hypertensive patients receiving treatment at the Cape Coast Teaching Hospital.

Information obtained from the records section of Cape Coast Teaching Hospital clarifies the number of individuals with breast cancer, Type 2 diabetes and hypertension receiving treatment at the facility. Table 1 below shows the number of patients who form accessible population.

Table 1- *Number of patients with type 2 diabetes, breast cancer and hypertension receiving treatment at CCTH*

| Health Condition | Number of patients |
|---|---|
| Type 2 Diabetes | 785 |
| Breast Cancer | 400 |
| Hypertension | 884 |
| Total | 2069 |

Source: Cape Coast Teaching Hospital Records, 2018

Table 1 shows the estimated number of patients with the health conditions under study. The total number of diabetes, hypertension (2069) forms the accessible population for this study.

**Sampling Procedure**

Scientific research requires that when the whole population cannot be studied, there is the need to select some members of the accessible population, study them and make generalizations and inferences to the population. This subset that is selected from the accessible population and is the sample, and the process used in selecting the sample is the sampling procedure (Creswell & Creswell, 2018). According to Creswell (2013) there are a variety of sampling procedures, but they are grouped under two main methods: probability and non-probability sampling methods. In probability sampling, every unit in the population has a chance (greater than zero) of being selected in the sample, and this probability can be accurately determined (Saunders & Thornhill, 2007). Most common probability sampling procedures include: simple random sampling, systematic sampling, stratified sampling probability proportional to size sampling and cluster sampling (Kothari, 2004). With non-probability sampling on the other hand, some elements of the population have no chance of selection, or where the probability of selection cannot be accurately determined (Creswell, 2013). It involves the selection of elements based on assumptions regarding the population of interest, which forms the criteria for selection (Saunders and Thornhill, 2007). Common methods of non-probability sampling include: convenience sampling, quota sampling and purposive sampling.

This study employs the use of multi-stage sampling. Multistage sampling is the selecting of samples in phases using smaller and smaller sampling elements at every stage. Multistage sampling can be a multifaceted form of cluster sampling since it is a form of sampling which involves

dividing the population into groups (Sedgwick, 2015). The stratified sampling technique which is a type of probability sampling was used at the first stage of sampling. Stratified sampling technique is a type of probability sampling. Stratified sampling involves dividing the population into homogenous groups, each group containing subjects with similar characteristics (Cohen et al., 2011). Stratified sampling is selected because members of the accessible population would be divided into homogeneous subgroups before randomly sampling from the subgroups. Thus in this study, chronic diseases is the strata (main population) but is divided into three subgroups which is patients with cancer, diabetes and hypertension. Stratified sampling technique is also the most appropriate sample procedure to use in this study because it would ensure that all the various subgroups are fairly represented in the study sample (Cohen et al., 2011). Again, with this technique, there is a higher statistical precision compared to simple random sampling (Kothari, 2004).

The convenience sampling techniques was used during the second phase of sampling. Convenience sampling is a form of non-probability sampling method in which the sample is drawn from a group of people easy to contact. This method of sampling is often referred to as availability sampling (Saunders, Lewis & Thornhill, 2012). The convenience sample techniques was used to select respondents (patients) during their clinic days at the Cape Coast Teaching Hospital

To arrive at a suitable sample size for the study, Mugenda and Mugenda (2003) suggest that 10% to 20% of the accessible population is an appropriate sample for a survey descriptive study. With an accessible population size of 2069 and based on Mugenda and Mugenda (2003)

procedure for sample size determination, the sample size for the study is 207. However it sample size is increased to 220; because in order to cover for non-return rate Cohen, Manion and Morrison (2004) suggest that the sample size can be increased up to half of the original sample size. To have a fair representation of all the subgroups in the sample the proportion for each subgroup is calculated. The proportional distribution of participants is illustrated in Table 2.

Table 2- *Proportional distribution of participants for the various diseases*

| Health Condition | Number of patients | Percentage (%) | Proportion |
|---|---|---|---|
| Type 2 Diabetes | 785 | 38 | 83 |
| Breast cancer | 400 | 19 | 42 |
| Hypertension | 884 | 43 | 95 |
| Total | 2069 | 100.0 | 220 |

Table 2 shows the proportion and the number of participants for each of the subgroups that are involved in the study.

**Inclusion Criteria**

Participants who were involved in the study were 18 years and above. Also, the participants involved had been diagnosed of only one of the three chronic health conditions under study. This is because the researcher wanted to ensure that the patient groups involved are mutually exclusive.

**Data Collection Instruments**

The data collection instrument for this study was a well-structured questionnaire. A questionnaire is an instrument or tool which consists of a written list of questions for collecting data. It requires respondents to read and

interpret and then write down answers to satisfy the objective of the study (Howitt, 2010). The questionnaire was chosen because it is less expensive and offer greater anonymity or confidentiality especially when sensitive issues are involved. It is also useful when studying a large sample (Cohen et al., 2011). In spite of these strengths, the questionnaire has several weaknesses which includes low response rate, lack of opportunity on the path of the researcher to clarify issues that respondents are not clear about (Howitt, 2010). The questionnaire for the study consisted of various standardized and non-standardised inventories, with the aim eliciting various forms information from the research participants. The instruments used are further explained below:

***Kessler (K10) Psychological distress scale***

Psychological distress was assessed using adapted version of Kessler Psychological Distress Scale (K10). Kessler Psychological Distress Scale is a 10-item self-report inventory developed by Ronald Kessler in 2001 is and intended to yield a global measure of psychological distress (Kessler et al., 2002). The instrument is on a five point Likert scale which requires the respondents to rate how often they experience certain symptoms related to distress. The Likert responses ranges from 1 to 5 (1 = none of the time, 2 = a little of the time, 3 = sometimes, 4 = most times and 5 = all the time). The highest score one can obtain on the K10 is 50 (high psychological distress) while the lowest score is 10 (low psychological distress). The instrument is scored as follows:

a. 10 - 19: Likely to be well
b. 20 - 24: Likely to have a mild disorder

c. 25 - 29: Likely to have a moderate disorder

d. 30 - 50: Likely to have a severe disorder

The instrument is well established and is widely used by clinicians as well as researchers. K10 has a Cronbach alpha ranging from 0.74 to 0.88 across Asian, American and African samples as well as military populations (Baillie, 2005; Andersen, Grimsrud, Myer, Williams, Stein, & Seedat, 2011; Easton, Safadi, Wang & Hasson, 2017; Sampasa-Kanyinga, Zamorski, & Colman, 2018). This points out that the instrument has a high internal consistency and is very reliable. K10 was selected because it is widely used and is a strong measure for psychological distress.

***Conner-Davidson Resilience Scale (CD-RISC-10)***

An adapted version of the 10-item Connor-Davidson Resilience Scale (CD-RISC-10) which was developed by Campbell-Sills and Stein (2007) refined from the original 25 item Connor-Davidson Resilience Scale (CD-RISC-25) by Connor and Davidson (2003) was used to assess resilience. Since its development, the CD-RISC-10 has been tested in several contexts with a variety of populations. The CD-RISC-10 is a one-dimensional self-report instrument on a 5-point Likert scale (0 to 4) which requires respondents to rate the extent to which the statements provided are true about them. The Likert response range from 0 to 4 (0 = not true at all, 1= barely true, 2 = a little true, 3 = quite true and 4 = completely true). The highest score to be obtained on the CD-RISC-10 is 40 (high resilience) while the lowest score that can be obtained is 0 (low resilience). CD-RISC-10 is scored as follows:

a. 0 - 12: Low resilience

b. 13 - 25: Moderate resilience

c. 26 - 40: High resilience

According to Notario-Pacheco et al. (2014), the CD-RISC-10 demonstrated high test-retest reliability when used in assessing a clinical sample in Spain ($r$ = .89, $p$ < .05). The internal consistency of the CD-RISC-10 ranges from .88 to .95 in Asian and American samples (Gonzalez et al., 2016; Shin et al., 2018). Also, the internal consistency (Cronbach alpha) also ranged from .79 to .97 in clinical samples (Notario-Pacheco et al., 2014). This scale was chosen because it is reliable, widely used and easy to comprehend.

***Multidimensional Scale of Perceived Social Support (MSPSS)***

The Multidimensional Scale of Perceived Social Support (MSPSS) by Zimet, Dahlem, Zimet and Farley (1988) was used to collect data on social support. MSPSS is a 12-item self-report inventory that assesses an individual's level of social support: whether high, moderate or low (Zimet et al., 1988). The scale has three subscales and the items relate to the source of the social support, namely family, friends or significant other. The MSPSS is a 7 point Likert scale. The Likert responses on MSPSS ranges from 1 to 7 (1= Very Strongly Disagree, 2= Strongly Disagree, 3= Mildly Disagree, 4= Neutral, 5= Mildly Agree, 6= Strongly Agree and 7= Very Strongly Agree). According to Wongpakaran, Wongpakaran and Ruktrakul (2011), the MSPSS has a Cronbach alpha of 0.91 and a test retest reliability of 0.84. The instrument also has moderate construct validity (Zimet et al., 1988). Also Zhou et al. (2015) state that MSPSS has an overall Cronbach alpha of 0.92 (subscales range: 0.84 to 0.89) when applied to an Asian sample and also has a convergent validity of 0.68 when administered to a Chinese sample. The MSPSS has acceptable

reliability and convergent/discriminant validity, easy to understand and complete and is appropriate for this study.

***Attitude Towards Seeking Psychological Help Scale (ATSPHS)***

Finally, help seeking behaviours to seeking psychological help in participants was measured using and adapted version of the Attitude Towards Seeking Psychological Help Scale (ATSPHS) by Fischer and Farina (1995). This scale is a 10-item self-report inventory that requires a respondent to select the extent to which they agree or disagree with the statements that have been provided. The ATSPHS is a 4 point Likert scale. The Likert responses on ranges from 1 to 4 (1= Strongly Disagree, 2= Disagree, 3= Agree and 4= Strongly Agree). The items cover themes such as expense and availability of psychological services, minimalisation of psychological problems, stigma related to mental health, lack of adequate information on psychological services among others. Though this scale has been available for over a decade it is sparsely used in African samples. The estimate of Cronbach's alpha reliability coefficient for the overall ATSPHS with the Jamaican American sample is $\alpha = 0.87$. This result represents strong reliability for the scale and could be applied to a Ghanaian sample.

The questionnaire is divided into five sections. Section A consists of items that elicited demographic data such gender, age, level of education, and employment status. Section B is made up 10 items adopted from the K10 that measured psychological distress in the participants while Section C consisted of 10 items from the CD-RISC-10 which assessed resilience in the participants. Section D also consist of 12 items adopted from the MSPSS which assessed social support and Section E was made up of 10 items that

aimed to gather information on the psychological help-seeking behaviours of participants. The questionnaire was made up of a total of 46 close-ended items (see Appendix D for full data collection instrument). The instrument was subjected to pilot-testing before actual data collection begun.

**Pilot-testing of Instrument**

To ascertain the reliability of the research instrument, the research instrument was subjected to pilot-testing. Pilot-testing is a small-scale trial, where a few respondents answer a research instrument and comment on the feasibility and mechanics of the test research instrument (Thabane et al., 2010). Pilot-testing was done with 40 hypertensive and diabetic patients receiving treatment at the University of Cape Coast hospital. These 40 participants were only used in the pilot-testing of the instrument and were not included in the sample for the study. Results from the reliability analysis of the various instruments used are shown in Table 3 below.

Table 3- *Reliability test from pilot-testing of research instruments*

| Scale | Cronbach alpha |
|---|---|
| Kessler's Psychological distress scale (K10) | .945 |
| Connor-Davidson resilience scale (CDRISC-10) | .939 |
| Multidimensional Scale of Perceived Social Support | .761 |
| Attitude Towards Seeking Psychological Help Scale | .725 |

Source: Field survey, 2019

The results in Table 3 show the reliability coefficients of the various instruments used in the study. The results show that all the instrument have high internal consistency and thus implies that instruments are reliable.

**Data Collection Procedure**

An introductory letter (see Appendix A) and ethical clearance (see Appendix B) was acquired from the Department of Education and Psychology, and the Institutional Review Board in the University of Cape Coast respectively and delivered to the Cape Coast Teaching Hospital. Also ethical clearance and approval (see Appendix C) was acquired from the Ethical Review Board of the Cape Coast Teaching Hospital and various units involved after the researcher was taken through the required procedures. Contact was made with the various unit heads to be allowed to conduct the survey with the patients during clinic hours. The researcher personally sent the data collection instruments to the study setting. The researcher briefly introduced the topic, the purpose of the research and the importance of the study to the participants. The participants were assured of confidentiality and voluntary participation was elicited. The questionnaires were self-administered the researcher to patients who accepted to participate in the survey. The questionnaire was administered in the English language. The researcher helped participants who could not understand some of the information on the questionnaire by explaining and interpreting when appropriate. After, the participants answered the questionnaires; they were collected by the researcher. The acquired data was kept confidential. There was no identification information on the questionnaire thus the questionnaires filled anonymously by the participants. Participants took about 25 to 35 minutes to complete the questionnaire. Equivalent and proportionate number of questionnaires was administered to each of the subgroups. Data collection took approximately 8 weeks; with the help of an assistant.

**Data Processing and Analysis**

When data collection is complete it is important to subject the data to statistical analysis and interpretation. Data collected from the survey was organized and categorized using the Statistical Package for Social Science (SPSS version 22). The total score of responses on psychological distress scale (K10) was calculated and coded based on the interpretation of Ronald Kessler and the responses on the resilience scale (CD-RISC-10) was computed and coded based on the scoring and interpretation of Kathryn Connor and Jonathan Davidson. Also, the social support scale (MSPSS) was scored and coded based on the interpretation of Zimet et al. (1988). The composite scores of the various inventories were calculated in order to aid parametric data analysis. Statistical analysis consisted of both descriptive and inferential analysis of the responses provided.

Data on research questions 1 and 2 was analysed using descriptive analyses, more specifically frequencies and percentages. This is because the researcher sought to determine the level of psychological distress and resilience in the participants. Also, frequencies and percentages showed the number of participants had high, moderate or low psychological distress as well as resilience. Data on research question 3 was analysed using means and standard deviations to analyse each item on psychological help-seeking behaviours. Thus the items with the highest means were considered as the major help-seeking behaviour of the participants.

Data on research hypotheses 1 was analysed using linear regression. This is because the researcher aimed at determining the relationship that exists between two continuous variables: resilience and psychological distress.

Linear regression was also used into to establish the extent to which resilience predicts psychological distress. Data on research hypothesis 2 was analysed by conducting a moderator analysis using PROCESS by Andrew F. Hayes (a function in SPSS). Moderator analysis showed the interaction effect social support has on the relationship between psychological distress and resilience. Data on research hypothesis 3 was analysed by conducting mediation analysis also using PROCESS. Mediation analysis showed the indirect effect of resilience on psychological distress. Thus presenting how resilience affects psychological distress through social support. Both moderation and mediation analyses were conducted using 5,000 bootstrap samples. In statistical analysis, bootstrapping is a metric that relies on random sampling with replacement. Bootstrapping allows assigning measures of accuracy (defined in terms of bias, variance, confidence intervals, prediction error or some other such measure) to sample estimates thus making the results more reliable (Efron, 2003).

Research Hypotheses 4, 5 and 6 were tested by conducting One-way Analysis of Variance (ANOVA) for each hypothesis. One-way ANOVA is a parametric test used to analyse mean differences that exist among more than two mutually exclusive groups on one continuous variable (Howell, 2007). This test tool is the most appropriate to use because it helped the researcher find mean difference that existed in psychological distress and resilience among the various groups in the study. Post Hoc analyses were conducted on significant ANOVA results. An Independent samples “t” test was conducted to analyse data on research hypothesis 7. The Independent sample “t” test is also a parametric test used to find differences between two independent groups on

one continuous variable (Howell, 2007). The Independent samples “t” test was the appropriate test tool to use since the researcher aimed at differences in resilience of participants in relation to the employment status of participants. All statistical tests were conducted at a .05 level of significance. Information obtained from the data analyses was discussed in relation to the empirical literature reviewed.

**Chapter Summary**

This chapter examined the research methodology employed in the study. The chapter looked at the research design, population, sample and sampling procedure, instruments, data collection procedure and data analysis. The study used the descriptive survey research design. The estimated accessible population is 2069, consisting of patients categorized under the three main health conditions under study. The sample size used was 220. The sampling procedure used was stratified random sampling. The instrument used was the questionnaire which comprises various psychological tests and inventories. Data collection was done by the researcher with the help of an assistant. Data analysis included descriptive approaches such as mean, standard deviations, percentages and frequencies. Further statistical analysis included inferential approaches such as linear regression, moderation and mediation analysis using the Hayes approach, One-way ANOVA as well as Independent samples “t” test.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## Introduction

This study focused on investigating psychological distress, resilience and help-seeking behaviours in patients with chronic conditions; specifically focusing on type 2 diabetic, breast cancer and hypertensive patients. The previous chapter dealt with the research methodology that guided the study. This chapter presents the results from analyses of data collected from the field. The findings are then discussed in relation to the literature reviewed.

Out of 220 questionnaires administered, 214 were duly completed and returned, giving 97.3% return rate. This return rate was considered sufficient for analyses in this type of study (Saunders & Thornhill, 2007). The results from the analyses of data are presented in Sections A to C. Section A, looks at demographic information provided by respondents, Section B deals with answering the three research question of the study while Section C presents the results from the analyses of data on the six research hypotheses that guided the study. Tables have been drawn to support analysis and results where necessary.

## Section A: Demographic Information (Description of sample)

This section describes the demographic information of the respondents involves in the study. Demographic information included: gender, age, type of disease, level of education and employment status of respondents.

**Gender of respondents**

The gender distribution of respondents in the study is shown in Table 4 below.

Table 4- *Gender distribution of respondents*

| Gender | Frequency | Percentage (%) |
|---|---|---|
| Male | 72 | 33.5 |
| Female | 142 | 66.4 |
| Total | 214 | 100.0 |

Source: Field survey, 2019

Table 4 shows that majority of the respondents were female, representing two-thirds of the total sample size.

**Age of respondents**

The age of respondents was thought to be important to the study therefore the researcher sought to establish the mean age of the respondents. The mean age of the respondents is shown in Table 5.

Table 5- *Mean age of respondents*

| | Mean (M) | Standard Deviation (SD) |
|---|---|---|
| Age | 54.70 | 9.484 |

Source: Field survey, 2019

The results in Table 5 shows that the average age of respondents in this study is 54.70 years (*SD* = 9.484). This is considered significant since age is a factor in the development of type 2 diabetes, hypertension and breast cancer.

**Type of disease**

The table 6 below shows the distribution of respondent according the specific health condition.

Table 6- *Distribution on respondents according to type of disease*

| Type of Disease | Frequency | Percentage (%) |
|---|---|---|
| Type 2 diabetes | 83 | 38.8 |
| Breast cancer | 43 | 20.1 |
| Hypertension | 88 | 41.1 |
| Total | 214 | 100.0 |

Source: Field survey, 2019

Table 6 shows that type 2 diabetic patients were almost as many as hypertensive patients. Meanwhile the number of breast cancer patients was about half the number of hypertensive patients.

**Level of education**

The level of education of respondents is shown in Table 7 below.

Table 7- *Level of education of respondents*

| Level of education | Frequency | Percentage (%) |
|---|---|---|
| No formal education | 42 | 19.6 |
| Basic education | 48 | 22.4 |
| Secondary education | 83 | 38.8 |
| Tertiary education | 41 | 19.2 |
| Total | 214 | 100.0 |

From Table 7 it is obvious that most of the participant have some form of formal education. However 19.6% of the respondents had no formal education.

**Employment status**

Table 8 shows the employment status of the respondents involved in the study.

Table 8- *Employment status of respondents*

| Employment status | Frequency | Percentage (%) |
|---|---|---|
| Employed | 116 | 54.2 |
| Unemployed | 98 | 45.8 |
| Total | 214 | 100.0 |

Source: Field survey, 2019

Table 8 shows that a slim majority of the respondents are employed (f= 116, %= 54.2) while 98 (45.8%) were unemployed. This is considered normal due to the fact that most of the respondents are old adults of working age however the sample also includes a relatively large number of participants who are 60 years and above; thus are considered to be on retirement. It is also speculated that some respondents are unemployed due to their ill-health.

**Section B: Analysis of Data on Research Questions**

This section presents the analysis of data on the three research question that guided the objectives of this study. Answering the research questions helped in achieving the overall purpose of the study.

**Research Question 1:** What is the level of psychological distress in patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast?

Research question 1 aimed at assessing the level of psychological distress in the patients involved in the study. Data on this research question was analysed using frequencies and percentages. Tables 9 below show the prevalence of psychological distress among the various groups (type of disease) and the overall prevalence of psychological distress in the entire sample respectively.

Table 9- *Level of psychological distress in relation to type of disease (TOD)*

| | | Levels of Psychological Distress | | | | |
|---|---|---|---|---|---|---|
| TOD | Count/ % | Likely well | Mild | Moderate | Severe | Total |
| T2D. | Count | 28 | 5 | 10 | 40 | 83 |
| | (%) within TOD | 33.7 | 6.0 | 12.0 | 48.2 | 100.0 |
| BC. | Count | 10 | 5 | 4 | 24 | 43 |
| | (%) within TOD | 30.8 | 7.9 | 11.2 | 55.8 | 100.0 |
| HYP. | Count | 28 | 7 | 10 | 43 | 88 |
| | (%) within TOD | 31.8 | 8.0 | 11.4 | 48.9 | 100.0 |
| | Total | 66 | 17 | 24 | 107 | 214 |
| | % | 30.8 | 7.9 | 24.0 | 50.0 | 100.0 |

Source: Field survey, 2019

**Note:** T2D = Type 2 Diabetes BC. = Breast cancer HYP. = Hypertension

From Table 9 it is noted that on the overall, severe levels psychological distress was found in half (50%) of the total respondents. Meanwhile 66 (30.8%) of the respondent reported no signs of psychological distress and considered to be well. Also, Table 9 above shows that severe levels of psychological distress were reported in breast cancer patients (55.8%) followed by hypertension (48.9%) and then Type 2 diabetes. This is understandable due to the severity and the nature of breast cancer; it is perceived that breast cancer is more deadly than other two conditions under study.

**Research Question 2:** What is the level of resilience in patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast?

This research question aimed at establishing the level resilience in the patients involved in the study. Data on this research question was analysed

using frequencies and percentages. Tables 10 below show the level of resilience among the various groups (type of disease) and the overall prevalence of resilience in the entire sample respectively.

Table 10- *Level of resilience in relation to type of disease (TOD)*

| | | Levels of Resilience | | | |
|---|---|---|---|---|---|
| TOD | Count/ % | Low | Moderate | High | Total |
| T2D. | Count | 35 | 17 | 31 | 83 |
| | (%) within TOD | 42.3 | 23.3 | 37.3 | 100.0 |
| BC. | Count | 17 | 14 | 12 | 43 |
| | (%) within TOD | 39.5 | 32.6 | 27.9 | 100.0 |
| HYP. | Count | 32 | 29 | 27 | 88 |
| | (%) within TOD | 36.4 | 33.0 | 30.7 | 100.0 |
| | Total | 84 | 60 | 70 | 214 |
| | % | 39.3 | 28.0 | 32.7 | 100.0 |

Source: Field survey, 2019

**Note:** T2D = Type 2 Diabetes BC. = Breast cancer HYP. = Hypertension

Table 10 shows the overall level of resilience in the respondents. Low level of resilience was prevalent in over one-third of the respondents; meanwhile moderate to high levels of resilience were prevalent in 60.7% of the study respondents. Table 10 further shows that low levels of resilience were found in type 2 diabetic patients (42.6%) followed by breast cancer patients (39.5%) and then hypertensive patients (30.7%). However, 37% and 30.7% of type 2 diabetes and hypertension patients have high prevalence of resilience respectively. A moderate level of resilience was prevalent among 23.3% to 32.6% of the entire patient group.

**Research Question 3:** What are the help-seeking behaviours of patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast?

Research question 3 sought to examine the major help-seeking behaviours that prevent the participants from seeking psychological support. Data on this research question was analyses by conducting item analysis on ten help-seeking behaviours that have been suggested by literature. Table 11 below shows the means and standard deviations from the item analysis conducted. Thus the items with the highest mean scores are the major psychological help-seeking behaviours of the participants.

Table 11- *Help-seeking behaviours of patients*

| *Items* | M | SD |
|---|---|---|
| Psychological problems are common, thus there is no need to seek help. | 2.39 | .931 |
| Psychological problems get better with time; there is no need to seek help. | 2.74 | .971 |
| I am worried about what others will think about me when I seek psychological help. | 2.87 | 1.031 |
| Due to time constraints it is not possible for me to seek psychological help. | 2.91 | 1.099 |
| I think no one can help me with my problem. | 2.69 | 1.062 |
| Seeking psychological help is not helpful; hence there is no need to seek psychological help. | 2.57 | 1.148 |
| The idea of talking about problems with a psychologist strikes me as a poor way to deal with emotional conflicts. | 2.79 | 1.026 |
| Psychotherapy is expensive, therefore making it difficult for me to afford. | 3.13 | .908 |
| My cultural and religious values prevent me from seeking help | 2.37 | 1.092 |
| People can deal with emotional and psychological problems on their own | 2.80 | 1.085 |

Source: Field survey, 2019 N= 214
**Note:** M= Mean SD= Standard Deviation

Table 11, shows the results from the analysis of data on help-seeking behaviours of patients. Looking at the individual items, it is obvious that the item with the highest mean is the statement "Psychotherapy is expensive, therefore making it difficult for me to afford", with a mean score of 3.13 (*SD*= 0.908) followed by the statement "Due to time constraints it is not possible for me to seek psychological help" this also obtained a mean score of 2.91 (*SD*= 1.099). The statement "I am worried about what others will think about me when I seek psychological help" had a mean score of 2.87 (*SD*= 1.031). However, the items "My cultural and religious values prevent me from seeking help" and "Psychological problems are common, thus there is no need to seek help" obtained that lowest means score of 2.37 (*SD*= 1.092) and 2.39 (*SD*= .931) respectively.

**Section C: Analysis of Data on Research Hypotheses**

The study was guided by six research hypotheses. This section presents the results from the testing of these research hypotheses.

**Research Hypothesis 1**

***$H_0$*:** There is no significant relationship between resilience and psychological distress in patients with Type 2 diabetes, breast cancer and hypertension.

***$H_1$*:** There is a significant relationship between resilience and psychological distress in patients with Type 2 diabetes, breast cancer and hypertension.

Research hypothesis one aimed at establishing the relationship between resilience and psychological distress and also examined how resilience predicted psychological distress in patients. The hypothesis was tested by

conducting a simple linear regression analysis to first of all establish the relation between resilience and psychological distress; and also to predict the extent to which resilience predicts psychological distress. Tables 12 and 13 present the results from the correlation and regression analysis respectively.

Table 12- *Correlation between resilience and psychological distress*

| | Variable | Psychological distress | Resilience |
|---|---|---|---|
| Correlation (r) | Psychological distress | 1.000 | |
| | Resilience | -.586** | 1.000 |
| Source: Field survey, 2019 | | **p < .05 | N= 214 |

Table 13- *Linear Regression between resilience and psychological distress*

| Variables | B | R Squared ($R^2$) | *SE B* | β | *t* | *p* |
|---|---|---|---|---|---|---|
| Constant | 43.313 | .340 | 1.519 | | 28.515 | .000 |
| Resilience | -.672 | | .064 | -.586 | -10.526 | .000 |
| Source: Field survey, 2019 | | F= 110.805 | | | df= (1, 212) | |

Table 12 shows that there is a negative and significant relation between resilience and psychological distress (r = -.586, $p < .05$). This implies that as score for resilience increase that of psychological distress decreases and vice versa, thus levels of high resilience would lead to lower levels of psychological distress and also high level of psychological distress would lead to low levels of resilience.

A linear regression model was calculated to predict psychological distress based on resilience. Table 13 shows a significant that regression equation was found. The results indicate that $F$ (1, 212) = 110.805, $p < .01$,

with an $R^2$ of .340. The results suggest resilience ($\beta$= -.586, $p$< .01) is a significant and negative predictor psychological distress. The model explains 34% of the variance. Thus 34% of the variation in psychological distress is predicted by resilience. Since there was a significantly negative association between resilience and psychological distress, the null hypothesis is rejected.

**Research Hypothesis 2**

***$H_0$*:** Social support does not significantly moderate the relationship between resilience and psychological distress in Type 2 diabetic, breast cancer and hypertension patients.

***$H_1$*:** Social support significantly moderates the relationship between resilience and psychological distress in Type 2 diabetic, breast cancer and hypertension patients.

This hypothesis was stated to examine the interaction effect social support has on the relationship between psychological distress and resilience. A moderation analysis was conducted to explore the role social support play in the relationship between resilience and psychological distress. The predictor variable was resilience, the moderator was social support, and the criterion was psychological distress. The moderation analysis was conducted using PROCESS by Andrew F. Hayes. The moderation was done using 5,000 bootstrap samples. Results from the moderation analysis are shown in Table 14.

Table 14- *Moderating Role of social support in the relationship between resilience and psychological distress*

| | Coeff (b) | BootSE | t-value | BLLCI | BULCI |
|---|---|---|---|---|---|
| Constant | 32.161 | 11.288 | 2.849 | 9.907 | 54.414 |
| Resilience | -.645 | .4602 | -1.4035 | -1.5532 | .2614 |
| Social support | .3229 | .3277 | .9853 | -.3232 | .9693 |
| Resilience*Social support | -.014 | .0135 | -.0313 | -.0270 | .0261 |

Source: Field survey, 2019
Model summary: $R^2$=.350; $F$ (3, 210) = 39.02101, $p$<. 001
Resilience*Social support: $R^2$ *change*= .022; $F$ (1, 210) =5.749, $p$> .05
Criterion: Psychological distress

The result in Table 14 shows that social support is not a significant moderator in the relationship between resilience and psychological distress, b= -.014, t= -.0313, CI (-.0270, .0261) and $p$> .05. The results reflect that the presence of social support does not enhance, buffer or antagonize how resilience relates to psychological distress. Hence in this study the presence of social support in patient does not interact with resilience to predict psychological distress. Since $p$> .05 the null hypothesis is not rejected.

**Research Hypothesis 3**

***$H_0$*:** Social support does not significantly mediate the relationship between resilience and psychological distress in Type 2 diabetic, breast cancer and hypertension patients.

***$H_1$*:** Social support significantly mediates the relationship between resilience and psychological distress in Type 2 diabetic, breast cancer and hypertension patients.

Table 15 shows the mediating role of social support in the relationship between resilience and psychological distress. The mediation analysis satisfied assumptions such as normality, continuous measurement, independence and linearity. In order to confirm a mediating variable and its significance in the model, the analysis tested the significance of the relationship between the initial independent variable and dependent variable (X → Y), the significance of the relationship between the initial independent variable and the mediator (X → M), the significance of relationship between the mediator and the DV in the presence of the IV (M|X → Y) and the insignificance (or the meaningful reduction in effect) of the relationship between the initial independent variable and the dependent variable in the presence of the mediator (X|M → Y). The result of the mediation analysis is presented in Table 15.

Table 15- *Mediating role of social support in the relationship between resilience and psychological distress*

| | Coeff | BootSE | t-value | p | BLLCI | BULCI |
|---|---|---|---|---|---|---|
| X→ Y | -.6720 | .0638 | -10.53 | .000 | -.7979 | -.5462 |
| X→ M | -.0377 | .0136 | -1.196 | .233 | -.0999 | .0245 |
| M/X→ Y | .3136 | .1376 | 2.279 | .024 | .0423 | .5849 |
| X\|M → Y | -.6602 | .0634 | -10.41 | .000 | -.7853 | -.5352 |
| **Effects** | | | | | | |
| Total effect of X on Y | -.6720 | .0638 | -10.53 | .000 | -.7979 | -.5462 |
| Direct effect of X on Y | -.6602 | .0634 | -10.41 | .000 | -.7853 | -.5352 |
| Indirect effect of X on Y | -.0118 | .0119 | | | -.0403 | .0061 |

**Note:** X= Resilience, Y= Psychological Distress, M= Social Support

The results from Table 15 show that resilience was a significant predictor of Psychological Distress, b = -.672, $t$ (1,212) = -10.53, $p$ < .001.

However, resilience was not a significant predictor of the mediator (social support) $b$ = -.0377, $t$ (1,212) = -1.196, $p$ = .233. Again, the mediation process showed that the mediator (social support), controlling resilience, was significant, $b$ = .3136, $t$ (2,211) = 2.279, $p$ < .001. And the analyses revealed that, controlling for the mediator (social support), resilience was a significant predictor of psychological distress, b = -.6602, $t$ (2,211) = -10.41, $p$ < .001. These results are indication that there is no mediation effect. A measure for the indirect effect of X on Y revealed no significant indirect effect of resilience on psychological distress, b = -.0118, CI (-.0403, .0061). The results indicate that the effect resilience has on psychological distress of patients are not explained by the presence of social support. This could mean that when a patient has psychological distress, then it could mean that the patient is less resilient but not as a result of lack of social support. Again, when a patient has no or less psychological distress, it may solely be as a result of being more resilient but not because of having a good social support.

**Research Hypothesis 4**

***$H_0$***: There is no significant difference in the level of psychological distress in Type 2 diabetes, breast cancer and hypertension.

***$H_1$*:** There is a significant difference in the level of psychological distress in Type 2 diabetes, breast cancer and hypertension

This research sought to investigate the mean differences that exist in the levels of resilience across the patients groups (Type 2 diabetes, breast cancer and hypertension). The independent variable is the patient groups while the dependent is psychological distress. To analyse these mean differences, a one-way ANOVA test was conducted. Before the one-way ANOVA test was

conducted, the normality assumption had to be met; thus the Shapiro-Wilk normality test was conducted (see results in Appendix E, Table I). Normality was assumed since $p > .05$ on the Shapiro-Wilk test. The Tables 16 and 17 show the group statistics and the results from the one-way ANOVA test respectively.

*Table 16- Group statistics type of disease on psychological*

| Type of disease | N | Mean | Standard deviation |
|---|---|---|---|
| Type 2 Diabetes | 83 | 28.57 | 11.761 |
| Hypertension | 88 | 28.84 | 10.789 |
| Breast cancer | 43 | 34.52 | 15.108 |
| Total | 214 | 29.07 | 12.413 |

Table 17- *One-way ANOVA results for type of disease on psychological distress*

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between groups | 1764.461 | 2 | 882.230 | 4.495 | .013 |
| Within groups | 31056.623 | 211 | 147.188 | | |
| Total | 32821.084 | 213 | | | |

Source: Field survey, 2019

The results from the one-way ANOVA Table 17 shows that there is a statistically significant difference among the means of type of disease (type 2 diabetes, hypertension and breast cancer) on psychological distress. From the Table 17, $F$ (2, 211) = 5.994, $p$ = .013. Since $p < .05$, the null hypothesis is rejected. Also since a significant mean difference was found, Post Hoc

analysis was conducted. Results from the LSD Post Hoc test are shown in Table 18.

Table 18- *Post Hoc multiple comparison of type on disease on psychological distress*

| Type of disease | Type of disease | Mean Difference (MD) | Standard Error | Sig. |
|---|---|---|---|---|
| Diabetes | Hypertension | 1.725 | 1.856 | .354 |
| | Breast cancer | -6.015* | 2.280 | .009 |
| Hypertension | Diabetes | -1.725 | 1.856 | .354 |
| | Breast cancer | 7.740* | 2.257 | .001 |
| Breast cancer | Diabetes | 6.015* | 2.280 | .009 |
| | Hypertension | 7.740* | 2.257 | .001 |

Source: Field survey, 2019 * p < .05

The results from the LSD Post Hoc analysis as shown in Table 18 reveals that there was a significant mean difference between breast cancer patients and diabetes patients (*MD*= 6.015, *p*= .009) as well as breast cancer and hypertensive patients (*MD*= 2.257, *p*= .001). This implies that breast cancer patients had a higher mean score on psychological distress than both diabetic and hypertensive patients. The results point out that breast cancer patients experience more psychological distress.

**Research Hypothesis 5**

***H₀*:** There is no significant difference in the level of resilience in Type 2 diabetic, breast cancer, and hypertensive patients.

***H₁*:** There is a significant difference in the level of resilience in Type 2 diabetic, breast cancer, and hypertensive patients.

This research also aimed to determine the mean differences that exist in the levels of resilience across the patients groups (Type 2 diabetes, breast cancer and hypertension). The independent variable is the patient groups while the dependent is resilience. To analyse these mean differences, a one-way ANOVA test was conducted. Before the one-way ANOVA test was conducted, the normality assumption had to be met; thus the Shapiro-Wilk normality test was conducted (see results in Appendix E, Table II). Normality was assumed since $p > .05$ on the Shapiro-Wilk test. The Table 19 and 20 below shows the group statistics and the results from the one-way ANOVA test respectively.

Table 19- *Group statistics for type of disease on resilience*

| Type of disease | N | Mean | Standard deviation |
|---|---|---|---|
| Type 2 Diabetes | 83 | 19.69 | 10.478 |
| Hypertension | 88 | 23.41 | 11.073 |
| Breast cancer | 43 | 19.60 | 10.404 |
| Total | 214 | 29.07 | 12.413 |

Table 20- *One-way ANOVA results for type of disease on psychological distress*

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between groups | 728.953 | 2 | 364.476 | 3.176 | .044 |
| Within groups | 24215.407 | 211 | 114.765 | | |
| Total | 24344.360 | 213 | | | |

Source: Field survey, 2019

Table 20 shows the results from the one-way ANOVA test conducted. The table above shows that there is a statistically significant difference among the means of type of disease (type 2 diabetes, hypertension and breast cancer) on resilience. From the table 14, $F$ (2, 211) = 3.176, $p$ = .044. These results depict a significant mean difference among the groups. Since $p < .05$, the null hypothesis is rejected. Also since a significant mean difference was found, Post Hoc analysis was conducted. Results from the LSD Post Hoc test are shown in Table 21.

Table 21- *Post Hoc multiple comparison of type on disease on resilience*

| Type of disease | Type of disease | Mean Difference (MD) | Standard Error | Sig. |
|---|---|---|---|---|
| Diabetes | Hypertension | -3.722* | 1.639 | .024 |
| | Breast cancer | .082 | 2.013 | .368 |
| Hypertension | Diabetes | 3.722* | 1.639 | .024 |
| | Breast cancer | 3.804 | 1.993 | .058 |
| Breast cancer | Diabetes | -.082 | 2.103 | .368 |
| | Hypertension | -3.804 | 1.993 | .058 |

Source: Field survey, 2019 * p < .05

The results from the LSD Post Hoc analysis in Table 21 shows that there was a significant mean difference between hypertensive patients and diabetes patients ($MD$ = 3.722, $p$ = .024). This implies that hypertensive patients had a higher mean score on resilience than diabetic patients. Also though there was a mean difference between hypertensive and breast cancer patients, the mean difference was not significant ($p$= .058). This implies that

hypertensive patients are more resilient than breast cancer and diabetic patients.

**Research Hypothesis 6**

***$H_0$*:** There is no significant difference in level of resilience with regard to educational level of patients

***$H_1$*:** There is a significant difference in level of resilience with regard to educational level of patients.

This research hypothesis also sought to determine the mean differences that exist in the levels of resilience across four levels of education (no formal education, basic education, secondary education and tertiary education). The independent variable is the level of while the dependent is resilience. To analyse these mean differences, a one-way ANOVA test was conducted. Before the one-way ANOVA test was conducted, the normality assumption had to be met; thus the Shapiro-Wilk normality test was conducted (see results in Appendix E, Table III). Normality was assumed since $p > .05$ on the Shapiro-Wilk test. The Table 22 and 23 shows the group statistics and results from the one-way ANOVA test respectively

Table 22- *Group statistics for level of education*

| Level of education | N | Mean | Standard deviation |
|---|---|---|---|
| No formal education | 42 | 21.21 | 9.22 |
| Basic education | 48 | 20.42 | 10.530 |
| Secondary education | 83 | 19.92 | 11.319 |
| Tertiary education | 41 | 24.71 | 11.257 |
| Total | 214 | 21.20 | 10.822 |

Table 23- *One-way ANOVA results for level of education on psychological distress*

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between groups | 670.724 | 3 | 223.575 | 1.749 | .162 |
| Within groups | 24272.636 | 103.04 | 115.589 | | |
| Total | 24344.360 | 213 | | | |

Source: Field survey, 2019

The results presented in Table 23 shows that there is no statistically significant difference among levels of education (no formal education, basic education, secondary education and tertiary education) on resilience. From the table 14, F (3, 103.04) = 1.749, $p > .05$ (Means for the level of education are: no formal education= 21.21, basic education= 20.42, secondary education= 19.92 and tertiary education= 24.71). This therefore shows that the differences among the group means were no significant. Since $p > .05$, the null hypothesis is not rejected. Post Hoc analysis not conducted because the differences in the group means are not significant.

**Research Hypothesis 7**

***$H_0$*:** There is no difference in level of resilience with regard to employment status of patients

***$H_1$*:** There is a difference in level of resilience with regard to employment status of patients

With the aim of establishing mean differences that exist in resilience in relation to employed and unemployed patients an independent sample t test was conducted. The independent variable was employment status (employed and unemployed) while the dependent variable is resilience. Tables 24 and 25

shows the group statistics and results from the independent samples t-test respectively.

Table 24- *Group statistics employment status*

| Employment status | N | Mean (M) | Std. Deviation (SD) |
|---|---|---|---|
| Employed | 116 | 26.49 | 12.609 |
| Unemployed | 98 | 23.18 | 11.571 |
| Total | 214 | 24.38 | 11.92 |

Table 25- *Results of Independent samples t- test of employment status on resilience*

| Sig. | t | df | Sig.(2-tailed) | Mean difference |
|---|---|---|---|---|
| .595 | -2.132 | 212 | .037 | -3.31 |
| | -2.129 | 201.846 | .039 | -3.31 |

Source: Field survey, 2019

Table 23 shows the result from the independent sample t test. With equal variances assumed based on the Levene's test for equality of variance (p= .595) the results from the independent t-test tables show that there is a significant difference between the means of employed and unemployed patients. From the table, $t$ (212) = -2.132, $p < .05$. Since $p < .05$, it shows that there is a significant difference between the mean scores employed and unemployed patients on resilience. With p< .05 null hypothesis is rejected. Hence, employed patients are more resilient than unemployed patients.

**Summary of Results**

From the analyses of data, the results revealed that high level of psychological distress was found in half (50%) of the study respondents.

Again, high to moderate levels of resilience was found in over half (61%) of the respondents involved in the study.

Generally, help-seeking behaviours was poor among the participants in the study with an overall mean of 27.23 (*SD*= 5.184). Looking at the individual items in relation to help-seeking behaviours, the expensive nature of psychotherapy (*M*= 3.13, *SD*= .908) and mental health stigma (*M*= 2.87, *SD*= 1.031) were among the major help-seeking behaviour of the participants in the study.

Furthermore, resilience was negatively correlated with resilience (r= -.586, $p < .001$). The regression analysis explained 34% of the variance, thus 34% of the variations in psychological distress was negatively predicted by resilience.

Social support did not moderate the relationship between resilience and psychological distress (b= -.014; CI= -.0270, 0261). Social support neither mediated the relationship between resilience and psychological distress (b= -.0118; CI= -.0403, .0061).

Difference were found in psychological distress in relation to type of disease $F$ (2,211)= 4.495, $p$= .013. Further analysis showed that psychological distress (*MD*= 6.015, $p$= .009). Further analysis showed that psychological distress was higher in breast cancer patients. Again, difference was found in resilience in relation to type of diseases $F$ (2,211)= 3.176, $p$= .044. Further analysis showed that psychological distress (*MD*= 3.722, $p$= .024).

There was no difference in resilience with respect to the level of education $F$ (3,103.04)= 3.176, $p$= .162. Finally difference were found in resilience in relation to employment status $t$ (212)= -2.132, $p < .05$.

## Discussion of Research Findings

The research findings of the study are discussed in relation to the empirical literature reviewed. It outlines areas where the findings from this study are in support of other research findings as well as areas where there are inconsistencies.

### Level of psychological distress in Type 2 diabetes, breast cancer and hypertension patients

The results from this study revealed that whilst almost half of the hypertensive and Type 2 diabetic patients had severe levels of psychological distress, more than half of the breast cancer patients reported severe levels of psychological distress (see Table 9). It is assumed that severe psychological distress was more prevalent among breast patients because breast cancer is relatively more life-threatening than Type 2 diabetes and hypertension.

In general, severe psychological distress was prevalent in half of the participants involved in this study (see Table 10). The findings therefore suggest that there is the likelihood of developing psychological distress when diagnosed with a health condition like breast cancer, Type 2 diabetes, hypertension or any other health condition for that matter. This psychological distress is mostly related to the deteriorating health status of the individuals, inability to perform certain activities; the continuous use of medication among other reasons (Chapman et al., 2005).

The findings from this study confirm that of Mehnert et al. (2018) who in their studies to examine the prevalence of psychological distress using a large sample found that significant levels of psychological distress was prevalent in one in two patients with chronic condition. In the study by

Mehnert et al. (2018) it was established that 52% of the participants have high psychological distress. The results from this study also confirms the findings of Kilkkinen et al. (2007) who also found high prevalence of psychological distress in 31% of the participants involved in their study.

Though findings from this study are in agreement with Mehnert et al. (2018) and Kilkkinen et al. (2007), it is inconsistent with that of Ringoir et al. (2014) and Zalai et al. (2012) who reported a relatively lower prevalence of psychological distress among adults (18%) and in patients on hemodialysis (25%) respectively. The inconsistencies in the research findings could be associated to the difference in the research participants, the sample size of the study and how psychological distress was measured. Also, these studies focused on different chronic conditions and different patients groups.

**Level of resilience in Type 2 diabetes, breast cancer and hypertension patients**

Findings from this study show that low resilience was more prevalent in patients with type 2 diabetes then followed by patients with breast cancer. Also, moderate to high prevalence of resilience was found over half of all the patients groups. In general, low resilience was found in over a third of the total participants involved in this study. The low prevalence of resilience in the patients could be attributed to their inability to cope or withstand problems associated with their ill-health as well as the lack of hope that their health would improve. Furthermore, resilience was highly prevalent in almost one-third (32.7%) of the entire sample. This high prevalence among the patients could also be associated with patients' ability to cope with their condition among other factors.

This finding gives ample evidence to agree with the findings of McGowan et al. (2018) who found moderate to low levels of resilience to be prevalent in about 54% of HIV patients used in their study. Also the finding is in agreement with that of Strauss et al. (2007) who found that resilience was low in patients receiving palliative treatment. Strauss et al. (2007) reported that resilience was found to be highly prevalent in about 28% of the study participants; while majority of their participants had low resilience.

On the other hand, the findings on the prevalence in this study does not concur with the findings of Min et al. (2013) whose study pointed out that 18% of the participants have moderate to low levels of psychological resilience, and DeNisco (2011) who also found significantly low levels of resilience in about 13% of the participants involved. The prevalent rates provided by Min et al. (2013) and DeNisco (2011) are relatively low as compared to the findings of this study. The discrepancies in the findings can be attributed to the difference that exists in the sample and sample size, as well as contextual differences.

**Help-seeking behaviour of patients**

The findings form the study point out perceived expensive nature of psychotherapy, time constrains and stigma associated with mental health conditions are the major help-seeking behaviours among the participants. Other help-seeking behaviours include misunderstanding and minimization of psychological problems and mistrust of therapists. These behaviours serve as barriers to seeking psychological support though it is needed. The results also reveal that that cultural and religious constraints as well as the perceived

commonality of psychological problems are not major help-seeking behaviours in the patients

The findings of this study are in consonance with a study by Colonna-Pydyn, et al, (2007) who reported that the two main help-seeking behaviours of patients that form barriers to psychological treatment are expenses and time. Multiple studies have also reported that lack of time and financial constraints serve as barrier to seeking psychological help (Mohr et al., 2006; de Haan, Boon, Vermeiren, Hoeve & de Jong, 2015). Vanheusden et al. (2008), also state that other help-seeking behaviours that form a barrier to psychological treatment include minimization, misunderstanding and mistrust. It is quite common for individuals who avoid treatment by minimalize their condition, meaning that they tend to view their symptoms as less severe than others might believe.

The findings of this study is also in line with Vogel et al, (2009) who found out that even among individuals who believe they need treatment many resist seeking help because of the stigma or negative stereotypes associated with psychological disorders. The work of Eisenberg, Downs, Golberstein & Zivin (2009) also confirms that public stigma is one of the factors that prevent individuals from seeking psychological help. In their study they reported that perceived public stigma was considerably higher than personal stigma among college students.

**Relationship between resilience and psychological distress**

The results from this study revealed that there is a moderate inverse relationship between resilience and psychological distress. As resilience increases, psychological distress decreases and as psychological distress

decrease, resilience increases. This implies that patients who are resilient have lower psychological distress and patients who are psychologically distressed have lower resilience.

The moderate and negative association between resilience and psychological distress is supported by empirical evidence. For instance study by Yi et al (2008) found that resilience has a moderate and negative relationship with psychological distress. Again, cross-sectional observation study aimed at establishing the relationship between resilience, psychological distress and physical activity in cancer patients by Matzka et al. (2016) also had similar findings. Both studies report a moderate and significantly negative association between resilience and psychological distress. The findings from this study is also consistent with the finding of Tian et al. (2016), who found that resilience was associated with psychological distress after controlling for perceived social support and socio-demographic variables; and that a one-point increase in resilience decreased the likelihood of having possible psychological distress. In patients who have gone through renal transplant.

Although the studies by Min et al. (2013) and Yasien et al. (2016) also found a negative association between resilience and psychological distress, the relationship is weak. The weak correlation between resilience and psychological distress found by Min et al. (2013) and Yasien et al. (2016) is inconsistent with the findings of this study. The discrepancies between the findings can be attributed to differences in the samples used and how psychological distress and resilience were evaluated in the studies. Min et al. (2013) assessed distress and resilience using the Hospital Anxiety and Depression Scale and the 25 item Connor-Davidson Resilience Scale

respectively. Although these measures assess the same constructs as in this study, they are likely to unearth different results.

**Social support as a moderator in the relationship between resilience and psychological distress**

In this study, social support was an important variable of concern. Literature suggested that social support could have an influence in the relationship between resilience and psychological distress; hence this moderation role was tested. The findings from the moderation analysis suggested social support does not moderate the relationship between resilience and psychological distress. It further implies that the social support did not change the magnitude of the relationship between resilience and psychological distress. The presence of social support did not enhance (where an increase in social increased the effect of resilience on psychological distress), buffer (where an increase in social support decreased the effect of resilience on psychological distress); or antagonize (where an increase in social support would reversed the effect of the resilience on psychological distress). This does not however suggest that social support is not important because social support has been proven essential in helping individuals cope with stressful or adverse situations.

The findings of Matzka et al. (2016), are similar to the findings of this study. Matzka et al. (2016) analysed the moderating role of social support in the relationship between resilience and psychological distress. The researchers sampled patients from the Vienna General Hospital (Austria). The results from the study suggested that the relationship between resilience and psychological distress is not significantly moderated by social support. Again the findings

are backed by that of Ong et al. (2018) who also researched on resilience and burden in caregivers of older adults; and the moderating and mediating effect of perceived social support. The findings of Ong et al. (2018) revealed that perceived social support does not demonstrate a moderation effect in the association between resilience and burden, thus no interaction effect of resilience and perceived social support on burden.

A study by Wilks and Croom (2008), tested the moderating role of social support in the relationship between perceived stress and resilience in Alzheimer's disease caregivers. Although Wilks and Croom (2008) focused on Alzheimer's disease caregivers, they also assessed how social support moderated the relationship between perceived stress and resilience. The findings of Wilks and Croom (2008) do not concur with the findings from this study. Wilks and Croom (2008) found that social support demonstrated moderation, as it interacted significantly with perceived stress on the resilience outcome. Wilks and Croom (2008) argued that the negative effect of stress on resilience lessened upon stress interaction with social support as a moderator. They concluded that recognition of protective resources of resilience such as social support may be of practical use to health care professionals. The findings of Wilks and Spivey (2010) who assessed resilience, academic stress and the role of social support among students sampled United States also varies from the findings of this study. Wilks and Spivey (2010) found that friend support (a form of social support) demonstrated moderation in the relationship between academic stress and resilience. Wilks and Spivey (2010) concluded that the social support was deemed protective in the sense that it

assuaged the negative impact of academic stress on students' perceived ability to overcome adversity.

**Mediating role of social support in the relationship between resilience and psychological distress**

Research suggested that social support can mediate the relationship between resilience and psychological distress. The findings of this study suggest that social support is not a significant mediator of the relationship between resilience and psychological distress. Thus the results indicate that the effect resilience has on psychological distress of patients are not explained by the presence of social support. This could mean that when a patient has psychological distress, then it could mean that the patient is less resilient but not as a result of lack of social support.

The findings form this study is inconsistent with the findings of various studies. For instance, the work of Xu and Ou (2014) revealed that the association between resilience and quality of life improved after social support was included; suggesting that at least a part of this association was mediated by the level of social support provided. Ong et al. (2018) also found showed that perceived social support demonstrated a significant mediating effect in the relationship between resilience and burden. Though the findings of Xu and Ou (2014) and Ong et al. (2018) are inconsistent with this study, it is impossible to under-rate the essence of social support in human life. The descripancies in the findings of this study and that of Xu and Ou (2014), and Ong et al. (2018) could be related with the difference in the samples used as well as how the variables were assessed.

**Type of disease and psychological distress**

In general the findings of the study revealed a significant difference in psychological distress among breast cancer, Type 2 diabetic and hypertensive patients. Further analysis using the Post Hoc approach showed that breast cancer and type 2 diabetes patients had a higher mean on psychological distress than hypertensive patients. This implies that psychological distress was higher in breast cancer patients and patients with type 2 diabetes than hypertension. The fact that breast cancer patients report higher psychological distress can be associated the perceived lethal nature of all cancers in general.

The findings from this study are in accord with the findings of Miller et al. (2007) who also found significant differences in levels of depression among a group of patients who are different from those involved in this study. Miller et al. (2007) focused on patients with Parkinson's diseases, dystonia and essential tremors selected from the University of Florida Movement Disorders Center (USA). The researcher further found that depression among patients with Parkinson's disease was higher than patients with dystonia and essential tremors. Nekouei et al. (2011) also had similar findings. Nekouei et al. (2011) compared depression in cardiac patients and patients who did not have a cardiac condition. Their findings showed a significant difference between the anxiety of cardiac patients and non-cardiac patients. Thus anxiety and depression in patients with cardiac conditions were very much higher that patients without cardiac related illnesses. In the same vein, the findings of Goh et al. (2016) who also compared anxiety and depression in patients with Takotsubo stress cardiomyopathy to those with acute coronary syndrome. The findings of Goh et al. (2016) showed a significant difference in the levels of

anxiety in patients with Takotsubo stress cardiomyopathy and acute coronary syndrome. Thus patients with acute coronary syndrome had higher anxiety than those with Takotsubo stress cardiomyopathy. However there was not significant difference in the levels of depression in the patients; implying that depression levels in both patients groups were similar.

Although the studies were conducted using patients with different health conditions, it gives the indication that psychological distress levels among patients with different health conditions cannot be assumed to be the same. This is because patients respond to their diagnosis differently and also the nature or severity of a particular condition is likely to trigger a psychological response such as high levels of depression and anxiety among other psychological symptoms.

**Type of disease and resilience**

In relation to difference in resilience among patients with Type 2 diabetic, breast cancer and hypertension patients and hypertension, the findings of the study disclosed that there was a significant difference in resilience among breast cancer, type 2 diabetic and hypertensive patients. After Post Hoc analysis, it emerged that the mean score on resilience for hypertensive patients was much higher than that of patients with breast cancer and those with type 2 diabetes. From this, it can be inferred that hypertensive patients are more resilient than patients with breast cancer and diabetes.

The findings from this study are in accordance with the findings of Gooding et al. (2012) who investigated psychological resilience in patients who are older adults as compared to young patients. Gooding et al. (2012) found significant difference in psychological resilience among the two groups.

Gooding et al. (2012) found that while older adults were more emotionally resilient than young adults, young adults were socially resilient than older adults. The researcher stated that their findings highlight the importance of maintaining resilience-related coping skills in both young and older adults who are patients and non-patients but indicate that different psychological processes underlie resilience across the lifespan. Additionally, the work of Ma et al. (2013) revealed similar the findings although it was conducted among different patient groups. Ma et al. (2013) compared three subgroups within a of sample patients with CKD (high risk CKD patients, early CKD patients and pre-end stage CKD patients). The findings made it known that high risk CKD patients were more resilient than early CKD patients and pre-end stage CKD patients. Although differences exist in the samples, the findings point out that there are differences in resilience among different patient groups.

Notwithstanding the fact that Gheshlagh et al. (2016) also found a significant mean difference among cancer patients, cardiovascular disease patients and patients with other diseases, their findings further mentions that cancer patients were more resilient than patients with cardiovascular conditions and patients with other health conditions. This is somewhat different from the findings of this study. This is because whereas Gheshlagh et al. (2016) reports higher resilience in cancer patients, this current study reports a relatively lower level of resilience in the breast cancer patients involved in this study.

**Level of education and resilience**

Literature suggests that level of education has an influence on resilience; thus the study sought to examine the accuracy of this assertion. The

findings from this study communicate no difference in resilience in relation to level of education of the participants involved in the study. Thus resilience in patients with Type 2 diabetes, breast cancer and hypertension is the same regardless of their level of education.

These findings are contrary to literature available on the influence level of education on resilience. For instance, studies by Bonanno et al. (2007) using a large sample of participants investigated predictors of resilience in individuals after a disaster. A number of socio-demographic factors were implicated as predictors of resilience in the study participants. Their findings also showed that level of education also significantly predicts resilience.

Equally, the findings of Ma et al. (2013) points out dissimilar findings to this study. Ma et al. (2013) assessed the relationship between health-promoting behaviours and resilience in patients with chronic kidney disease also how level of education influenced an individual's level of resilience. The findings from the study specify that the patients with higher education level (above high school) have a higher resilience score when compared with patients with lower education levels. Level of education also had a positive and significant relationship with resilience. Ikizer et al. (2016) also explored factors associated with psychological resilience among earthquake survivors from Turkey and found that higher level of education was associated with higher levels of stress-coping ability.

Education was previously shown in many empirical studies to be associated with higher resilience, however the findings of this study exhibits divergent findings. Thus, it does not deny the fact that level of education is associated with resilience. The differences in the findings could be associated

with differences in the samples that were used for the study, how resilience in the sample was measured and the scope of the study.

**Employment status and resilience**

Various empirical studies have tried to establish a connection between employment status and resilience. In relation to patient's employment status and resilience, the findings from this study reported that there was a significant difference in the level of resilience in employed and unemployed patients. Employed patients obtained a much higher mean score on resilience than unemployed patients. Form this, it can be inferred that employed patients are more resilient that those who are not.

Investigating the effect of employment status on the resilience level in patients with CKD, Ma et al. (2013) also had congruent findings. Ma et al. (2013) reported significant a difference in the level of resilience in employed and unemployed participants Also, in their subgroups, both early patients with CKD and those with end-stage renal disease who were employed had higher resilience score than unemployed patients than those at risk of developing CKD. Further review of literature by Ikizer et al. (2016) also revealed a significant difference in level of resilience in employed and unemployed participants. The researcher further stated that individuals who are employed are more resilient.

Similarly Heinz et al. (2018) revealed consistent results. Heinz et al. (2018) focused on exploring employment characteristics, work environment, and how they influence resilience in individuals with chronic depression. The findings revealed that employment at baseline was associated with lower levels of depression at baseline and less severe life courses of depression.

High resilience was found among employed participants, whilst their depression levels were significantly low.

Nevertheless, the findings of Campbell-Sills et al. (2009) were not consistent with findings of this study. Campbell-Sills et al. (2009) explored how several socio-demographic factors predict resilience in the study participants. The finding from the study revealed socio-demographic factors (gender and level of education) combined to predict resilience in people who have experience childhood maltreatment and trauma. However employment status was not a significant predictor of resilience. Thus employment status does not affect resilience.

Employment status was found to influence resilience and this was backed by empirical evidence. However a study by Campbell-Sills et al. (2009) reported different findings. The inconsistencies between the findings of this study and that of Campbell-Sills et al. (2009) could be related to differences in the participants. Campbell-Sills et al. (2009) sampled individuals who had experienced childhood trauma while this study sampled patients with breast cancer, Type 2 diabetes and hypertension.

**Chapter Summary**

This chapter dealt with the analyses of data and presented the results and discussion of findings. Various findings were made. While psychological distress was prevalent in half of the participants; over a third of the participants had low resilience. Perceived expense of psychotherapy was the major help-seeking behaviour of respondents. Resilience was negatively associated with psychological distress and social support did not moderate their relationship. Differences were found in patients on both psychological

distress and resilience. Also, it was found that employment status affects resilience but not level of education and resilience. Findings were discussed in relation to the literature reviewed. Conclusions and recommendations are presented in the next chapter.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## Overview

The overall purpose of this study was to examine psychological distress, resilience and social support among patients with chronic diseases, specifically focusing on patients with Type 2 diabetes, breast cancer and hypertension. The study also focused on exploring the major behaviours that serves as barriers that prevent patients with cancer, diabetes and hypertension from seeking psychological support. Specifically, the study sought to:

1. Investigate the level of psychological distress in patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast.
2. Investigate the level of resilience in patients with Type 2 diabetes, breast cancer and hypertension in Cape Coast.
3. Examine the major help-seeking that prevent patients with Type 2 diabetes, breast cancer and hypertension from seeking psychological help.
4. Establish the relationship between resilience and psychological distress in patients with Type 2 diabetes, breast cancer and hypertension.
5. Determine how social support moderates the relationship between psychological distress and resilience in patients with Type 2 diabetes, breast cancer and hypertension.

6. Ascertain how social support mediates the relationship between psychological distress and resilience in patients with Type 2 diabetes, breast cancer and hypertension.
7. Examine the differences in the level of psychological distress in patients with Type 2 diabetes, breast cancer and hypertension.
8. Investigate the differences in the level of resilience in patients with Type 2 diabetes, breast cancer and hypertension.
9. Determine how level of education influences resilience in patients with Type 2 diabetes, breast cancer and hypertension.
10. Determine how employment status influences resilience in patients with Type 2 diabetes, breast cancer and hypertension.

The study was purely quantitative and specifically employed the descriptive survey design. The stratified and convenience sampling techniques were used to select 83 type 2 diabetic patients, 43 breast cancer patients and 88 hypertensive patients making a total of 214 participants. Participants were required to answer a 46 item questionnaire that measured the various constructs (variables) in the study. The study made use of both descriptive and inferential approaches to data analyses.

**Summary of Findings**

The study identified the following key findings based on the results from the data analysis and in relation to the research questions and hypotheses that guided the study.

Severe psychological distress was prevalent in exactly half of the participants in the study. Thus, there is a likelihood of developing

psychological distress when diagnosed with breast cancer, Type 2 diabetes or hypertension is high.

In relation to resilience, generally low resilience was found in over a third of the total participants involved in this study. However, moderate to high resilience was prevalent in majority of the participants involved in the study. Low resilience was believed to be as a result of the patients' inability to cope with the psychological stress that arises when diagnosed with a chronic condition.

Understanding help-seeking behaviour of the patients was one of the main aims of the study. The findings from the data analysis showed that major help-seeking behaviours that prevented patients from seeking psychological support were the perceived expensive nature of psychotherapy, time constraints as well as personal or social stigma related to mental health.

The results from this study revealed that there is a moderate and inverse relationship between resilience and psychological distress. As resilience increases, psychological distress decreases and as psychological distress decrease, resilience increases. The findings also points out that 34% of the time, resilience predicts psychological distress.

Social support is commonly cited as having a buffering effect on psychological distress, psychosocial adjustment and coping. In this study however, it was found that social support did not moderate or mediate the relationship between resilience and psychological distress.

In general the findings of the study revealed a significant difference in psychological distress among breast cancer, Type 2 diabetic and hypertensive patients. Upon further analysis, it was discovered that psychological distress

was higher in breast cancer patients and patients with type 2 diabetes than hypertension.

The findings also conveyed that there was a significant difference in resilience among patients with Type 2 diabetes, breast cancer and hypertension patients and hypertension. After further analysis, it emerged that hypertensive patients were more resilient than patients with breast cancer and those with Type 2 diabetes.

The findings from this study also communicate no difference in resilience in based on level of education of the participants involved in the study. Thus resilience in patients with Type 2 diabetes, breast cancer and hypertension is the same regardless of their level of education.

Finally, in relation to patient's employment status and resilience, the findings from this makes it known that there was a significant difference in the level of resilience in employed and unemployed patients. Employed patients obtained a much higher mean score on resilience than unemployed patients.

**Conclusions**

According to research, chronic health conditions are increasing by the year. These chronic conditions are mostly as a result of lifestyle factors. Having a chronic disease is a major risk factor to the development of psychological problems. The psychological problems are mostly related to diminishing health status, continuous use of medication, inability to perform certain tasks among others. From the findings of this study, severe psychological distress is relatively high in patients with chronic conditions; thus it is very likely that having a chronic condition would result in the development of psychological problems. Having psychological distress also

has major ramifications not only in patients with chronic conditions but also in individuals without any health conditions. Psychological distress has proven to significantly reduce an individual's ability to withstand effectively to adverse life situations like having a chronic disease.

Most patients with chronic conditions experience psychological problems but they do not seek psychological support. This is as a result of the fact that patients do not understand what having psychological distress means and the effect it has on their mental health. Also, majority of individuals who experience psychological problems delay in seeking support or do not seek support at all because they think that psychological treatment is either expensive or not helpful. Some individuals also have the notion that psychological problems automatically get better with time. Personal and social stigma related to mental health, inability to make time for psychological treatment and mistrust of psychotherapists are also major reasons why individuals with psychological problems would either delay in seeking help or would not seek help at all.

Social support is an important aspect of human health. Although the social support did not moderate or mediate the relationship between psychological distress and resilience in this study, the importance of social support cannot be overruled.

**Recommendations**

Based on the findings of this study, it is recommended that:

1. A holistic approach should be adopted in the treatment of patients with chronic conditions in Ghana's healthcare delivery system. Treatment of conditions such as cancer, diabetes and hypertension almost always

focus on managing the physical conditions and symptoms that the patients present and disregard the psychological and social problems of patients. It is important to have qualified personnel to provide psychological treatment for patients because it would help patients deal with psychological problems associated with their condition and help them cope effectively. This promotes the Biopsychosocial approach suggested by Engel (1977) on the need to consider biological, psychological and social factors when dealing with human health.

2. Clinical psychologist, clinical health psychologist should also focus on helping patients with and without chronic health conditions build resilience and other positive qualities. In most cases clinicians are focus on treating psychological problems of clients and pay less attention to helping client develop positive individual traits that have the ability on influence their quality of life. Helping patients build resilience decreases their likelihood of developing psychological distress and improve their quality of life.
3. Health insurance should also cover the cost of psychological treatment. It is perceived that psychotherapy is expensive and because of this individuals who need support tend to ignore it. Currently, the National Health Insurance Scheme (NHIS) in Ghana does not include the cost of psychological treatment and this in some way prevents individuals from seeking support. The Ministry of Health should consider incorporating psychological treatment into the NHIS in order to relieve patients of the cost burden of psychotherapy. This would encourage patients to seek psychological support.

4. The ministry of health and other mental health advocates should intensify education to help reduce public stigma on mental health. Several programs have been organized to educate the public on how stigma can serve as a hindrance to seeking psychological support it seems that the education has not had the desired effect. For this reason it is important to intensify the education in order to help people understand mental health better and need to seek psychological support if need be.
5. Health care professionals including clinicians, doctors and nurses should educate family and friends on the need to provide support for patients with chronic health conditions. This is because social support has been proven to be an important aspect of health and well-being (APA, 2014).
6. Employment status was found to affect resilience in patients; for this reason, it is recommended that clinicians should incorporate occupational rehabilitation in their treatment of patients. This would help patients return to a level of work activity that is appropriate to their functional and cognitive capacity and improve their ability to withstand adverse life situations.

**Suggestions for Further Research**

This study investigated psychological distress, resilience, social support and help-seeking behaviours of patients with Type 2 diabetes, breast cancer and hypertension. It is recommended that:

1. The study should be conducted in different parts of the country in order to facilitate nationwide generalization.

2. Psychological distress and resilience should be studied in other patient groups since this study only included patients with Type 2 diabetes, breast cancer and hypertension.
3. Researchers should focus on exploring positive human traits and other factors such as personality traits, emotional intelligence among others that have the capacity to help individuals build resilience in the face of adversity.
4. Factors that contribute to poor psychological help-seeking behaviours in individuals should also be examined by researchers in the area.
5. Further studies should include longitudinal observational studies or interventional clinical trials in order to define causality between resilience and psychological distress, as well as to identify predictors for positive outcomes in patients with chronic conditions.

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# APPENDICES

## APPENDIX A

## INTRODUCTORY LETTER


**UNIVERSITY OF CAPE COAST**
**COLLEGE OF EDUCATION STUDIES**
FACULTY OF EDUCATIONAL FOUNDATIONS
**DEPARTMENT OF EDUCATION AND PSYCHOLOGY**

Telephone: 233-3321-32440/4 & 32480/3
Direct: 033 20 91697
Fax: 03321-30184
Telex: 2552, UCC, GH.
Telegram & Cables: University, Cape Coast
Email: edufound@ucc.edu.gh

**UNIVERSITY POST OFFICE**
**CAPE COAST, GHANA**


Our Ref:

27th February, 2019

Your Ref:

**TO WHOM IT MAY CONCERN**

Dear Sir/Madam,

**THESIS WORK**
**LETTER OF INTRODUCTION**
**MR. NANA KWEKU AMISSAH**

We introduce to you Mr. Amissah, a student from the Department of Education and Psychology, University of Cape Coast. He is pursuing Master of Philosophy degree in Clinical Health Psychology and is currently at the thesis stage.

Mr. Amissah is researching on the topic:

**"Psychological, Distress Resilience and Help Seeking Behaviours in Patients with Type 2 Diabetes, Breast cancer and Hypertension."**

He has opted to conduct a pilot testing at your institution/establishment for the Thesis work. We would be most grateful if you could provide him the opportunity for the study. Any information provided would be treated strictly as confidential.

Thank you.

Yours faithfully,

Theophilus Amuzu Fiadzomor (Mr.)
***Senior Administrative Assistant***

## APPENDIX B

## ETHICAL CLEARANCE FROM ETHICAL REVIEW BOARD-UCC

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
*ETHICAL REVIEW BOARD*

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES-ERB/ucc-edu/43/19-33

Date: March 4, 2019

Your Ref: .....

**Dear Sir/Madam,**

**ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY**


*Chairman, CES-ERB*
Prof. J. A. Omotosho
jomotosho@ucc.edu.gh
0243784739

*Vice-Chairman, CES-ERB*
Prof. K. Edjah
kedjah@ucc.edu.gh
0244742357

*Secretary, CES-ERB*
Prof. Linda Dzama Forde
lforde@ucc.edu.gh
0244786680


The bearer, Nana Kweku Amissah, Reg. No EF/CHP/17/0016 is an M.Phil. / ~~Ph.D~~. student in the Department of Education and Psychology in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. He / ~~She~~ wishes to undertake a research study on the topic:

Psychological distress, resilience and help-seeking behaviours of patients with Type II diabetes, breast cancer and hypertension

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed his/~~her~~ proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence his/~~her~~ study. The ERB would be grateful if you would give him/~~her~~ the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,

Prof. Linda Dzama Forde
(Secretary, CES-ERB)

## APPENDIX C

## ETHICAL CLEARANCE FROM ETHICAL REVIEW BOARD- CCTH

*In case of reply the reference number and the date of this Letter should be quoted*

Our Ref.: CCTH

Your Ref.:

P. O. Box CT.1363
Cape Coast
CC-071-9967
Tel: 03321-34010-14
Fax: 03321-34016
Website: www.ccthghana.org
email: info@ccthghana.com

16th April 2019

**Nana Kweku Amissah**
**Department of Education and Psychology**
**University of Cape Coast**
**Cape Coast**

Dear Sir/Madam,

**ETHICAL CLEARANCE – REF: CCTHERC/EC/2019/040**

The Cape Coast Teaching Hospital Ethical Review Committee (CCTHERC) have reviewed your research protocol titled,"***Psychological distress, resilience and help-seeking behaviour in patients with type 2 diabetes, breast cancer and hypertension***" which was submitted for Ethical Clearance. The ERC is glad to inform you that you have been granted povisional approval for the implementation of your research protocol.

The CCTHERC requires that you submit periodic review of the protocol and a final full review to the ERC on completion of the research. The CCTHERC may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the CCTHERC for review and approval before its implementation.

You are required to report all serious adverse events related to this study to the CCTHERC within ten (10) days in writing. Also note that you are to submit a copy of your final report to the CCTHERC Office.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours sincerely

**Prof. Ganiyu Rahman**
**Chairman, ERC**

## APPENDIX D

## DATA COLLECTION INSTRUMENT

UNIVERSITY OF CAPE COAST

FACULTY OF EDUCATION FOUNDATION

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

This questionnaire is designed to elicit information on psychological distress and resilience in patients as well as the barriers that prevent them from seeking help. Information given is solely for academic purpose. Participation is voluntary, and also the respondent is assured that no information will be revealed to any third party without their consent. Thank you.

SECTION A

DEMOGRAPHIC INFORMATION

Respondents are required to please tick the appropriate responses.

1. **Gender**

   Male [ ] Female [ ]

2. **Age**…….....

3. **Level of Education**

   No formal education [ ]

   Basic education [ ]

   Secondary education [ ]

   Tertiary education [ ]

4. **Employment Status**

   Employed [ ]

   Unemployed [ ]

SECTION B

PSYCHOLOGICAL DISTRESS

Participants are required to select the extent to which the following statements are true about them.

1= None of the time 2= A little of the time 3= Sometimes 4= Most times 5= All the time

| | ***Statements*** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| 1 | I get tired out for no good reason | | | | | |
| 2 | I often get nervous | | | | | |
| 3 | I feel so nervous that nothing could me down | | | | | |
| 4 | I feel hopeless | | | | | |
| 5 | I feel restless and fidgety | | | | | |
| 6 | I feel restless that I cannot sit | | | | | |
| 7 | Feeling depressed and sad | | | | | |
| 8 | I feel that everything I do is an effort | | | | | |
| 9 | I feel so sad that nothing could cheer me up | | | | | |
| 10 | I have a deep feeling of worthlessness | | | | | |

SECTION C

RESILIENCE

Participants are required to select the extent to which the following statements are true about them

0= Not true at all  1= Barely true  2= A little true  3= Quite true

4= Completely true

| | ***Statements*** | **0** | **1** | **2** | **3** | **4** |
|---|---|---|---|---|---|---|
| 1 | I am able to adapt to change | | | | | |
| 2 | I can deal with whatever problem the comes my way | | | | | |
| 3 | I try to see the funny side of my problems | | | | | |
| 4 | Coping with stress can help strengthen me | | | | | |
| 5 | I tend to bounce back after illness or hardship | | | | | |
| 6 | I can achieve my goals despite any obstacles | | | | | |
| 7 | I can stay focused when I am under pressure | | | | | |
| 8 | I am not easily discouraged by failure | | | | | |
| 9 | I see myself as a very strong person | | | | | |
| 10 | I can handle unpleasant feelings | | | | | |

SECTION D

SOCIAL SUPPORT

1= Very Strongly Disagree, 2= Strongly Disagree, 3= Mildly Disagree, 4= Neutral, 5= Mildly Agree, 6= Strongly Agree and 7= Very Strongly Agree

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

SECTION D

HELP-SEEKING BEHAVIOURS

Please select the extent to which you agree with the following statements

SD= Strongly disagree D= Disagree A= Agree SA= Strongly Agree

| | ***Statements*** | SD | D | A | SA |
|---|---|---|---|---|---|
| 1 | Psychological problems are common, thus there is no need to seek help. | | | | |
| 2 | Psychological problems get better with time; there is no need to seek help. | | | | |
| 3 | I am worried about what others will think about me when I seek psychological help. | | | | |
| 4 | Due to time constraints it is not possible for me to seek psychological help. | | | | |
| 5 | I think no one can help me with my problem. | | | | |
| 6 | Seeking psychological help is not helpful; hence there is no need to seek psychological help. | | | | |
| 7 | The idea of talking about problems with a psychologist strikes me as a poor way to deal with emotional conflicts. | | | | |
| 8 | Psychotherapy is expensive, therefore making it difficult for me to afford. | | | | |
| 9 | My cultural and religious values prevent me from seeking help | | | | |
| 10 | People can deal with emotional and psychological problems on their own | | | | |

## APPENDIX E

## RESULTS FROM SHAPIRO-WILK NORMALITY TESTS

Table I: *Shapiro-Wilk test for normality of psychological distress based on type of disease*

| Type of disease | Statistic | Sig |
|---|---|---|
| Type 2 diabetes | 1.352 | .221 |
| Hypertension | 1.272 | .152 |
| Breast cancer | 1.322 | .220 |

Table II: *Shapiro-Wilk test for normality of resilience based on type of disease*

| Type of disease | Statistic | Sig |
|---|---|---|
| Type 2 diabetes | 2.513 | .370 |
| Hypertension | 2.741 | .387 |
| Breast cancer | 2.642 | .381 |

Table III: *Shapiro-Wilk test for normality of resilience based on level of education*

| Level of education | Statistic | Sig |
|---|---|---|
| No formal education | 6.47 | .254 |
| Basic education | 6.21 | .230 |
| Secondary education | 6.68 | .351 |
| Tertiary education | 6.34 | .227 |