UNIVERSITY OF CAPE COAST

MANAGEMENT OF CHRONIC NON-COMMUNICABLE DISEASES AT KOMFO ANOKYE AND KORLE BU TEACHING HOSPITALS IN GHANA

HUBERT AMU

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BY

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Thesis submitted to the Department of Population and Health of the Faculty of Social Sciences, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy degree in Population and Health

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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: Hubert Amu

Supervisors' Declaration

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

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

Name: Prof. Akwasi Kumi-Kyereme

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

Name: Prof. Eugene Kofuor Maafo Darteh

ABSTRACT

This study explored the management of chronic non-communicable diseases (CNCDs) at the Komfo Anokye Teaching Hospital (KATH) and Korle Bu Teaching Hospital (KBTH) in Ghana, using phenomenology as the study design. Using purposive and accidental sampling procedures, I interviewed 82 patients receiving care for CNCDs as well as 30 health professionals managing their conditions, using in-depth interview guides. Data collected were analysed using reflexive thematic analysis. The study revealed that management practices by the health professionals included general education on the CNCDs, checking of vital signs, and the prescription of medications/surgeries based on the CNCDs of the patients. Also, management practices by patients were mainly in the form of self-management which included exercise and diet restrictions. Coping strategies adopted by the patients in managing their conditions included prayer and engaging in social activities such as listening to/watching entertainment programmes on radio/television. Challenges faced by health professionals in managing the CNCDs included job-related stress, inadequate staffing, inadequate logistics, poor utility supply, and inadequate in-service training on CNCDs. Patients had financial challenges in buying medicines and undergoing expensive surgeries, especially those not covered by the National Health Insurance Scheme (NHIS). The challenges militate against achievement of the Sustainable Development Goal 3.4 on CNCDs. The findings underscore the need for the Ministry of Health and the Ghana Health Service to develop and implement a chronic care management policy to give more priority to the management of CNCDs.

KEY WORDS

Chronic Non-Communicable Diseases (CNCDs)

Coping strategies

Ghana

Komfo Anokye Teaching Hospital (KATH)

Korle Bu Teaching Hospital (KBTH)

Management of CNCDs

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DEDICATION

To my family, especially my parents (Mr. Prosper Kofi Amu and Mrs. Kafui Amu) and my wife (Mrs. Selasi Amu)

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CCM	Chronic Care Model
CID	Council for International Development
CNCDs	Chronic Non-Communicable Diseases
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardio-Vascular Disease
DALYs	Disability-Adjusted Life Years
FAO	Food and Agricultural Organisation
GAN	Global Asthma Network
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
ICU	Intensive Care Unit
IRB	Institutional Review Board
KATH	Komfo Anokye Teaching Hospital
KBTH	Korle Bu Teaching Hospital
KNUST	Kwame Nkrumah University Science and Technology
LMICs	Low- and Middle–Income Countries
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
NORD	National Organisation for Rare Disorders
POAC	Primary Open Angle Glaucoma
SAGE	Study on Global Ageing and Adult Health
SCD	Sickle Cell Disease
SDG	Sustainable Development Goal
SES	Socio-Economic Status
SHS	Senior High School
SSA	Sub-Saharan Africa
UCC	University of Cape Coast
WHO	World Health Organisation

CHAPTER ONE

INTRODUCTION

Background to the Study

This study is about the management of chronic non-communicable diseases (CNCDs). The study used qualitative data collected from 82 patients and 30 health professionals at Komfo Anokye Teaching Hospital (KATH) and Korle Bu Teaching Hospital (KBTH) in Ghana. CNCDs are becoming the heaviest burden to healthcare systems worldwide (Dugee, Palam, Dorjsuren, & Mahal, 2018; Wang, Brenner, Kalmus, Banda, & De Allegri, 2016; World Health Organisation [WHO], 2011a). Globally, they are the primary cause of mortality, and their significance, compared to injuries and communicable diseases, is projected to increase in the next two decades (Kim et al., 2017). The number of deaths from CNCDs is currently double the number of deaths that result from a combination of infectious diseases (including Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome [HIV/AIDS], tuberculosis, and malaria), maternal and perinatal conditions, and nutritional deficiencies (WHO, 2017a). According to the WHO (2018a), 41 million people die of CNCDs each year, accounting for 71 percent of all global deaths.

CNCDs are illnesses that are prolonged, do not resolve spontaneously, and are rarely cured completely (Evashwick, 2005). They are diseases of extended duration and usually of slow progression (WHO, 2011a). Their risk factors include smoking, being overweight, and physical inactivity (Stenholm et al., 2016). Physical or functional disabilities usually characterise CNCDs

(Onder et al., 2015). Cardiovascular disease (CVD), diabetes, and cancer are examples of highly prevalent CNCDs at the global front (Busija, Tan, & Sanders, 2017; Helgeson & Zajdel, 2017). About 17.7 million people, for instance, die from CVD annually across the globe (WHO, 2017b). Cardiovascular diseases include coronary heart disease, rheumatic heart disease, deep vein thrombosis, and acute conditions like stroke and heart attack (WHO, 2017b).

While CNCDs are traditionally thought to be more prevalent in developed countries, the majority of the increase in these diseases globally are occurring in developing countries (Nugent et al., 2018). Out of the 41 million deaths which are attributable to CNCDs each year, 80 percent are in developing countries (Kelishadi & Farajian, 2014; WHO, 2017b). Cardiovascular diseases in developing countries are, for instance, on the ascendency (Nugent et al., 2018). Thus, three-fourths of global CVD deaths occur in developing countries (WHO, 2017b).

The risk of CNCDs is increasing due to the improved availability of tobacco products, and saturated fats and sugars, and a decrease in physical inactivity at work and home (Marmot & Bell, 2019; Sorsdahl et al., 2018). While financially stable people living in urban settings may be able to change their levels of risk factors (for instance tobacco, excess calories from saturated fats and sugars), the poor may find it difficult to live healthy lives in urban areas and would, thus, constitute the majority of those suffering from CNCDs (Food and Agricultural Organisation [FAO], 2018). Although CNCDs can affect all people irrespective of age, they are most common among older people (Baldwin, Chenoweth, & dela Rama, 2015). Sixty percent of annual deaths due to CNCDs occur among people aged 60 years and above (Mugisha et al., 2016).

The increasing prevalence of CNCDs is problematic for sub-Saharan Africa (SSA) since these CNCDs are already a major cause of mortality in the sub-region (Council for International Development [CID], 2015). CNCDs prevail in the sub-region at the backdrop that meeting the needs of the ever-increasing population in SSA will be critical to achieving the Sustainable Development Goals (SDGs), and specifically, Goal Three, which aims at ensuring healthy lives and promoting the wellbeing of all at all ages (CID, 2015)

In Ghana, a significant proportion of the population continue to suffer from CNCDs such as CVD, hypertension, and diabetes (WHO, 2014a). The elderly population (60 years and above) of the country is projected to increase from 1,643,381 in 2010 (6.7%) (Ghana Statistical Service [GSS], 2013) to about 2.5 million by 2025 and 6 million by 2050 (14%) (Amofah, 2014). As the prevalence of CNCDs increases with age (Minicuci et al., 2014), the increasing population of older people in the country poses an increasing burden of CNCDs and cost to individuals, families, communities, the health systems, and the government (Amofah, 2014). This study, therefore, sought to explore the CNCD management situation in the country and suggest appropriate policy directions necessary in dealing with them. The findings would be useful in informing policy decisions on the management of CNCDs in the country.

Statement of the Problem

In Ghana, CNCDs remain major public health concerns and have social and financial implications for the wellbeing of the individuals and their social support networks/mechanisms (the family and other caregivers) (Adjei et al., 2018). In an examination of the burden of CNCDs in Ghana, Ayernor (2012) noted that stroke, hypertension, diabetes, and cancer had become part of the top ten causes of death in Ghana. Also, in a quantitative cross-sectional study conducted by Vialle-Valentin, Serumaga, Wagner, and Ross-Degnan (2015), the authors posited that the prevalence of hypertension, asthma, and diabetes in Ghana was 46 percent, 17 percent, and 10 percent respectively. Despite these findings, decision-makers and individuals still do not consider CNCNDs as constituting a public health threat in the country (Ofori-Asenso & Garcia, 2016).

There are a plethora of studies on CNCDs in Ghana (Abuosi et al., 2016; Ayernor, 2012; Azumah, 2014; de-Graft Aikins, 2007; de-Graft Aikins, Anum, Agyemang, Addo, & Ogedegbe, 2012; de-Graft Aikins, Kushitor, Koram, Gyamfi, & Ogedegbe, 2014; Minicuci et al., 2014; Nti, Brown, & Danquah, 2012; Saeed, Abdul-Aziz, Blay, & Zhao, 2013; Tagoe, 2012; Tenkorang & Kuuire, 2016; Vellakkal, et al., 2014; Vialle-Valentin et al., 2015; Yawson et al., 2016). However, these studies lack in many significant ways. For instance, only de-Graft Aikins et al.’s (2012) study was partly done qualitatively. It was, however, conducted among lay people (people who did not necessarily have a CNCD) and focused on their views of the prevalence of various CNCDs (thus, the CNCDs that they felt were most prevalent in Ghana). There was, therefore, the need for a health facility-based study of persons living with CNCDs. Besides, there was the need to obtain the perspectives of health providers who are at the forefront of the management of the diseases and, therefore, have a deep understanding of the vicissitudes involved in living with the diseases. The current study, therefore, focused on patients who had been diagnosed with CNCDs and who had gone to the health facilities to access care, as well as the health professionals who manage such conditions. The previous studies also did not qualitatively investigate the coping strategies of patients with CNCDs that they suffered (Årestedt, Persson, Rämgård, & Benzein, 2018). The current study, therefore, explored the coping strategies of CNCD patients.

Purpose of the Study

This study sought to explore the management of CNCDs among patients and health professionals responsible for managing the conditions at KATH and KBTH. The study becomes necessary because, as the population of Ghana keeps increasing over time along with increasing life expectancy, CNCDs which serve as threats to the very survival of the population also keep increasing. This makes it imperative for the health delivery system in the country to be re-focused to pay more attention to the needs of those living with CNCDs than it currently does. This is important because the care of people with CNCDs requires a large proportion of health and social care resources.

It is also essential to ascertain the difficulties that arise during the management of CNCDs and dealing with changing needs emanating from living with the diseases. With increased knowledge of challenges in everyday life based on the experiences of those affected, the health system is better informed and equipped to recognise the complexity of living and coping with CNCDs. Disadvantages recognised can then be used as a basis for the development of programmes for treatment, support, and rehabilitation, which are more relevant to the lives and concerns of persons living with the CNCDs and their relations.

Objectives of the Study

The study generally sought to explore the management of CNCDs at KBTH and KATH in Ghana. Specifically, the study sought to:

1. Explore practices involved in the management of CNCDs by patients and health professionals;
2. Ascertain the coping strategies adopted by patients in managing their conditions; and
3. Explore the challenges associated with the management of CNCDs by patients and health professionals.

Significance of the Study

This study has generated essential empirical knowledge on practices, coping strategies, and challenges associated with the management of CNCDs in the two biggest health facilities in the country. While KBTH serves as the key referral point for health care in southern Ghana, KATH serves the populations in Northern Ghana. The selection of the two facilities was, therefore, to give the study a nationwide scope regarding the management of CNCDs. This makes the study to add extensively to the literature on CNCDs in the country.

The various challenges which bedevil the management of the diseases have also been unearthed. This provides an in-depth insight into the strategies needed to address the challenges and to improve the status quo. The findings of the present study will inform key stakeholders such as the Ghana Health Service (GHS), the Ministry of Health (MoH), the National Health Insurance Authority (NHIA) (managers of the country's social health insurance scheme), as well as health professionals and patients to adopt the innovative strategies proffered by the present study to improve the management of CNCDs in the country. The study also serves as reference material for future research on the management of CNCDs in the country.

Delimitation

Health professionals in the two facilities and patients who access CNCD-related healthcare from the two facilities were targeted for the data collection. The health workers (who had direct contacts with the patients when they visit the facilities to access services), doctors, nurses, physiotherapists, and optometrists were included in the study. The WHO defines the scope of CNCDs to include diabetes, cancer (breast, prostate, cervical, leukaemia, eye, lung), chronic kidney disease, chronic lung disease (Chronic Obstructive Pulmonary Disease [COPD] and asthma), hypertension, sickle cell, glaucoma, and stroke (WHO, 2011a). These conditions were, thus, adopted for the present study.

Definition of Terms

Chronic noncommunicable diseases (CNCDs)

Chronic non-communicable diseases (CNCDs) have been defined as diseases or conditions that occur in, or are known to affect individuals over an extensive period and for which there are no known causative agents that are transmitted from one affected individual to another (WHO, 2011a). The current study defines the scope of CNCDs to include diabetes, cancer (breast, prostate, cervical, leukaemia, eye, lung), chronic kidney disease, COPD, asthma, hypertension, sickle cell, glaucoma, and stroke. These conditions were, thus, adopted for the present study.

Health professional

A health professional is a person associated with either a specialty or a discipline and who is qualified and allowed by regulatory bodies to provide healthcare service to a CNCD patient (Farlex, 2019). Health professionals include doctors, nurses, midwives, physiotherapists, optometrists, and pharmacists.

Patient

A patient, according to the WHO (2011b), refers to “a person who is the recipient of healthcare” (p. 3). In the case of the current study, however, a patient is defined as a person receiving healthcare for CNCDs in KBTH and KATH.

Patient involvement

Patient information, shared care, and decision-making are considered essential in the management of CNCDs (Kennedy & Rogers, 2002). In this thesis, patients' involvement entails being consulted in decision-making as well as being provided with adequate information on the management of their care by health professionals.

Patients are considered actively involved in the management of their care by health professionals when they are consulted in decision-making regarding their care such that they have the choice to choose from management options where necessary as well as provided with adequate information on their conditions. Patients are considered passively involved if they are not consulted and their opinions sought on management decisions regarding their care as well as not provided with adequate information

Organisation of the Study

The study is organised into eight chapters. Chapter One entails an introduction to the study. It comprises the background to the study, statement of the problem, the purpose of the study, research objectives, significance of the study, delimitations, definition of terms, and organisation of the study. Chapter Two reviews the empirical literature relevant to the study. It is mainly based on the objectives of the study. Chapter Three also focuses on theoretical and conceptual issues. Chapter Four presents the profile of the study area and research methods which include the research philosophy, study design, study setting, population, sampling procedure, data collection instruments, data collection procedures, data processing and analysis, dissemination of results, positionality, ethical considerations, and limitations. Chapter Five presents and discusses findings based on the CNCD management practices of patients and health professionals. Chapter Six presents the coping strategies adopted by patients in managing their CNCDs, and Chapter Seven focuses on the challenges faced by patients and health professionals in the management of CNCDs at KATH and KBTH. Chapter Eight summarises the entire study, draws conclusions based on the key findings, and makes recommendations for policy and practice, as well as further research.

CHAPTER TWO

EMPIRICAL LITERATURE REVIEW

Introduction

Empirical literature relevant to the study is reviewed in this chapter. It focuses mainly on the burden of CNCDs, the practices involved in the management of CNCDs, coping strategies adopted by patients in managing their conditions, and challenges associated with the management of CNCDs.

The Burden of Chronic Non-Communicable Diseases

The literature on the burden of CNCDs has been divided into three sections. These are the global burden of CNCNs, the burden of CNCDs in developing countries, and the burden of CNCDs in Ghana.

Global burden of chronic non-communicable diseases

Globally, the burden of CNCDs is increasing rapidly and is anticipated to further upsurge across the world (Melkamu & Jeanne, 2019). The increasing burden of CNCDs has implications for future healthcare policy and resource allocation and would continue to present a major challenge for policymakers across the globe (Hajat & Stein, 2018). The burden of CNCDs from 2004 to 2011 was identified to have increased from 34.9 percent to 41.8 percent while self-reported illnesses have increased throughout 2001 to 2011 from 41.0 percent to 46.6 percent (van Oostrom et al., 2016). Van Oostrom et al. argued that, from 2004 to 2011 and 2001 to 2011, multi-morbidity progressed from 12.7 percent to 16.2 percent and from 14.3 percent to 17.5 percent, respectively. The authors further found that the presence of multiple illnesses in the same individual, multimorbidity, is increasing, aside from the increasing number of people living with specific illnesses.

In a study conducted by Cho et al. (2018) to estimate the global prevalence of diabetes for 2017 and projections for 2045, it was revealed that, in 2017, there were 451 million (aged 18+ years) people living with diabetes globally, and these figures were expected to rise to 693 million by 2045. It was also revealed that almost half of all people (49.7%) living with diabetes were undiagnosed (Cho et al., 2018). Moreover, there were estimated 374 million people with impaired glucose tolerance, and it was anticipated that almost 21.3 million live births to women were affected by some form of hyperglycaemia in pregnancy (Cho et al., 2018). The global occurrence (age-standardised) of diabetes has doubled since the year 1980 (from 4.7% to 8.5%) in the adult population. The rise indicates an increase in associated risk factors like overweight or obesity (WHO, 2018b).

Chronic lung diseases include interstitial lung disease, asthma, COPD, pneumoconiosis, and pulmonary sarcoidosis (Zhao, Dennery, & Yao, 2018). Of these diseases, COPD and asthma are the most common (Zhao, Dennery, & Yao, 2018). The WHO estimates that 235 million people currently have asthma, noting that the prevalence of asthma has increased over time and is responsible for an additional 4.15 million disability-adjusted life years (DALYs) (Masjedi, Ainy, Zayeri, & Paaydar, 2018). In the United States (US), chronic lung diseases are the third leading cause of death, with prevalence remaining unchanged at an estimated 15 million despite the declining rates of smoking (Wysham, Cox, Wolf, & Kamal, 2015). Chronic lung diseases, including asthma, chronic COPD, and bronchiectasis, contribute to the growing CNCDs burden, with approximately 235 and 250 million people living with asthma and COPD, respectively, in the world (Saleh et al., 2018).

An estimated 4.3 percent of the global population belonging to the age group 18–45 years report a doctor’s diagnosis of asthma, 4.5 percent reported either a doctor’s diagnosis or that they were taking treatment for asthma, or 8.6 percent report that they had experienced attacks of wheezing or whistling breath, with Australia, Northern and Western Europe, and Brazil having the highest prevalence (Global Asthma Network [GAN], 2018). According to GAN (2018), in 2016, asthma, across all ages, contributed 23.7 million DALYs globally, and this total burden of disease has remained unchanged since 1990, despite the substantial increase in world population over that time. Hence, the age-standardised rate (329.2 DALYs per 100,000 population in 2016) has decreased by 36 percent since 1990 (GAN, 2018). The GAN (2018) noted that asthma is globally ranked 28th.

Hypertension is a global public health issue that contributes significantly to CVD, kidney failure, premature deaths, and disabilities (WHO, 2016a). The WHO’s 2016 Global Health Observatory (GHO) data estimated that high blood pressure would cause 7.5 million deaths, about 12.8 percent of the total of all deaths. This accounts for 57 million DALYs or 3.7 percent of total DALYS (WHO, 2016a).

Sickle cell disease (SCD) is the most common genetic haematological disorder, accounting for over 305,000 deaths in 2010, with millions of people currently affected across the globe (Wastnedge et al., 2018). According to Wastnedge et al. (2018), in high-income settings, the current life expectancy for patients with SCD is estimated to be between 45-55 years of age. In the European countries, migration of the tropical and subtropical people increased the number of deaths due to SCD from 113,000 to 176,000 by 2013 (Worldatlas, 2017). SCD is the most prevalent inherited blood disease affecting 20–25 million people globally (Stephen et al., 2018).

Globally, there are an estimated 60 million people with glaucomatous optic neuropathy, with about half of this number being unaware of their condition, and it is set to increase to 80 million and 11.2 million respectively by 2020 (Quigley & Broman, 2006). De-Gaulle and Dako-Gyeke (2016) stated that Angle-closure glaucoma is known to be highly prevalent among East Asians whilst Africans and people of African descent have a higher record of the prevalence of open-angle glaucoma. Of these, 74 percent of all cases will be due to primary open-angle glaucoma that will cause bilateral irreversible blindness in 4.5 million people (Kumah et al., 2018).

Kocić et al. (2019) noted that, by 2020, almost 79.6 million people in the world will have glaucoma and more than 11 million will be, therefore, bilaterally blind consequently. The occurrence of blindness in all types of the disease has been estimated at 5.2 million, with 3 million cases of open-angle primary glaucoma (Kocić et al., 2019). Also, as mentioned by Alnujaim and Alnujaim (2018), it has been estimated that the occurrence of primary open angle glaucoma (POAG) is at 2.4 million people per year, and blindness prevalence for all types of glaucoma is also estimated to be 5.2 million people with 3 million cases caused by POAG. The prevalence rate of the disease among people above forty years is 8.5 percent and those above 30 years is 7.7 percent (Alnujaim & Alnujaim, 2018). Globally, stroke is the second leading cause of death and the third leading cause of disability (Johnson, Onuma, Owolabi, & Sachdev, 2016).

The global burden of cancer has been rapidly increasing over the past decades (Lin et al., 2019). Breast cancer is the most frequently diagnosed cancer and the leading cause of cancer-related deaths among women throughout the world (Bray et al., 2018). In 2012, an estimated 1.7 million women were diagnosed with breast cancer (Ferlay, Forman, Mathers, & Bray, 2012). In 2018, this shot up to over two million incident cases (Bray et al., 2018).

Prostate cancer is one of the leading causes of death from cancer among men (Taitt, 2018). It was the fifth leading cause of death from cancer in men, with an estimated 307,000 deaths (6.6% of total male cancer mortality) (Taitt, 2018). More than 1.2 million prostate cancer cases and 358,000 deaths occur annually (Sartor, 2018). According to Parra, Oden, Schmeler, and Richards-Kortum (2019), cervical cancer remains one of the leading causes of cancer for women in medically underserved areas. WHO (2016b) stated that cervical cancer is one of the most common cancers overall in women, with an estimated number of 570,000 new cases in 2018, representing 6.6 percent of all female-affected cancers (WHO, 2019a).

According to Kaliki, Shields, and Shields (2015), uveal melanoma (eye cancer) represents 79-81 percent of ocular melanomas and 3 - 5 percent of all melanomas. According to Bray et al. (2018), lung cancer among males is the leading cause of mortality in the majority of the countries in Eastern Europe, Western Asia (notably in the former Soviet Union), Northern Africa, and specific countries in Eastern Asia (China) and South-Eastern Asia (example, Myanmar, the Philippines, and Indonesia).

Burden of chronic non-communicable diseases in developing countries

The increasing burden of CNCDs is not limited to only the developed regions of the world. Current statistics on CNCDs indicate that earlier labelling of CNCDs as "diseases of affluence" is a misnomer (WHO, 2018a). This is because, every year, 15 million people aged 30 to 69 die from CNCDs and over 85 per cent of these deaths happen in developing countries (WHO, 2018a). The implication is that, although developing countries are still dominated by the burden of infectious diseases such as HIV/AIDS, malaria, and tuberculosis (Parpia, Ndeffo-Mbah, Wenzel, & Galvani, 2016), most of all global deaths attributable to CNCDs also occur in these developing countries (WHO, 2018a).

The rate at which disease patterns are changing in the developing countries is more rapid than the industrialised regions of the world (Bollyky, Templin, Cohen, & Dieleman, 2017). A major public health threat needing immediate and effective action has been gradually created as a result of this rapid rate of change and the increasing burden of disease. Consequently, the developing countries often have a double burden of disease (WHO, 2018a). The WHO also indicated that, in developing countries, specific non-communicable diseases such as ischaemic heart disease (IHD), stroke, and diabetes will account for 71 percent, 75 percent, and 70 percent of deaths, respectively by 2020 (WHO, 1998).

In 1980, the burden of diabetes was utmost in high-income countries (5.2%) and nethermost in low-income countries (3.3%) (WHO, 2018b). The number of people with diabetes increased from 180,000,000 in 1980 to 422,000,000 in 2014. This increase was attributed to population increment and ageing (40%), increase in age-specific prevalence (28%), and interaction of the two (32%). Age-standardised prevalence in adults 18-year-old and above has nearly doubled, from 4.7 percent in 1980 to 8.5 percent in 2014. WHO (2018b) further revealed that, in 2014, the incidence became higher in low-income (7.4%) than in high-income (7.0%) countries.

The incidence of diabetes has increased faster in low- and middle-income countries and is currently utmost in upper-middle-income countries (9.3%) (WHO, 2018b). In WHO regions, the occurrence is utmost in the Eastern Mediterranean region (13.7%) and nethermost in the African region (7.1%). Over the past decade, diabetes incidence has increased quicker in low- and middle–income countries (LMICs) than in high-income countries (HICs).

With an ageing global population, chronic lung diseases are becoming the more prominent cause of death and disability, and also, age-standardised death rates from chronic obstructive pulmonary disease (COPD) are highest in low-income regions of the world, particularly South Asia and SSA, even though airflow obstruction is relatively uncommon in these areas (Burney, Jarvis, & Perez-Padilla, 2015).

According to Saleh et al. (2018), mortality and morbidity associated with chronic lung diseases are particularly high in LMICs, which account for over 90 percent of COPD deaths worldwide. The GAN (2018) has also argued that asthma is globally ranked the 27th among the leading causes in LMICs. Estimates of hypertension show that, in some places in Africa, more than 40 percent of adults are hypertensive (Bygbjerg, 2012).

In developing countries, it is thought that most children with SCD die before reaching adulthood, with more than 500 children with SCD dying every day because of poor access to appropriate treatment (Wastnedge et al., 2018). This is emphasised by current estimates proposing that 90 percent of SCD occurs in LMICs, and 90 percent of children with SCD in LMICs die before their 5th birthday. According to the National Organisation for Rare Disorders (NORD, 2019), the frequency of SCD varies from country to country.

The sickle cell trait is present in approximately 40 percent of the general population in some areas of Africa (NORD, 2019). According to the NORD (2019), the incidence of sickle cell trait in Americans of African descent is 9 percent and that mutations in the HBB gene are common in people from African, Mediterranean, Middle Eastern, and Indian ancestry and people from the Caribbean and parts of Central and South America, but can be found in people of any ethnicity. According to Worldatlas (2017), sickle cell disease is predominant in tropical regions of SSA where malaria is endemic.

Sickle cell disease is the most prevalent inherited blood disease in the WHO African Region, affecting 12–15 million of the population (Stephen et al., 2018). Nigeria records the highest SCD incidence in the world, with approximately 91,011 children born with the defect, and the rate accounts for almost 2 percent of all new-borns annually. Also, the Democratic Republic of Congo records 39,743, followed by Tanzania (11,877), Uganda (10,877), Angola (9,017), Cameroon (7,172), Zambia (6,039), as well as Ghana, Guinea, and Niger recording less than 6,000 sickle cell births per year (Worldatlas, 2017).

In SSA, glaucoma accounts for 15 percent of blindness and it is the region with the highest prevalence of blindness relative to other regions worldwide (Kumah et al., 2018). Again, the highest prevalence of open-angle glaucoma is seen in Africans and the highest prevalence of angle-closure glaucoma occurs in the Inuit. According to Kumah et al. (2018), studies have reported that most people in Africa with primary open-angle glaucoma are not aware of the disease and that half of the eyes are blind at presentation. Some authors have emphasised the younger age of onset of glaucoma in Africans, compared to Caucasians and suggested, thereof, a screening earlier than the universally recommended age of 40 years.

According to Johnson et al. (2016), globally, 70 percent of strokes and 87 percent of both stroke-related deaths and disability-adjusted life years occur in low- and middle-income countries. Johnson et al. stated, in their study, that, over the last four decades, the stroke incidence in low- and middle-income countries has more than doubled and that, during these decades, stroke incidence has declined by 42 percent in high-income countries. Again, Johnson et al. noted, in their study, that, on average, a stroke occurs 15 years earlier in (and causes more deaths of) people living in low- and middle-income countries, when compared to those in high-income countries.

The burden of cancers has been on the increase in developing countries, with breast cancer being the most diagnosed cancer (WHO, 2017c). In SSA, for instance, the burden of breast cancer is projected to keep increasing (Black & Richmond, 2019). Sub-Saharan Africa is also the region with the utmost incidence of cervical cancer in the world, with associated high mortality affecting women at their prime (Ntekim, 2012). In 2018, approximately 90 percent of deaths from cervical cancer occurred in LMICs (WHO, 2019a). The incidence of uveal melanoma is, however, less in Africa and Asia, with an incidence rate of 0.2–0.3 cases per million per year (Kaliki & Shields, 2017). This is, however, also estimated to keep increasing (Kaliki & Shields, 2017).

Burden of chronic non-communicable diseases in Ghana

In Ghana, the burden of CNCDs, accompanied by their mortalities among the population, has achieved epidemic proportions in the past decade (Yawson, Abuosi, Badasu, Atobra, Adzei, & Anarfi, 2016). The CNCDs are responsible for about 42 percent of deaths and 31 percent of the disease burden in Ghana, and about 88,000 persons in Ghana die of CNCDs each year (WHO, 2014a).

The proportion of Ghanaians living with diabetes ranges from 6 to 7 percent (Sarfo-Kantanka et al., 2014). Asthma is also on the rise in Ghana, with WHO's estimate reporting that asthma accounted for 1.5/1000 people per year of disability-adjusted life years (DALYs) in Ghana (GAN, 2018). In Ghana, hypertension is the leading chronic non-communicable disease. The overall prevalence of hypertension in the country is 13.0 percent (13.4% for females and 12.1% for males) (Sanuade, Boatemaa, & Kushitor, 2018). Among various groups, women constitute the majority of people with hypertension (37%) (GSS, GHS, & ICF International, 2015; Laar et al., 2019). The major prevalent risk factors contributing to the high surge in CNCDs are physical inactivity (54.3%), alcohol consumption (64.8%), overweight (54%), and obesity (40.4%) (Nelson, Nyarko, & Binka, 2015).

Ghana has been identified as the second country in the world with the highest prevalence rate of glaucoma, with about 700,000 people affected, and out of this number, 250,000 people are not aware of their condition while about 60,000 people are already blind (Glaucoma Association of Ghana, 2015). Two percent (about 15,000) of new-borns in the country have SCD, with 55 percent of them having the homozygous form (Asare et al., 2018). Despite this high prevalence of SCD in Ghana, the extent of the burden of the disease in adults is yet to be quantified and the life expectancy of the Ghanaian SCD patient is not known, though it is generally agreed that more children with the disease now survive into adulthood. Sampane-Donkor et al. (2014) noted that stroke is one of the top three causes of death and constitutes more than one-tenth of all causes of deaths in the country.

Cancers have also been on the ascendency in Ghana, with breast cancer currently the commonest cancer in the country (Amoako et al., 2019). In 2018, for instance, out of 22,823 cancer cases recorded in the country, breast cancer was the single most prevalent cancer, with a prevalence of 20.4 percent (International Agency for Research on Cancer [IARG], 2018). Statistics from Ghana on prostate cancer indicate that the disease is the second most common cancer among men, after liver cancer, with an incidence of more than 200 cases per 100,000 of the population per year (Kinyao & Kishoyian, 2018). Out of 417 respondents assessed in Keteke, a Sub-Metro in Accra, 67 percent had low knowledge on cervical cancer and only 4.8 percent of the respondents have ever been screened (Ofori-Attah, 2015). Overall, in Ghana, cervical cancer was the second most prevalent cancer recorded in 2018, after breast cancer, with 13.8 percent prevalence (IARG, 2018).

In as much as the rapidly increasing prevalence of CNCDs is concerned, its public health implications are overwhelming and are already manifesting. Interestingly, CNCDs are generally preventable (WHO, 2018a). From the review, there is a lack of consistency in the studies on the trends in the burden of the CNCDs. As such, the literature review was only conducted on the scant literature available on the topic of regionally and in Ghana.

Practices Involved in Management of Chronic Non-Communicable Diseases

This section of the empirical literature review is divided into three sub-sections. These are practices by health professionals, practices by patients, and practices by caregivers.

Practices by health professionals

Management of CNCDs involves a coordinated effort by a multidisciplinary team of health professionals and often recognised as the best approach for quality care (Yeung et al., 2016). This approach is most beneficial in the management of CNCDs in that there are more contribution and insights of different and broader bodies of knowledge and skills (Wagner, 2000). The health systems reorient health facilities, especially secondary and tertiary level facilities, to address the needs of people with CNCDs (Allotey, Davey, & Reidpath, 2014; Lall & Prabhakaran, 2014). This includes drug management for current conditions, screening and controlling for complications and co-morbidities, and actively promoting an appropriate lifestyle, to complement clinical management and secondary prevention of possible complications (Lall & Prabhakaran, 2014).

Appropriate management of CNCDs requires that the WHO Package of Essential NCD Interventions (WHO PEN) is employed as the basic package for CNCDs education/counselling, screening, and management (Jacobs et al., 2015). The WHO PEN is an innovative and action-oriented set of cost-effective interventions that are provided to a standard quality of care, even in resource-poor countries (Jacobs et al., 2015). Services provided as components in the management of CNCDs include screening, diagnosis, treatment, follow-up, management of complications, referrals, counselling, and education on lifestyle change (Allotey et al., 2014; Jacobs et al., 2015). Health systems require to provide access to comprehensive management, including counselling and monitoring of the patients' status (Beran, McCabe, & Yudkin, 2008).

There has been a progressive increase in the role of nurses in managing many CNCDs in countries where primary care is highly centred on multi-professional teams of physicians, nurses, and other health workers and where patients registered with a particular primary care provider (Nolte et al., 2008). It usually takes the form of nurse-led clinics, discharge planning, and/or case management. Sweden, England, and, more recently, the Netherlands have such a system (Nolte et al., 2008). For example, nurse-led clinics are now common at primary healthcare centres, hospitals, and polyclinics in Sweden, which manage diabetes and hypertension, while others manage allergy/asthma/COPD, psychiatric disorders, and heart failure (Nolte et al., 2008).

Nurse-led heart failure clinics with nurses empowered to change medication regimes within agreed protocols had been established in two-thirds of hospitals by the late 1990s (Stromberg et al., 2001). This approach ensures better outcomes and reduced costs than traditional physician-led care, as evident in many countries and for a variety of diseases (Singh, 2005; Vrijhoef et al., 2001). However, it is anticipated that, due to differences in professional roles in Europe, care should be taken while applying this approach in other parts of the world (Smith, Edwards, Courtney, & Finlayson, 2001). Nolte et al. (2008) posit that England, for instance, has substantial local diversity in the addressing of CNCDs, while including common elements such as nurse-led clinics and other nurse-led services including specialist nurses as case managers of persons with complex requirements (“community matrons”), and multidisciplinary teams. Central to the Government’s approach to supporting patients with CNCDs are community matrons.

A new CNCD paradigm that has subsequently emerged is the patient-professional partnership which involves collaborative care and self-management education (Fu, McNichol, Marczewski, & Closs, 2016). Self-management education by health professionals has been observed to supplement conventional patient education by supporting patients with chronic CNCDs to live the best possible quality of life.

Practices by patients

Many practices regarding the management of CNCDs are employed by patients (Grady & Gough, 2014). Most of these require patients and their caregivers to repeatedly visit the health facility for management of their conditions, a phenomenon which creates a significant financial burden for patients (Jacobs, Hill, Bigdeli, & Men, 2015). Some CNCD management approaches involve patients' efforts at controlling the diseases and their effects (Clark, 2003). Some of these approaches may be effective or ineffective and even may or may not be coherent with recommendations of clinicians. They include self-management and group management (Grady & Gough, 2014).

Self-management as a concept was first described and used by Thomas Creer as the active participation of patients in the treatment of their conditions (Lorig & Holman, 2003). However, self-management is now used widely and described with varying definitions and conceptualisations, resulting in lack of clarity and coherence in the literature (Ryan & Sawin, 2009). Clark, Becker, Janz, Lorig, Rakowski, and Anderson (1991), and Lorig and Holman (2003) provide a broader definition of self-management as the individuals' daily management of CNCDs over the course of their illnesses.

The active role of the patient with a chronic non-communicable disease in managing his or her condition is the emphasis of self-management programmes (Swendeman, Ingram, & Rotheram-Borus, 2009). Regardless of the CNCD, the development of a generic set of skills has proven successful in allowing individuals to effectively manage their illness and improve health outcomes (Lorig et al., 1999). A report by the United States Department of Health and Human Services (2010) included self-management as one of 4 goals in a strategic framework for improving the health status of individuals with multiple CNCDs.

The 2012 Institute of Medicine report also included self-management as one of several models of living well interventions, noting that self-management programmes instil individual responsibility and offer tools for patients to use in caring for their chronic non-communicable illness (Institute of Medicine, 2012). Positive outcomes have been reported for this management strategy. For instance, in a randomised clinical trial, self-management of patients with CNCDs was shown to improve health status while reducing healthcare utilisation (Lorig, Sobel, Ritter, Laurent, & Hobbs, 2001).

Whereas some patients, when left to themselves, may develop avenues to control the disease that physicians or health educators would be impressed (for instance, ridding the living room of environmental precipitants to symptoms by a susceptible asthma patient), others may not (for example, to lessen symptoms, the person misuses bronchodilators). Clark (2003) posits that a patient’s observations, perception, and reactions, together with internal and external factors, shape the management strategy he or she chooses. The author further adds that one’s associates such as family and friends exert an influence on the strategy chosen. However, his or her personal goals and the experiences of self-regulation, together with internal and external factors, ultimately determine the management strategy derived and employed (Clark, 2003).

In the management of a disease by the patient, controlling its effects is paramount. As such, there are a variety of influences in the person’s social and physical environments that enhance or impede management efforts (Clark, 2003). Bodenheimer et al. (2002) note that patients with CNCDs make daily decisions about self-management of their conditions and, hence, interventions to improve management by patients can produce positive outcomes. These include fewer symptoms, better monitoring of a condition, and improved physical and psychosocial functioning.

Older adults have difficulty changing their perceptions and lifestyles. Hence, the management of CNCD programmes should enhance their motivation to self-manage their illness and strengthen specific plans for daily life instead of merely providing information about the condition (Jin & Chung, 2009). As a result, group-based self-management programmes for patients with CNCDs have become essential. Group-based self-management programmes are interventions designed for specific groups and with different well-tested delivery strategies, with the focus of improving health outcomes in targeted populations (Grady & Gough, 2014).

Group-based self-management is used in the management of CNCDs, with emphasis on improving self-efficacy and integrating information on the management of usual day-to-day problems associated with chronic non-communicable illnesses (Lorig & Gonzalez, 1992). Elzen, Slaets, Snijders, and Steverink (2007) and Swerissen, Belfrage, Weeks, Jordan, Walker, and Furler (2006) note that the significant impacts of group-based self-management programmes on chronic non-communicable illnesses vary with the personal characteristics of the participants. For instance, a group-based diabetes self-management based on coping skills training strategy for an in-person group has demonstrated lesser glycosylated haemoglobin, improved diabetes, and medical self-efficacy, while lowering the impact of diabetes on quality of life (Grey, Boland, Davidson, & Tamborlane, 2000). This possibly indicates why a review by Carnes et al. (2012) found that group-based self-management interventions for chronic musculoskeletal pain are preferable to individual self-management.

There is also the community-based self-management approach intervention programmes that are an aspect of a population-based approach and address the larger public health problem of CNCDs. Nevertheless, because of too much focus on clinical settings for programme delivery and neglect of the factors beyond patient behaviour that enable or deter effective management, there are many critical gaps in improving disease management by patients (Clark, 2003). Also, this is affected by the limited study designs available, dependence on short-term instead of long-term assessments, and inadequate evaluation of the independent contribution of various programme components (Clark, 2003).

A key component of CNCD management is the monitoring of signs and symptoms as well as other physical activities (Chiauzzi, Rodarte, & DasMahapatra, 2015). Wearable technologies must be introduced in the management of CNCDs to allow for the transition from personal wellness devices to patient-friendly medical tools (Chiauzzi et al., 2015). Some of these measures that patients mostly have to track include weight, diet, symptoms, and even blood pressures. More than two-thirds (69%) of adults in the US were found to track weight, diet, symptoms, and other health routines using some other means in the survey by Pew Internet and American Life (Fox & Duggan, 2013).

There exist various ‘wearable’ devices and sensors for self-tracking health such as activity trackers, smartwatches, patches and tattoos, ingestible and smart implants as a result of the growing technological advancement (Wang, 2014). Patient care has been supported by advances in technology, physiological, and biochemical measurements such as blood oxygen saturation and potential of Hydrogen (pH) (Sarasohn-Kahn, 2013).

Recent progress indicates popularly used consumer-accessible wearable devices to include those that measure movements to estimate activity levels, sleep quality, and calories used (Chiauzzi et al, 2015). Even much better now, most of these wearable devices have improved techniques like goal-setting, social support, social appraisal, and rewards that make their use even more significant (Lyons, Lewis, Mayrsohn, & Rowland, 2014). For instance, results from an internet survey show that one out of ten of Americans 18 years and above report having a modern device to activity such as a Fitbit® or JawboneUP® (Ledger & McCaffrey, 2014). These tools aid in personal health surveillance and social connections with others using the same devices and hence beneficial to their personal care. The use of wearable devices is well established among older (55 years and above) groups who use them to advance overall health (Ledger & McCaffrey, 2014).

More so, the use of devices to track health indicators has been demonstrated to result in positive health outcomes in chronic non-communicable disease population. There is some evidence to support this hypothesis. People with more serious health problems are, for instance, more likely to report benefits as a result of tracking their health (Fox & Duggan, 2013). These devices also assist healthcare providers and patients to obtain insights into the progression and effect of illnesses (Shammas, Zentek, von Haaren, Schlesinger, Hey, & Rashid, 2014). Furthermore, Chiauzzi et al. (2015) posit that the use of health monitoring devices helps patients to manage their conditions in their home environments while achieving reduced hospital stays and decreased readmission rates as a result of the development of complications and emergencies. Also, these monitoring devices serve as effective tools in disease self-management interventions.

Self-management technology, and physiological and biochemical measurement are now used in remote settings and directly by patients with CNCDs (Patel, Park, Bonato, Chan, & Rodgers, 2012). The devices must serve to provide insights, outcomes, and engagement for managing the condition (PricewaterhouseCoopers, 2014). However, good measurement properties of these tools' data are essential for the successful uptake by patients and healthcare providers. The validity and reliability of measurements obtained from wearable devices and lack of standardisation of devices continue to be of concern (California Institute for Telecommunications and Information Technology, 2014).

The use of traditional and alternative medicine in the management of CNCDs by patients is a major public health issue globally. In SSA, the practice is predominant (Hughes, Aboyade, Beauclair, Mbamalu, & Puoane, 2015). It is also higher in rural settings. Rural areas prefer personally prepared herbal concoctions based on the knowledge acquired from their ancestors while urban dwellers prefer buying these herbal medicines from the markets (Kretchy, Owusu-Daaku, & Danquah, 2014). A study by Jane-lovena, Okoronkwo, and Ogbonnaya (2011) in Nigeria found a prevalence rate of 65 percent use of traditional and alternative medicine in the management of CNCDs. In Ghana, a study conducted by Gyasi, Mensah, and Siaw (2015) found a prevalence of 86.1 percent of the use of traditional/alternative medication in the management of CNCDs.

Patients with CNCDs resort to the use of traditional medicine in the management of their conditions because traditional medicines are more affordable and accessible compared to conventional orthodox medicine (Kisangau et al., 2011). Besides, the ubiquitous proliferation of herbal medications at a cheaper price in open markets, pharmacy, and chemical shops across Ghana makes it easier for people with CNCDs to opt for them in the management of their conditions rather than medications prescribed by the orthodox health professionals at the hospitals (Gyasi et al., 2015). Furthermore, the perception of CNCD patients that traditional /alternative medicines are natural, less toxic, and with relatively little effects could be an influencing factor for the high prevalence of usage among them (Kretchy et al., 2014).

Practices by caregivers

The role of caregivers in the management of CNCDs cannot be overestimated. A caregiver is defined as any relative, partner, friend, or neighbour who has a significant relationship with and who provides a broad range of assistance for an individual with a chronic or disabling condition (Reinhard, Levine, & Samis, 2012). In addition to medical care, patients with CNCDs often need many types of assistance, including help with transportation, nursing care, homemaking services, and personal care (National Academies of Sciences, Engineering, and Medicine, 2016). These roles are usually performed by caregivers (Braig et al., 2015). There is a common expectation among families that those living in the same household should be able to help each other more than those living outside the household (Pinquart & Sörensen, 2007). Caregivers are, thus, mostly family members and most patients rely completely on them as well as friends for assistance (Pinquart & Sörensen, 2007). Family members are, for instance, often asked to share in the responsibilities of disease management by providing many forms of support such as driving patients to appointments, helping inject insulin, and providing social and emotional support in coping with the disease (Braig et al., 2015).

Chronic non-communicable diseases sometimes lead to weakness on the part of the patients, leading to difficulty in movement, taking medication, transportation, and general personal hygiene such as bathing, eating, and taking care of wounds (Årestedt, Persson, & Benzeinn, 2015). There is, thus, the need for family and friends to stick around and help with these activities when necessary. According to Trivedi (2017), caregivers also provide a variety of assistance including emotional support, instrumental support (such as picking up medications) and complex medical tasks (such as wound care).

A study conducted by Wei and Omar (2017) on CNCD management in Malaysia revealed that most caregivers played roles in managing hypertension especially with regard to taking medication. Also, the majority of the caregivers mentioned that it was their full responsibility to ensure that medications were taken correctly and that patients ate a balanced meal. Another study also found that caregivers help patients to exercise, take care of the transportation of patients, provide information about patients, and ensure adequate rest and right intake of medication (National Academies of Sciences, Engineering, and Medicine, 2016).

It has been realised from the review that the management of CNCDs is not just a clinical issue but also a population health issue (Sox, 2013). It has been noted that the population health perspective for formulating strategies, interventions, and policies to control CNCDs is very crucial (Institute of Medicine, 2012). This approach has, however, been largely missing in the Ghanaian context and, thus, presents as a gap in the literature.

Coping With Chronic Non-Communicable Diseases

CNCDs affect all aspects of one’s life and hence, there are many stressors that people living with CNCDs have to cope with each day (Eldred, 2011). People living with chronic non-communicable illnesses need the ability to adapt to living with the incessant symptoms associated with their condition, such as pain, fatigue, depression, and anxiety (Eldred, 2011). Though the desired outcome of all illnesses is to gain recovery, for people living with CNCDs, the most realistic outcome is to maintain psychological and physiological well-being (Eldred, 2011). Considering that CNCDs have uncertain illness course and outcomes, the use of effective coping strategies is essential (Cairns & Hotopf, 2005). This is because such strategies present mechanisms by which people react to and manage stress (Cairns & Hotopf, 2005; Carver, Scheier, & Weintraub, 1989).

Chronic non-communicable diseases induce stress on an individual, resulting in significant challenges to successful coping (Heijmans et al., 2004). This tends to inflict severe restrictions on the patient’s ability to self-regulate to manage stress (Heijmans et al., 2004). However, many studies have shown that self-regulatory ability is limited by fatigue and individual characteristics, and can be exhausted (Solberg Nes et al., 2009; Williams & Thayer, 2009). This is because self-regulating capacity can be affected by coping. Also, it has been demonstrated that a person’s subjective experience with stressors produces variance in coping response and that, in the perceptual process of stress, appraisal' changes could result in amplified and lessened tolerance for illness symptoms and stressors virtually (Heijmans et al., 2004; Tak & Rosmalen, 2010; Van Houdenhove, Van Den Eede, & Luyten, 2009; Yunus, 2007). Besides, perceptual alterations associated with chronic stress can exaggerate the sensations of peripheral, irrelevant stimuli, interfering with healthy functioning, as threat perception and hyper-reflection or hypervigilance for threats increase (Deary et al., 2007). The cognitive bias in detecting negative or fear associated stimuli, together with heightened bodily sensitisation, supports arousal and stress activation (Deary et al., 2007).

Coping has, therefore, been described as the way by which an individual adapts to stress, including both the positive and negative responses to stressors. Olson, Johansen, Powers, Pope, and Klein (1993) noted that coping can either be in the form of direct action, such as physically attempting to alter the environment, or cognitive modes, like manipulating thoughts or feelings to resist with a problem.

There are several ways to cope with pain and regulate emotions related to CNCDs (Büssing, Ostermann, Neugebauer, & Heusser, 2010). Most patients with CNCDs try to find strategies to adapt to a long-lasting course of the disease, as they are not able to resolve their relentless pain conditions concerning recovery or repair and distance to negative emotions associated with pain (Machado, Dahdah, & Kebbe, 2018). They seek means to preserve their physical, emotional, and spiritual health during the long-lasting courses of their illnesses. Büssing et al. (2010) and Gebreslassie (2018) posit that coping with chronic pain by patients is an unending process involving appraisals of stress, cognitive, behavioural, as well as emotional coping responses, and later reappraisals of stress.

Coping has also been recognised as an adaptation strategy for patients with CNCDs. One of the most often used concepts on adaptation strategies of patients with chronic pain diseases distinguishes active and passive coping (Ramirez-Maestre, Esteve, & Lopez, 2008). Active coping focuses on problem-solving, such as gathering information and refocusing on the problem, or controlling of emotion by focusing attention on the emotional response aroused by the stressor (Büssing et al., 2010). This is linked with less pain, less depression, less functional impairment, and higher general self-efficacy (Du et al., 2018; Litt & Tennen, 2015). Passive coping emphasises avoidance and escaping of pain, and is associated with increased depression, more pain and flare-up activity, more functional impairment, and lesser general self-efficacy (Litt & Tennen, 2015). Nonetheless, for chronic pain, one has to know the adaptive coping strategies that apply to the patients. As a result, there are several coping strategies used (Büssing et al., 2010).

In a study by Ersek, Turner, and Kemp (2006), the authors posited that the most often used coping strategies among older adults with chronic pain were task persistence (maintaining activity despite fluctuations of pain intensity), pacing (activity avoidance), and coping self-statements (a form of conditioning to put a stop to thoughts that lead to anxiety and to replace them with rational thoughts). Strategies less frequently used, according to Ersek et al., were asking for assistance and relaxation. A study conducted by Ahmad and Al Nazly (2015) among 131 Jordanian men and women on stressors and coping strategies with hemodialysis among patients with end-stage chronic kidney disease, however, revealed that the major coping strategies were prayers and reading the Holy Quran. Religious faith, thus, becomes an important driving force of coping among people living with CNCDs (Büssing, Franczak, & Surzykiewicz, 2016).

The underlying concept of religious coping concerning CNCDs has been found to revolve around trust in a divine and medical help, search for information and alternative help, the conscious way of living, positive attitudes, and reappraisals (Büssing et al., 2010). Trust in divine help focuses on non-organised inherent religiosity as an external supreme coping resource such as trusting in a higher power, living by religious convictions, and praying to regain health, among others (Büssing et al., 2016). Trust in medical help addresses patients' reliance on an external medical source of health control in terms of medications, medical advice, and clinicians (Büssing et al., 2010).

Prayer is considered by many Christians as a principal medium of communication between them and God (Okyerefo, 2011). This practice has been noted as prevalent among people with CNCDs as a way of dealing with the depression and anxiety commonly associated with the conditions (Wachholtz & Sambamthoori, 2013). Prayer, coupled with faith across a variety of religious belief systems, serves as an effective coping strategy for people living with CNCDs in dealing with pain and emotional grief (Okyerefo, 2011; Schnittker, 2001). Patients with CNCDs find spirituality (prayer) as a powerful source of peace, comfort, and tenacity (Kelly, 2004). The patients with CNCDs perceive prayer as a complementary medication from God that can help in the management of their conditions (Okyerefo & Fiaveh, 2017).

Faith in prayer, thus, prepares patients with CNCDs psychologically and physiologically to heal faster (Kabat-Zinn & Hanh, 2009).

The search for information and alternative help includes all external sources providing additional information or alternative help of information advice or treatment (Büssing et al., 2010). The conscious way of living is seen as a concept that focuses on cognitive and behavioural strategies in terms of internal powers and virtues such as healthy life choices including diet and physical fitness. Positive attitudes, according to Büssing et al. (2016), describe the inner cognitive and behavioural strategies such as positive thinking, avoiding thinking of the illness, and having a renewed thought of situations. The reappraisal conceptualises illness as a chance concept which deals with cognitive processes of life reflection. It involves adopting a reappraisal attitude such as reflecting on life essentials and an appreciation of life because of illness (Büssing et al., 2010).

In the review, the major gaps identified have to do with the paucity of literature on coping with CNCDs generally in the developing world including Ghana. Besides, while a few studies have been conducted on individual CNCDs, there is a paucity of studies focusing on coping with several CNCDs combined in a single study. The present study, therefore, holistically explored coping strategies adopted by various patients with different CNCDs and the sources of those strategies.

Challenges in the Management of Chronic Non-Communicable Diseases

In the 20th century, an epidemiological transition was observed in Europe, during which epidemic infectious diseases were offset by a gradual increase in CNCDs, mostly linked to significant changes in lifestyle (Omran, 1971). The gradual and sustained increase in the prevalence of CNCDs is associated with challenges in their management.

The accumulated exposure to CNCD risk factors over a person’s lifetime results in lots of CNCDs (Janssen & Kunst, 2005). Unfortunately, orthodox medicine may only be able to manage them but not cure them. Many studies have identified factors associated with healthy ageing (Depp, Glatt, & Jeste, 2007). Such studies have also revealed that the onset of these conditions can be delayed as populations age, due to a combined effect of longer survival and falling birth rates. Hence, the proportion of the population living with these conditions will eventually rise.

The greatest challenge is posed by the phenomenon of co-morbidity, the coexistence of multiple CNCDs (Lefèvre et al., 2014). It is, therefore, not unusual for an 80-year-old person to live with five or six CNCDs which are managed by numerous potentially interacting medications whose metabolism is affected by an ageing body. This is not a problem that lends itself to simple responses. Instead, CNCDs require a multifaceted response, over a prolonged period, coordinating contributions from a wide range of health professionals, essential medications and – where appropriate – monitoring equipment, all of which are well integrated within a system that supports patient empowerment.

Many health systems are, however, still largely built around an acute, episodic model of care, creating a challenge for health policy-makers as to how to put in place a strategy that best addresses the needs of individuals with complex CNCDs (Nolte, Knai, & McKee, 2008). There is a need to find specific solutions considering that health systems differ extensively. These may include differences in professional roles, coordination mechanisms, and care settings. Nevertheless, there is a need to learn from other performing systems (Nolte et al., 2008).

Due to a barrage of challenges encountered by health professionals, management of chronic diseases is sometimes a daunting task. Many predominant CNCDs share similar challenges associated with their management such as managing symptoms and disability; monitoring physical indicators; managing complex medication regimens; patients maintaining proper levels of diet and exercise; adjusting to the psychological and social demands, including challenges with lifestyle adjustments; as well as ensuring effective communications with healthcare providers (Nolte et al., 2008).

In a content analysis by Yen et al. (2011), the authors identified two main themes in health providers' perspectives concerning the challenges they face, namely, patient compliance and service fragmentation. They indicated that patient compliance is suggestive of patient adherence to management activities and service fragmentation to mean the independent operation of components of the health system with little collaboration or similarity in goals. Yen et al. further indicated that, specifically, four concepts were associated with compliance. These concepts include financial challenges, inappropriate help-seeking, poor health literacy, and comorbidity. Also, linked to the concept of fragmentation were inadequate access to care, lack of continuity, and non-adaptive healthcare culture. They observed that health professional attitudes and behaviour was one concept which was linked to the two: compliance and fragmentation.

Patients face a myriad of challenges in the management of their CNCDs. These challenges are from personal, financial, and social domains

(Gomo Health, 2017). One major personal challenge patients face during the management of their illness is that they are usually poorly informed about their conditions as well as the roles and responsibilities of their caregivers, and this results in not only the poor quality of care but also poor adherence to treatment and management advice given by health professionals (Brunner-La Rocca, 2016).

Besides, some patients, due to lack of capacity as a result of passive involvement by health professionals, find it difficult in making decisions and self-managing their condition. They, thus, become over-reliant on caregivers (Clarke, Bennett, & Korotchenko, 2014). Due to long term care associated with CNCDs, majority of patients usually face financial challenges during management. Some patients usually fail to undergo laboratory investigations or buy the prescribed medication and rather resort to buying non-standard medications (Foo, Sundram, & Legido-Quigley, 2020).

The challenges occur due to weaknesses in health financing schemes which do not cover the full treatment of CNCDs (Ong, Tyagi, Lim, Chia, & Legido-Quigley, 2018). Regular accessibility to care for timely care management is another challenge patients with CNCDs face. This barrier could be because health facilities are far from the residence of the patients. As such, getting funds for transportation sometimes becomes challenging to the patients (Foo et al., 2020).

Gaps identified in the review included the dearth of literature on institutional-based challenges which confront the management of CNCDs. Overall health systems-based challenges confronting the management of CNCDs were also not exhaustively covered by the available literature. Finally, it was also realised that studies focusing on the challenges associated with the management of CNCDs have not generally been done in Ghana and other sub-Saharan African countries. The present study, therefore, focused extensively on exploring the challenges inhibiting the effective management of CNCDs.

Policies on Chronic Non-communicable Diseases

There have been various policy interventions geared towards dealing with the increasing burden of CNCDs at the global level. For instance, the WHO's Global Action Plan (GAP) targets ensuring developing countries reduce by 25% the risk of premature mortality from CNCDs by the year 2025 (WHO, 2013). The Global Action Plan provides international partners in conjunction with the member states with a road map of policy options which, when implemented, will contribute to progress toward attaining the global CNCD targets by 2025 (WHO, 2013). The SDG target 3.4 (a one-third reduction in premature deaths from CNCDs by the year 2030) was another policy intervention at the global level geared towards addressing the CNCDs menace (WHO, 2018a).

In response to the GAP and SDG targets, various Asian countries including Sri Lanka, Indonesia, Thailand, Vietnam, Cambodia, and the Philippines implemented interventions targeted at reducing the prevalence of CNCDs (Tuangratananon et al., 2019). These included preventive policies regarding increasing taxes and prices on tobacco products, eradicating exposure to second-hand tobacco smoke at workplaces, public places, and transport, as well as regulating standardised packaging and graphic health warnings on all tobacco packages. The countries also enacted and enforced inclusive bans on tobacco advertisement and sponsorship (Tuangratananon et al., 2019).

In the WHO Africa region, efforts at responding effectively to increasing burden of CNCDs led to the establishment of the CNCD-Africa consortium in July 2009 (Amuyunzu-Nyamongo, Owuor, & Blanchard, 2013). The consortium focuses on issues relating to CNCDs prevention and control through addressing the social determinants of health at individual and societal levels through policy advocacy. The consortium also focuses on restructuring tactics that overcome major barriers such as limited knowledge regarding risk factors and symptoms of CNCDs in communities, inadequate access to services, inadequate awareness among the public and policymakers on the burden of CNCDs, and gaps in CNCD policy implementation (Amuyunzu-Nyamongo et al., 2013).

To achieve the global target and more specifically CNCDs-Africa consortium, countries in SSA have formulated and implemented various CNCD policies. In South Africa, the National Department of Health (DoH) developed a strategic plan aimed at the prevention and control of non-communicable diseases (Solomons, Kruger, & Pouane, 2019). This initiative has the objective of promoting health-related physical activities by creating awareness on the importance of the regular physical activity. The strategic plan also aims at promoting inter-sectoral collaboration to increase opportunities to be physically active at workplaces, schools, and communities and implement physical activity programmes and related interventions to promote physical activity (Ndinda, Ndhlovu, Juma, Asiki, & Kyobutungi, 2018). The strategy also focused on promoting healthy eating by encouraging people to consume less salt, less fast and fried foods, snacks, low-fat dairy products, and more of whole grains, fruit, vegetables, and legumes, and other traditional foods and dishes (South African Department of Health, 2013).

In Rwanda, a health policy instituted in 2015 focuses on creating health-promoting environments in the country (Ministry of Health [MoH], Rwanda, 2015). The policy promotes community actions to reduce exposure to modifiable CNCD risk factors and to strengthen and mainstream NCDs prevention, diagnosis, care and treatment, and rehabilitation programs within the national health systems (Asiimwe-Kateera et al., 2015; MoH, Rwanda, 2015; Muhimpundu et al., 2019).

In August 2012, Ghana implemented a National Policy per the WHO’s guidelines for the prevention and control of CNCDs. The policy has objectives of reducing the incidence and prevalence of CNCDs in the country, reducing the exposure of people to CNCD risk, reducing morbidity associated with CNCDs, and improving the overall quality of life of persons with CNCDs (Ministry of Health [MoH], Ghana, 2012). The policy focuses on strategies such as primary prevention and clinical care including early detection, provision of treatment services, health system strengthening involving the training of health workers, and the development of human resource capacity. While the policy also stipulates the provision of essential drugs and supplies and integration of NCD plans into wider health systems and ensuring financial mechanisms for improved allocation and efficient use of funds and surveillance of NCDs and their risk factors (MoH, Ghana, 2012), it focuses extensively on preventive measures such as alcohol and tobacco control, promotion of healthy diet, and physical activity (MoH, 2012). There is, however, no tax regulation on tobacco and alcohol control (Bosu, 2012; de Graft Aikins et al., 2012).

A major gap identified in the literature on CNCD policies is the scant attention given to the management of CNCDs. The policies largely focus on preventive practices including physical activity, proper nutrition, and health education. Despite the high level of emphasis on these preventive measures, CNCDs are still on the ascendency, which means specific policies for the management of the CNCDs are also needed. In Ghana, for instance, there is no dedicated policy which focuses on the management of CNCDs.

CHAPTER THREE

THEORETICAL AND CONCEPTUAL LITERATURE REVIEW

Introduction

This chapter is divided into theoretical and conceptual reviews. Theories which have been reviewed are the health belief model (HBM), theory of reasoned action (TRA), theory of planned behaviour (TPB), health service utilisation model, epidemiological transition theory, and chronic care model (CCM). The CCM and HBM are, however, adopted as the conceptual framework to underpin the study.

Theoretical Review

Health belief model

The health belief model (HBM) was propounded by Irwin Murray Rosenstock (Rosenstock, 1966). The model has four traditional constructs: a) perceived seriousness, b) perceived susceptibility, c) perceived benefits, and d) perceived barriers. Perceived seriousness outlines an individual’s belief regarding the seriousness of a health problem and may come from beliefs the person has about the difficulties a disease would create or the effects it would have on that person’s life in general (Cottrell, Girvan, & McKenzie, 2006).

Perceived susceptibility refers to the perceived personal risk of developing a health problem or disease (Chen, Fox, Contrell, Stockdale, & Kagawa-Singer, 2007; Rosenstock, 1966). A combination of perceived seriousness and perceived susceptibility results in perceived threats. The construct of perceived benefits, according to the model, deals with a person’s view of the importance of a new behaviour in reducing the risk of developing a disease or health condition (Carpenter, 2010). Perceived barriers involve an individual’s own evaluations of the obstacles in that individual’s way in adopting a new behaviour (Cottrell & McKenzie, 2005).

The four traditional constructs comprising perceived susceptibility, benefits, seriousness, and barriers are modified (influenced) by other factors which are termed as modifying variables (Rosenstock, 1974). Modifying variables are mainly the demographic and socio-psychological characteristics of the individual, which are very essential in the adoption of a new behaviour (Chen et al., 2007). They include age, sex, culture, level of education, personality, social class, past experience, peer pressure, skills, and motivation (Chen et al., 2007; Cottrell & McKenzie, 2005; Rosenstock, 1974).

Cues to action refer to people, events, or things that cause or move individuals to change their behaviour (Hayden, Cottrell, & Bernhardt, 2008). These may include illness of a family member, reminder postcards, mass media campaigns/reports, and advice from others (Glanz & Bishop, 2010). Self-efficacy was added to the health belief model in 1988 (Rosenstock, Strecher, & Becker, 1988). It concerns the belief in one’s own ability to do something (Hayden et al., 2008).

The health belief model has been criticised for several reasons. First, very little work has been done on the quantification of the relations among the variables constituting the model. Glanz and Bishop (2010), for instance, noted that there has been no attempt to delineate the precise, numerical relations among perceived susceptibility, severity, benefits, barriers, and self-efficacy. Also, the model focuses on perceptual factors such as beliefs and fails to account for variances in behaviour that might be due to such salient factors as personal habits and socio-cultural norms (Cottrell et al., 2006). Thus, the theory focuses on attitudes and beliefs rather than actual behaviour and reality (Hay et al., 2003).

Despite the criticisms of the health belief model, it has been considered relevant to the present study in understanding patients' perceptions of their conditions and the actions they would take regarding the management of the conditions based on those perceptions. For instance, the perceptions of individuals regarding the seriousness of their conditions and the risk of dying may serve as threats to their health and, thus, propel them to take action to ameliorate their negative health implication (Paek & Hove, 2017).

People living with CNCDs are also likely to properly manage and cope with their conditions if the perceived benefits outweigh the perceived barriers involved in engaging in proper management and coping with the conditions (Wilper et al., 2009). Modifying factors such as age, sex, religion, level of education, personality, social class, experience with service utilisation, peer pressure, skills, and motivation may then influence the decisions of the individuals to properly manage their CNCDs (Duku, Fenenga, Alhassan, & Nketiah-Amponsah, 2013). Cues to action including the death of a family member who is also living with the same chronic non-communicable condition or a similar one, reminder postcards, mass media campaigns/reports, and advice from others may influence individuals to properly manage their condition (Tarkang & Zotor, 2015). Figure 1 presents the HBM.

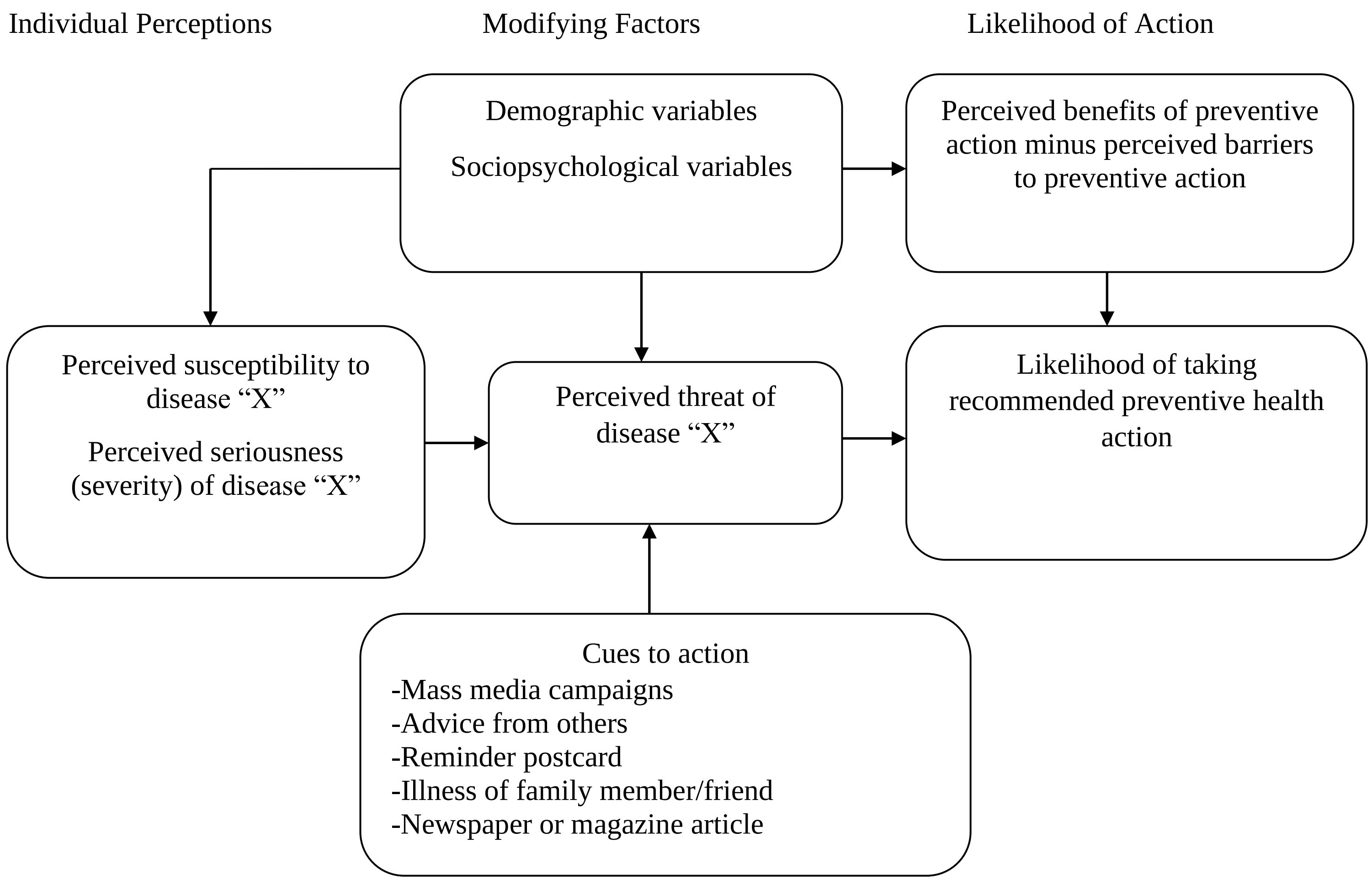


Figure 1: **Health Belief Model**

Source: Cottrell, Girvan, and McKenzie (2006)

Theory of reasoned action

The theory of reasoned action (TRA) was propounded by Martin Fishbein and Icek Ajzen (1975, 1980). The theory was derived from a previous study which started as the theory of attitude, leading to the study of attitude and behaviour. "The theory of reasoned action was developed mainly out of frustration with traditional attitude-behaviour research, much of which found weak correlations between attitude measures and performance of volitional behaviours" (Hale, Householder, & Greene, 2003, p. 259).

The major constructs of the theory are attitudes, subjective norms, and behavioural intentions (Fishbein & Ajzen, 1980). Attitudes are the sum of beliefs that people have about a specific behaviour, weighted by an evaluation of these beliefs (Miller, 2005). Attitude toward a behaviour is also defined as an individual's positive or negative feelings about performing a behaviour (Fishbein & Ajzen, 1980). It is determined through an assessment of one's beliefs regarding the consequences arising from a behaviour and an evaluation of the desirability of these consequences (Hale et al., 2003).

Subjective norms focus on the influence of people in an individual's social environment on that individual's behavioural intentions (Fishbein & Ajzen, 1980). Thus, the beliefs of people, weighted by the importance one attributes to each of their opinions, will influence his/her behavioural intentions. Behavioural intention serves both as a function of attitude towards a behaviour and subjective norms towards that behaviour, both of which have been found to predict actual behaviour (Miller, 2005).

The theory of reasoned action has been criticised for several reasons. The theory is limited in its significant risk of confounding between attitudes and norms, since attitudes can often be reframed as norms and vice versa (Hale et al., 2003). Besides, the assumption of the theory of reasoned action that when someone forms an intention to act, they will be free to act without limitation is flawed (Hale et al., 2003). In practice, however, constraints such as limited time, ability, organizational or environmental limits, and unconscious habits do limit the individual's freedom to act. Due to the numerous challenges of the theory of reasoned actioned, it was subsequently revised and extended by Ajzen (1988) into the theory of planned behaviour.

Despite its criticisms, the theory of reasoned action is considered relevant to this study, as it awakens the realisation that the way the people with CNCDs perceive proper management and coping with their conditions ultimately influences their intentions and subsequently their behaviour towards actual management (Mulupi, Kirigia, & Chuma, 2013). Because people's views of their conditions influence subjective norms towards their management, educating them on the need to properly take care of their health as a way of changing beliefs about the services may be a way to positively influence their subjective norms regarding the management of the conditions (Atinga, Abekah-Nkrumah, & Domfeh, 2011).

With a change in beliefs and subjective norms of the individuals living with diseases in Ghana regarding their management of the conditions, their intentions towards the management will also change (Mulupi et al., 2013). A positive change of their intentions will then result in a change in their behaviour towards the management of the conditions (Miller, 2005). Figure 2 presents the theory of reasoned action.

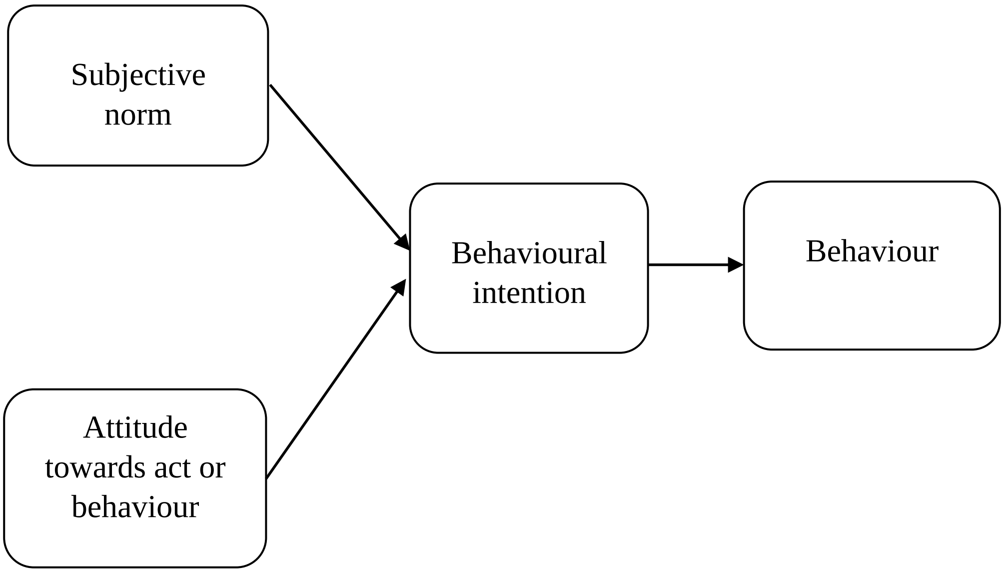


Figure 2: **Theory of reasoned action**

Source: Fishbein and Ajzen (1975)

Theory of planned behaviour

The theory of planned behaviour (TPB) is a modified and extended version of the TRA, which was developed in 1980 (Cameron, 2010; Fishbein & Ajzen, 1980). Developed by Ajzen (1988), this extension of TRA involves the addition of one major predictor, perceived behavioural control, to the original theory (Southey, 2011). "This addition was made to account for times when people have the intention of carrying out a behaviour, but the actual behaviour is thwarted because they lack confidence or control over behaviour" (Miller, 2005, p. 127).

The TPB predicts deliberate behaviour because it posits that behaviour can be both deliberative and planned (Baker & White, 2010). The tenets of the theory are attitudes which comprise behavioural beliefs and outcome evaluations, subjective norms which consist of normative beliefs and motivation to comply, and perceived behavioural control which is based on control beliefs and influence of control beliefs as well as behavioural intentions, all of which result in a particular behaviour (Baker & White, 2010).

The TPB is limited in several ways. Personality/demographic factors, for instance, are not taken into consideration in explaining factors which influence behaviour (Cameron, 2010). Ambiguity regarding the measure of perceived behavioural control also creates measurement problems. Not only are unconscious motives not considered in the theory, but the assumption that human beings are rational and make systematic decisions based on information available to them is also flawed, as this is not always the case (Cameron, 2010).

Despite its criticisms, the TPB was considered relevant to the present study due to its strengths which lie in its ability to measure how human actions are guided. It also predicts the occurrence of a particular behaviour, provided that behaviour is intentional (Cameron, 2010). It is, thus, relevant to this study in explaining how experiences of the individuals with CNCDs are associated with their utilisation of health services which culminate into the CNCD prevalence among them over the years. Thus, the TPB is relevant in explaining how behavioural beliefs and outcome evaluations, normative beliefs and motivation to comply, as well as control beliefs and influence of control beliefs influence behavioural intentions regarding CNCD management and coping, which then consequently result in the decision of people to either appropriately or inappropriately manage their conditions. Figure 3 presents the TPB.

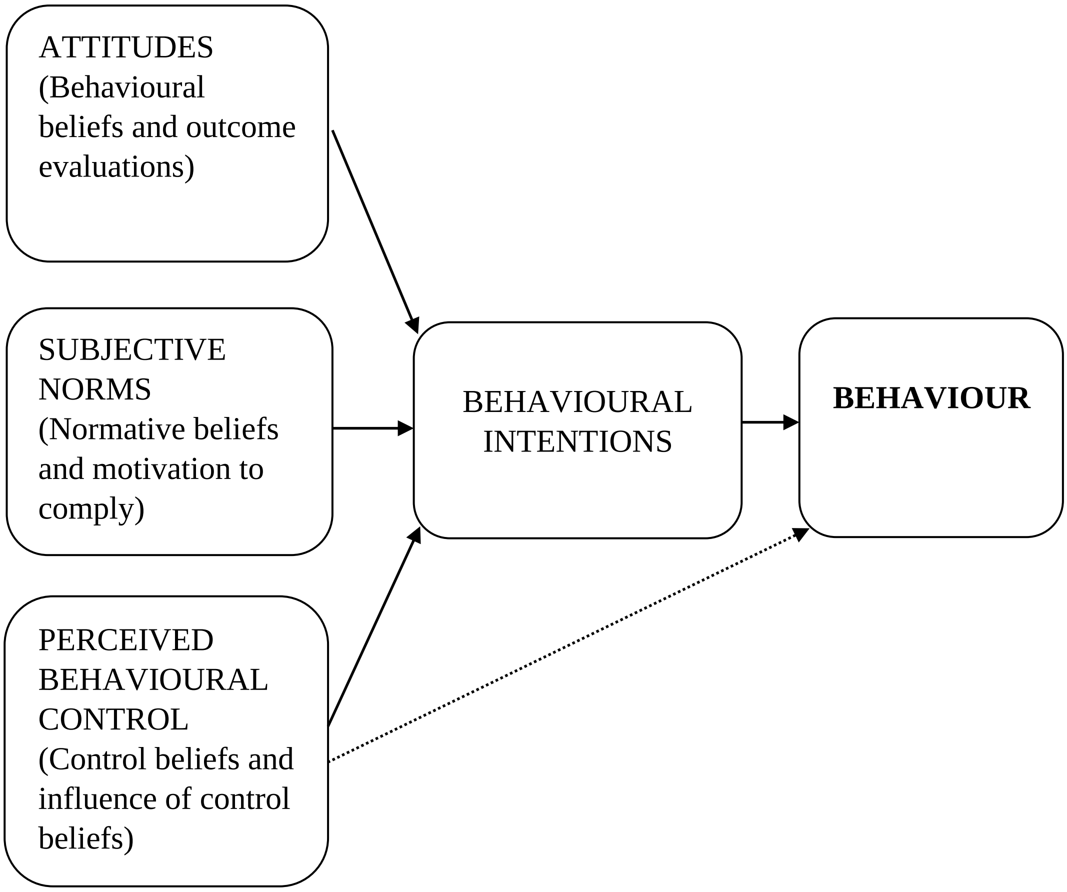


Figure 3: **Theory of planned behaviour**

Source: Ajzen (1991)

Health service utilisation model

The health service utilisation model was originally developed by US health services researcher and medical sociologist, Ronald M. Andersen, in 1968 as the outcome of a survey for the Center for Health Administration Studies and the National Opinion Research on families' use of health services (Aday, Andersen, & Fleming, 1980; Andersen, 1968, 2008). It was, however, subsequently reviewed by Andersen and Newman (1973), Andersen (1995), Gelberg, Andersen, and Leake (2000), and Andersen and Davidson (2001).

The model is a multilevel theory which incorporates both contextual and individual-level predictors of health services utilisation. In doing so, it "… divides the major components of contextual characteristics in the same way as individual characteristics have traditionally been divided—those that predispose …, enable …, or suggest need for individual use of health services" (Andersen, 2008, p. 652). The main tenets of the theory are, thus, pre-disposing, need, and enabling factors. The model describes the roles of these factors in influencing the utilisation of health services (Andersen, 2008).

Predisposing factors, according to the theory, are basically the demographic characteristics of individuals and include sex and age as "biological imperatives" (Andersen & Davidson, 2001, p.7); social factors such as religion, occupation, education, ethnicity, attitude towards health, and social relations (such as family status); mental factors in terms of health beliefs (e.g., values, attitudes, and knowledge on health and health-related services) (Andersen, 2008); and contextual factors including the social and demographic composition of communities, organisational and collective values, political perspectives, and cultural norms which predispose individuals to the use of health services.

Enabling factors are described by the model as being external to the individual but important in influencing the individual's decisions concerning the use of health services. Organisational and financing factors are considered to serve as conditions enabling health service utilisation (Andersen & Davidson, 2001; Babitsch, Gohl, & von Lengerke, 2012). These organisational and financing factors occur at both individual and contextual levels. Individual financing factors comprise the wealth and income at the disposal of an individual, which enables the individual to pay for the utilisation of health services and the effective price of healthcare which is determined by cost-sharing requirements and the individual's health insurance status (Andersen, 2008). Individual organisational factors have to do with access to a regular source of care and the nature of that source. They also include travel time to the health facility, the means of transportation, and waiting time for healthcare (Andersen & Davidson, 2001). These can either serve as motivators or barriers to the utilisation of health services.

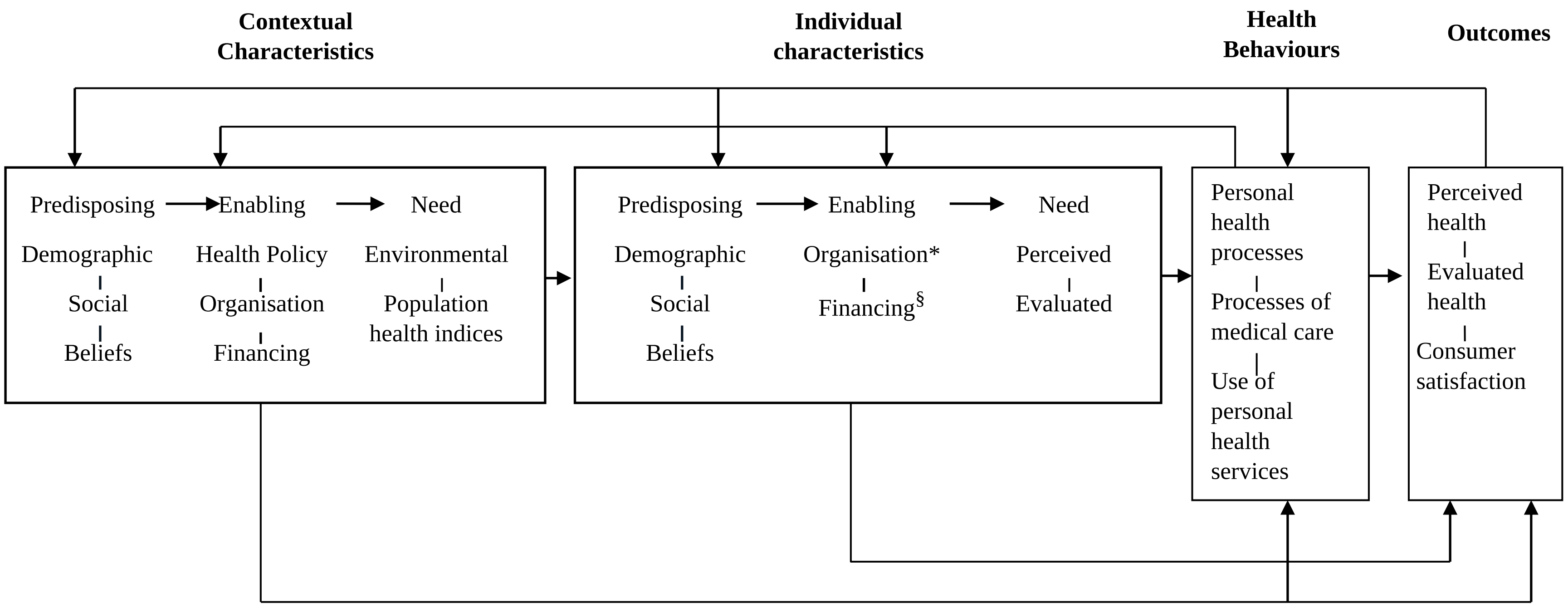
The model posits that, at the contextual level, financing encompasses the resources available within the milieu for health services, such as affluence, per capita community income, the level of health insurance coverage, methods of compensating providers, the relative price of goods and services, and healthcare expenditures (Babitsch et al., 2012). Organisation at the contextual level denotes the amount, locations, varieties, structures, and distribution of health personnel and facilities. It also involves office hours, hospital and physician density, quality management oversight, provider mix, and education and outreach programmes. Health policies also constitute organisational contextual enabling factors (Andersen & Davidson, 2001).

The need factors, according to the model, refer to perceptions of the seriousness of a disease or health condition (Andersen & Newman, 1973), and just as the enabling factors, exist at both the individual and contextual levels. At the individual level, the model distinguishes between the perceived need for health services (how people perceive and experience their health status [self-rated health], functional state, and illness symptoms) and evaluated need (objective measurements of patients' health status and professional assessments and need for medical care) (Andersen & Davidson, 2001; Babitsch et al., 2012). At the contextual level, individuals make a differentiation between population health indices and environmental need characteristics (Babitsch et al., 2012). Environmental need, according to the model, point to the health-related circumstances of the environment (e.g. occupational and traffic and crime-related injury and death rates). Population health indices, on the other hand, are the overall measurements of community health, including epidemiological indicators of disability, morbidity, and mortality (Andersen & Newman, 1973; Babitsch et al., 2012).

The model has been criticised for the fact that it does not pay attention to cultural dimensions and social interactions (Wilson et al., 2005). Also, the model has been criticised for over-emphasising need factors which influence health behaviour instead of social structure and health beliefs, even though Andersen (2008) posited that need, in itself, is a social construct.

Despite these criticisms, the healthcare utilisation model is considered relevant to the current study because of its strength in spelling out the various dynamics that may be involved in the health service utilisation of persons living with CNCDs as a way of managing their conditions (Harris, McLean, & Sheffield, 2009). Thus, with regard to the present study, the health services utilisation model is relevant in explaining how the background characteristics could influence self-management and coping strategies adopted by people living with CNCDs to manage their conditions.

Patients who realise the need to seek appropriate care for their CNCDs, for instance, are more likely to go for regular check-ups. Having the finances to pay for medications and transportation fare is also an enabling factor which would make individuals to seek care for their CNCDs more than those without such funds. The availability of a health policy which efficiently caters for the health needs and management of CNCDs is also an important enabling factor for patients to seek prompt care. This is because there is a guarantee that challenges which emanate in the management processes of CNCDs would be addressed by a proactive policy. Figure 4 is the health service utilisation model.



Assigning Health Plan Characteristics to the Behavioural Model

Organisational characteristics*
-Type of provider network
-Gatekeeper requirements
-Utilisation management practices
-Information technology systems
-Authorisation policies
-Quality assurance activities

Financial characteristics§
-Copayment structure
-Deductive structure
-Coinsurance rate
-Extent of benefit coverage

Figure 4: **Health Service Utilisation Model**

Source: Andersen and Davidson (2001)

Epidemiological transition theory

The epidemiological transition theory was propounded by Omran (1971). The theory describes the shifting pattern of mortality from the predominantly communicable diseases to the emerging CNCDs. Epidemiological transition, according to Omran, refers to the phase of human development evidenced by an abrupt and significant upsurge in the rate of population growth influenced by innovations in medicine and public health, as well as improved food security. This is then followed by a re-levelling of the population growth as a result of subsequent drops in the rates of fertility (Porta, 2014). This accounts for the replacement of infectious diseases by CNCDs over time due to increased life span as a result of improved healthcare and disease prevention (Porta, 2014).

Omran (1971) postulated three stages of epidemiological transition. These were the age of pestilence and famine, the age of receding pandemics, and the age of degenerative and man-made diseases. The age of receding pandemics in Omran's theory occurs when human population sustains low-growth, cyclic, and mostly linear, up-and-down patterns associated with famine, wars, epidemic outbreaks, as well as localised eras of 'prosperity.' In the early pre-agricultural history, infant mortality rates were high and average life expectancy was low (Omran, 1971).

The second phase encompasses improved nutrition as a result of stability in food production along with the development of healthcare systems and advances in medicine (Omran, 1971). Mortality in North America and Western Europe was halved in the 19th century as a result of closed sewage systems and clean water, which were made possible by public utility providers, with a specific benefit for children of both sexes and to females in the adolescent and reproductive age groups, possibly due to the vulnerability of these groups to deficiency diseases and infections. A general decline in malnourishment made it possible for populaces to better repel contagious diseases.

Treatment breakthroughs of importance included the initiation of vaccination during the early nineteenth century and the discovery of penicillin in the mid-20th century, which led respectively to a widespread and dramatic decline in death rates from previously serious diseases such as smallpox and sepsis (Omran, 1971). Population growth rates surged in the 1950s, 1960s, and 1970s to 1.8 percent per year and higher, with the world gaining 2 billion people between 1950 and the 1980s. A decline in mortality without a corresponding decline in fertility leads to a population pyramid assuming the shape of a bullet or a barrel, as young and middle-age groups comprise equivalent percentages of the population.

Omran's third phase occurs when birth rates drastically decline from highly positive replacement rates to stable replacement numbers (Omran, 1971). In several European nations, replacement rates have even become negative. This transition generally represents the net effect of individual choices on family size and the ability to implement those choices. Life expectancy becomes very high at this stage but with implications which include the increased burden of CNCDs.

Thirty years later, Omran proposed two more stages for the western model: a) the 'age of declining cardiovascular mortality, ageing, lifestyles modification, emerging and resurgent diseases' and b) the 'age of aspired quality of life, with paradoxical longevity and persistent inequities' (Omran, 1998). While the epidemiological transition progressed slowly over a century in the developed world, it appears to be accelerating faster in developing countries (Omran, 1998). Improvements in the standard of living, levels of education, nutrition, public health measures, and breakthroughs in medical science are amongst factors contributing to the health transition in developing countries (Caldwell, 1998).

The health and epidemiological transitions in 'non-western societies' occur with different acceleration, timing, and magnitude of changes; thus, it can be differentiated into rapid, intermediate, and slow transition models (Ng, 2006). Non-western societies have experienced prolonged pestilence and famine (Stage 1) as well as the stage of receding epidemics (Stage 2). Omran (1998) later proposed a different third stage for non-western countries, 'the age of triple health burden', i.e. the unfinished old set of health problems, a rising new set of health problems, and the ill-prepared health systems to cope with the prevention and care of CNCDs.

The theory has been criticised on its applicability in the "developing-world" where valid and reliable morbidity and mortality data over a long period is questionable (Philips, 1991). The validity of Omran's model has also been accused of failing to recognise and analyse the importance of political processes and health policy in understanding the epidemiological profile. Moreover, the categorisation of economic development into different stages has gained major criticism, as economic development is naturally a continuous and dynamic process (Carolina & Gustavo, 2003). Carolina and Gustavo (2003) pointed out that the use of epidemiological profiles in understanding complex disease causation and predicting disease occurrence in the future should be complemented by scientific, epistemological, historical, economic, and social knowledge.

Despite these criticisms, the epidemiological transition model has been considered relevant to the current study, and it relates to the burden of CNCDs in Ghana over time because the country is still in epidemiological transition. Coping strategies are influenced by the socio-demographic characteristics and also in turn influence the management of CNCDs as well as challenges faced by both patients and health professionals in managing the CNCDs.

The theory enables the study to ascertain both contextual and individual predictors of the management of CNCDs. The main tenets of the theory constitute important pillars on which the study is conceptually grounded. Sex, age, religion, occupation, education, ethnicity, attitude towards health, social relations (such as family status), health beliefs such as values and knowledge on health and health-related services, the social and demographic composition of communities, organisational and collective values, political perspectives, and cultural norms are significant influences on the individual perceptions and behavioural intentions of people which then influence their management and coping strategies adopted in managing the diseases. For instance, those who are younger might not have developed severe forms of the CNCDs and as such, may have negative perceptions towards their susceptibility to further complication and severity of the conditions they are living with. These may then result in barriers which may also have serious negative implications for their management of the diseases. The opposite may, however, occur among those who are older and have probably developed severe forms of the various CNCDs and may, therefore, develop positive perceptions which in turn will motivate them to properly manage their conditions.

Concerning religion as a factor, there are some religious groups in Ghana which do not permit their followers to utilise orthodox health services in managing their disease conditions. This, therefore, has implications for their individual perceptions towards the use of such services among them. For some, they may prefer spiritual help (faith healing) for their conditions to orthodox care. There have been instances where some Christian pastors preached against mastectomy and chemotherapy operations and urged their congregants who happened to be cancer patients to put their trust in the healing power of Jesus Christ and forget about orthodox treatment (Oduah, 2015).

Based on occupation coupled with knowledge of health and health-related services, as well as level of education, some individuals living with CNCDs may properly or improperly manage their conditions. These factors (knowledge of health and health-related services, occupation, and level of education) also influence the level of challenges that health professionals face in efforts to help manage the conditions. A highly educated client may, for instance, be able to acquire much knowledge on the management of his/her condition and as such, the professional may not have to do so much convincing and struggling to ensure that they adhere to medication regimen, for instance. This is because research has shown that individuals with high levels of education, good occupations (especially those related to health) with high incomes, and good knowledge of health have higher propensities of properly managing their health conditions than those without these characteristics (Chakraborty, Islam, Chowdhury, Bari, & Akhter, 2003; Jehu-Appiah, Aryeetey, Spaan, De Hoop, Agyepong, & Baltussen, 2011; Mensah, Oppong, & Schmidt, 2010).

Individual and organisational factors which have to do with access to a regular source of care and the nature of that source may serve as sources of coping mechanisms for the individuals living with CNCDs through the vicissitudes involved in dealing with the diseases in their daily lives. Religion and support from family and friends encourage them to cope effectively with the conditions. Health insurance status also constitutes a strong modifying factor for managing and coping with their CNCDs. Individuals subscribed to health insurance are more likely to have a higher possibility of having positive behavioural intentions towards utilising health services (for CNCDs management) than those not subscribed to it. Travel time to a health facility, the means of transportation, and waiting time may serve as barriers influencing the level of health service use in the management of the CNCDs. Thaddeus and Maine (1994), for instance, acknowledged that, when the travel time to a health facility is short, the means of transportation is good, and waiting time for healthcare is short, delays that result in the process of utilising care are reduced, and this increases eventual client utilisation of health services for proper management of disease conditions.

Chronic care model

The chronic care model (CCM) was developed by the MacColl Institute for Healthcare Innovation at Group Health Cooperative in 1992

(Bodenheimer, Wagner, & Grumbach, 2002; Glasgow, Orleans, Wagner, Curry, & Solberg, 2001). The CCM is an evidence-based multifaceted framework aimed at enhancing chronic illness care delivery by providing an organised approach to practice transformation (Wagner, 1998). It has the strength of serving as a perfect tool for both individual and population-level improvement in chronic care (Fiandt, 2006). To support high quality, patient-centred chronic disease management, the CCM identifies essential components of the healthcare system whose modification can ensure improved health outcomes at an acceptable cost to the health system (Kesteloot, 1999; Villagra, 2004; Wagner, 1998).

The CCM was developed based on six key tenets: organisation of health care, decision support, clinical information systems, self-management support, community resources, and delivery system design (Wagner, 1998). The tenets focus on the mobilisation of community resources, promotion of high-quality care, empowering patient self-management, evidence and patient preferences-based care implementation, effective use of patient/population data, cultural competency, systematic care, and health promotion (Rea et al., 2007).

The first component, the health system, is indicated by Wagner (1998) to include culture, all stakeholders (such as government and non-governmental organisations), and strategies to promote safe, high-quality care. This component posits that, to ensure quality and improved health outcomes for people living with chronic diseases, the health system should adopt and promote effective improvement strategies, provide incentives, and facilitate care coordination within and across organisations (Kesteloot, 1999; Wagner, 1998). It aims at supporting improvements at all levels of the health system through leadership, capacity building, and policies to create a better environment for the provision of quality care for chronic disease patients (Kesteloot, 1999).

Decision support has been indicated to constitute the promotion of care that is consistent with scientific evidence and patient preferences (Wagner, 1998). It is, therefore, important that the health facility integrates technical expertise and primary care, and share easily accessible information and evidence-based guidelines with patients to motivate their participation in the management process.

The clinical information system component encompasses all avenues to collect, analyse, interpret, and organise clinical data of patients with selected chronic conditions, aimed at providing information necessary to monitor patients' health status and prevent complications (Wagner, 1998). This is to ensure that patients and healthcare providers are provided with timely reminders and relevant information to facilitate the planning of individual patient care, monitor performance of health team and system, as well as coordinate care (Bodenheimer et al., 2002; Wagner, 1998).

The patient self-management support tenet conceptualises that improved outcomes for chronic disease management through quality care is dependent on how empowered and prepared patients are to take charge of their healthcare (Bodenheimer et al., 2002). This emphasises the patient's involvement in the CNCD management practices of health professionals through the provision of support strategies such as assessment, the setting of goals, planning of management, and follow-ups. This is done to encourage patients to identify barriers, challenges, and monitor their conditions using various tools and resources providing visual reminders to manage their condition (Bodenheimer et al., 2002). Another aspect of ensuring self-management support for chronic disease patients is to provide self-management support to patients by mobilising internal and community resources.

The fifth component posits that community resources should be mobilised to meet the needs of the patients (Wagner, 1998). This will ensure that there are social, financial, and emotional supports from various aspects of the community such as the home, school, non-profit and faith-based organisations, and government to keep the patients feeling active, supported, and involved. A major role of the health system then is to advocate and implement policies and programmes that improve patient care (Kesteloot, 1999).

The delivery system design refers to all approaches to assure efficient, effective care, and self-management support for chronic disease patients (Wagner, 1998). The cultural background and understanding of patients are to be taken into consideration, and care practices are acceptable to the patients. Overall, the CCM seeks to ensure that chronic disease patients are able to cope with their conditions and the challenges associated with them through effective self-management support and links to patient-oriented community resources (Wagner, Austin, Davis, Hindmarsh, & Bonomi, 2001).

The CCM has been criticised as being unable to recognise the fact that there may actually be health professionals who have insufficient knowledge on the management of chronic diseases as well as patients who have difficulty being motivated (Yeoh et al., 2018). According to Yeoh et al. (2018), the CCM also does not appreciate the potential limits of linking up with the community. Despite its stated limitations, the study adapted the CCM as the conceptual framework because its tenets resonate with the objectives of the present study. Figure 5 presents the CCM.

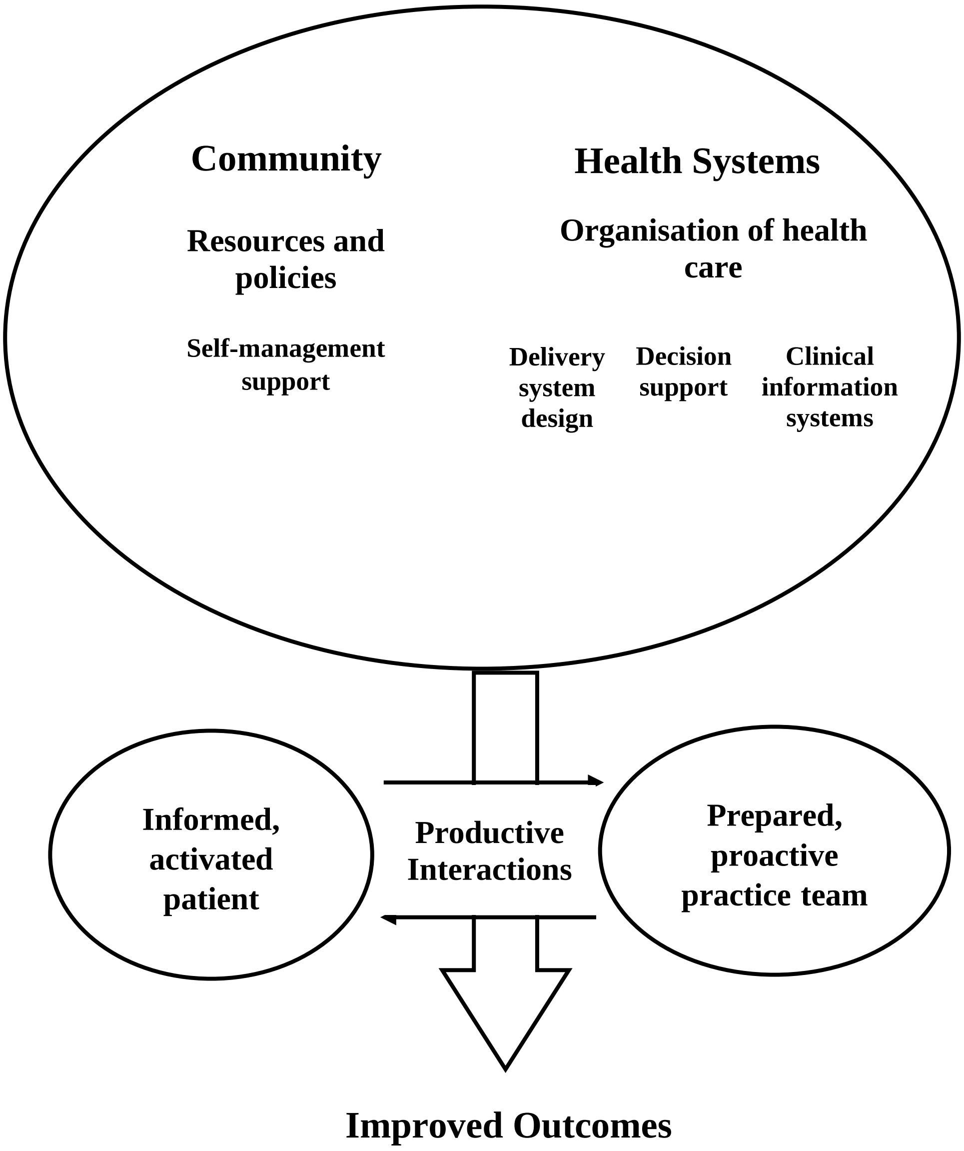


Figure 5: **Chronic care model**

Source: Wagner (1998)

Conceptual Framework

The CCM and the HBM were considered the most relevant of all the theories reviewed and were thus adapted as the conceptual framework of the present study. The various constructs of the theories considered relevant to the study and the research objectives have been incorporated in the model. For instance, analysing data to ascertain the management of CNCDs is grounded in the clinical information systems component, as noted by Wagner (1998). Analysis of data on CNCDs is particularly essential, as it has direct implications for achieving improved health status of patients (Institute for Healthcare Improvement, 2019).

The constructs of decision support, organisation of health care, self-management support, community resources and policies, as well as delivery system design are all related to the management of CNCDs in the present study. This entails management processes and procedures by health professionals, self-management and coping strategies of patients, as well as the role of caregivers in the management of the CNCDs. Patients with CNCDs, for instance, need information and support to become effective managers of their own health (Lall, Engel, Devadasan, Horstman, & Criel, 2018). To meet these needs, they need to have basic information about their conditions and health professionals (as part of their management of the conditions) provide education in that regard. Self-management also entails the need for the patients to be actively involved in the decisions made concerning their care by the health professionals.

The provision of care by health professionals to patients with CNCDs requires not only the determination of what management processes are needed but also the elucidation of tasks and roles to make sure that patients receive the care, that all the health professionals who take care of patients have centralised and up-to-date information on the patient's conditions and where necessary, that follow-ups are made as part of the standard procedures of care (Lall et al., 2018).

Coping strategies of patients living with CNCDs also form a major part of the conceptual framework, where Wagner et al. (2001) indicated that community resources and self-management influence the success and ability of patients with CNCDs to cope with the conditions and their associated challenges. The model also acknowledges the role of the health system, health professionals, and the community (caregivers) in enabling patients with CNCDs to effectively manage and cope with their conditions (Lall et al., 2018).

The conceptual framework recognises that, in efforts to ensure improved health outcomes of CNCD patients through self-management support, there are usually challenges that emanate (Wagner, 1998). These challenges are usually either originating from the patients, the health professionals managing the patients, or the entire health system. The organisation of healthcare, for instance, could be such that it has systemic problems which inhibit the productive interactions between well-informed patients and a practice team (health professionals) that is proactive and prepared to help manage the CNCDs. Figure 6 summarises the conceptual framework.

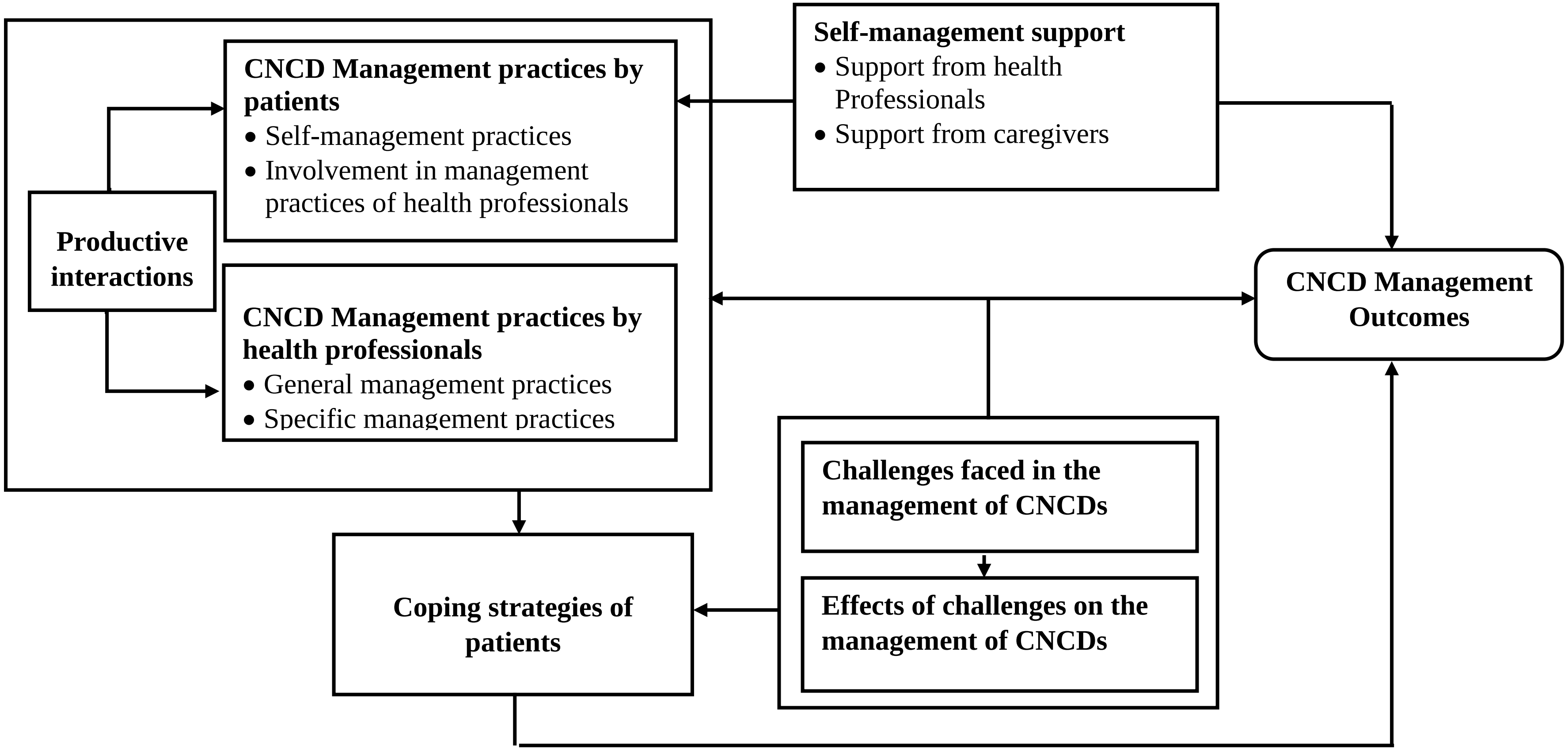


Figure 6: **Conceptual framework**

Source: Amu, 2019

CHAPTER FOUR

PROFILE OF THE STUDY AREA AND RESEARCH METHODS

Introduction

The research philosophy, study design, study area, population, sampling procedure, data collection instruments, data collection procedure, data processing and analysis, and ethical considerations are presented in this chapter.

Research Philosophy

Saunders, Lewis, and Thornhill (2009) defined research philosophy as the development of knowledge and the nature of knowledge. The present study was guided by interpretivism. An interpretivist perspective is based on the idea that qualitative research efforts should be concerned with revealing multiple realities as opposed to searching for one objective reality. Interpretivism forms the basis of qualitative research (Khan, 2012; Merriam, 2009). As such, a qualitative approach was adopted in addressing the objectives of the study. The qualitative approach was adopted to explore the management practices of CNCDs among patients and health professionals, the coping strategies adopted by patients in managing their conditions, and the challenges associated with the management of CNCDs by the patients and health professionals.

The use of the qualitative approach guided by interpretivism enabled the study to obtain a rich and detailed picture of the CNCD situation. Thus, it enabled the study to explore, discover, understand, clarify, and explain the feelings, situations, perceptions, values, attitudes, beliefs, and experiences of the patients and health professionals regarding the issues of concern. The strength of the interpretivism used as the research philosophy was that it made it possible for the qualitative design (phenomenology) to be used in the conduct of the present study. Triangulations were conducted to identify points of convergence in interviews conducted among health professionals and patients with CNCDs.

Study Design

A phenomenological design was adopted in addressing the objectives of the study (Kumar, 2011). Kumar describes a phenomenological design as that which explains why and how there is a relationship between two aspects of a phenomenon or situation and provides in-depth in-sight into such a phenomenon. With the phenomenological design, the researcher seeks to hear a people’s account of an incident or happening in their life or the life of another person who is close to them. Essentially, the person tells his/her story about an incident or situation and the researcher listens passively.

The adoption of a phenomenological design for the present study enabled in-depth information to be unearthed from the study participants (Levin, 2006; Smith, Flowers, & Larkin, 2009). The phenomenological method was specifically used to address the management of CNCDs by patients, the coping strategies adopted by patients in managing their conditions, and the challenges associated with the management of CNCDs by the health professionals.

Study Setting

The study was conducted at KBTH and KATH. These are the two biggest hospitals in Ghana and receive both primary and referral cases from all over the country. Established on October 9, 1923, KBTH grew from an initial 200-bed capacity to over 1,500-bed capacity (KBTH, 2019). It is located in Accra, the capital city of Ghana, and is presently the third-largest Hospital in Africa as well as the leading national referral centre in Ghana. KBTH was established as a General Hospital to address the health needs of the indigenous people. It, however, became a teaching hospital in 1962, when the University of Ghana Medical School (UGMS) was established to train medical doctors (KBTH, 2019).

The hospital has an average daily attendance of 1,500 patients and about 250 admissions (KBTH, 2019). It currently has 2,000 beds and 17 clinical and diagnostic departments/units. The major departments/centres at the hospital comprise child health, central laboratory, surgical, radiotherapy, obstetrics and gynaecology, accidents and emergency, medical, dietherapy, physiotherapy, pathology, psychiatry, radiology, pharmacy, finance, engineering, and general administration, biostatistics, and anaesthesia. Table 1 presents the CNCDs reported at KBTH in 2018. A total of 28,133 cases were recorded. About 60 percent of the cases recorded were hypertension cases. Diabetes also recorded 21.2 percent of cases in 2018.

Table 1: Chronic Non-Communicable Diseases at KBTH in 2018

CNCD	Frequency	Per cent (%)
Hypertension	16300	57.9
Diabetes	5941	21.2
Breast cancer	2197	7.8
Stroke	1008	3.6
Prostate cancer	921	3.3
Asthma	600	2.1
Sickle cell disease	559	2.0
Chronic Kidney Disease	321	1.1
Cervical cancer	241	0.9
Lung cancer	35	0.1
Eye cancer	8	0.03
Leukaemia	2	0.01
Total	28133	100.0

Source: Biostatistics Department of KBTH, 2019

In the 1950s, there was the need to construct a major hospital which would cater to the fast-increasing population in Kumasi and the Ashanti Region (KATH, 2019). In 1954, the new hospital complex was completed and named the Kumasi Central Hospital. The name was later changed to the Komfo Anokye Hospital in honour and memory of a powerful and legendary Ashanti fetish priest called Komfo Anokye. The hospital achieved the status of a Teaching hospital in 1975 for the training of Medical Students of the Kwame Nkrumah University of Science and Technology. Komfo Anokye Teaching

Hospital (KATH) is located in Kumasi, the regional capital of the Ashanti Region.

The major departments at the hospital are surgery, trauma and orthopaedics, medicine, obstetrics and gynaecology, child health, family medicine, oncology, eye, ear, nose and throat (EENT), laboratory, radiology, oral health and anaesthesia and intensive care, and central administration (KATH, 2019). Table 2 presents the CNCDs reported at KATH in 2018. Diabetes recorded 36.4 percent of the CNCD cases in 2018. This was followed by sickle cell disease, with 18 percent.

Table 2: Chronic Non-communicable Diseases at KATH in 2018

CNCD	Frequency	Per cent (%)
Diabetes	496	36.4
Sickle cell disease	245	18.0
Breast cancer	147	10.7
Hypertension	145	10.6
Asthma	117	8.6
Cervical cancer	112	8.2
Chronic Kidney Disease	85	6.2
Prostate cancer	14	1.0
Lung cancer	3	0.2
Eye cancer	1	0.1
Total	1365	100.0

Source: Biostatistics Department of KATH, 2019

Population

The main target population for this study comprised people living with CNCDs and who access services related to their conditions from KBTH and KATH. To obtain expert views on the issue and the fact that the study was also health facility-based, the study targeted health professionals who attend to patients with CNCDs.

Health professionals who directly manage the conditions of the patients when they visit the facilities to access services (medical doctors, nurses, physiotherapists, and optometrists) were the ones included in the study. To be included in the study, however, the health professionals needed to have worked for at least six months at the hospital and managing the condition for which they were interviewed. The essence was to ensure that only health professionals who have considerable experience managing the conditions were included in the study.

All CNCD patients receiving care at the time of data collection for the study as well as health professionals providing services at these units were included. Patients who were seriously ill or health professionals who were not on duty and as such not at the post at the time of the data collection were also excluded from the study.

Sampling Procedure

Patients with CNCDs receiving treatment at the two hospitals as well as health professionals providing CNCD management care were included in the study. They were sampled using purposive and accidental sampling procedures. Maximum variation sampling (Benoot, Hannes, & Bilsen, 2016) was also adopted to ensure that interviews were conducted on all the conditions of concern to the study.

The sampling of patients occurred in three situations. The first situation was that some of the units had clinic days for patients of a particular condition that the study was interested in (such as the diabetes clinic at KATH and the glaucoma clinic at KBTH) and such clinics were out-patient based. In such clinics, an exit strategy was used. This focused on patients leaving the facility after accessing care. Such patients were approached by the research team which sought for their consent. Upon giving the consent, such patients were recruited.

The second situation involved out-patient clinics where several conditions were presented, including those that the study was not interested in. In such situations, with the use of the exit strategy, the research team purposively selected patients who reported with CNCDs that the study was interested in. This was achieved by approaching the patients and asking them the conditions for which they came for review after they had been attended to. Those who mentioned conditions the study was interested in were then recruited upon giving consent to participate. Before the patients were approached by the research team for inclusion in the study, the health professionals on duty announced the presence of the research team to make the patients know that the hospital had given consent for the interviews to be conducted.

The third situation was where in-patients were recruited for the study at units/departments which also had patients with other conditions. In such cases, the assistance of the nurse-in-charge was sought. A patients' register was kept at the departments, on all patients on admission. So, the nurse-in-charge then cross-checks to identify patients whose diagnoses fell within the conditions of interest to the study. Those patients who were very active and could communicate clearly and were not in any form of pain were then recruited upon consenting to be included in the study.

The health professionals present at the time of data collection at a particular unit were approached by the research team and those who consented were then recruited irrespective of their sex. All of the health professionals who had worked at the respective departments for at least six months were targeted for inclusion because the health professionals managed all the conditions which were presented to the departments. Therefore, in the interviews, they were requested to restrict their comments regarding the management of the conditions, the role of caregivers, and challenges in managing the conditions to those conditions that the study was interested in.

Data Collection Instruments

Data were collected with two in-depth interview guides, one for the patients accessing care at the health facilities (Appendix B1), and the other for the health professionals (Appendix B2). The guides were developed based on the socio-demographic characteristics of the participants as well as the objectives which they sought to address. The instrument for the clients was divided into four parts. While Part One addressed the socio-demographic characteristics of the participants, parts two to four respectively focused on the management of CNCDs, challenges associated with the management, and coping strategies adopted by patients in managing the conditions. The instrument for health professionals was also divided into three parts. While

Part One was based on the socio-demographic characteristics of the professionals, Parts Two and Three respectively addressed the management of the conditions and challenges associated with the management of CNCDs by the health professionals. Both interview guides were in the English language. The instruments were validated by giving them to two experts who are professors in qualitative research and CNCDs, to review. The reviews were then incorporated into the final versions of the instruments.

Data Collection Procedures

In-depth interviews were used in collecting data from the patients seeking care at the facilities and the health professionals who provided services to such patients. Data were collected with the help of three field assistants who were trained for two days to acquaint them with the research instruments and objectives of the study. All interviews with health professionals were conducted in English. Twenty-two of the patients' interviews were conducted in Ghanaian languages (Twi and Ga) while the rest were conducted in English. The decision to conduct some interviews in the Ghanaian languages was informed by the individuals' inability to communicate in the English language. To ensure that the use of the local languages did not affect the data collected, the training organised for the assistants also focused on interpretations of the instruments in the languages to ensure that the right questions were asked in those instances where the local languages were used.

Data collection for the study lasted from January to May 2019. Hand-written notes were taken during the interview process to record responses given by the participants. An audio recorder was also used to record the interviews digitally. The purpose of the use of both the audio recorder and hand-written notes was to ensure that the interview process is not halted should any of the equipment (pen or audio recorder) break down during the interview process.

All interviews were conducted face-to-face and were interviewer-administered. The interviewers were all conducted at the health facilities. They were, however, conducted at places where other people could not hear what was being discussed. The interviews for health professionals took place within their working hours (8:00 – 5:00 GMT). It was, however, ensured that the interviews did not overly interfere with service provision. In situations where there were two or more of the health professionals on a particular duty post (eg. nurses), one of them was interviewed upon giving consent at a time. After interviewing that health professional, they are then replaced by others, as the first one goes back to continue with the service provision. In situations where there was only one health professional at a particular duty post (eg. medical doctors and physiotherapists), the research team waited until no patient was waiting to be attended to before the interviews were conducted.

Body gestures were observed and written down in notes which were being taken alongside the recoded interviews. In situations where the patients felt emotional (eg. felt like crying), the interview process was paused and the interviewer calmed them down. In two situations, a psychologist who was on the team was called to speak with the interviewees. Those who were not willing to continue the interview had their interviews truncated. Others, however, continued after the interviews were paused for some time.

Patients with co-morbidities were interviewed under two situations. In situations where the co-morbidities were conditions that the research was interested in, the interviewers ensured that all questions were asked to capture the respective CNCDs and that the patients responded to the management, the role of caregivers, coping strategies, and challenges in dealing with them. In situations where some co-morbidities were not of interest to the study, the participants were interviewed only based on the conditions that the study was interested in.

Positionality

As a researcher in population health and having obtained Mphil in the field, I wanted to understand the issue of CNCDs from a management perspective. This is because I had read several studies on measures to prevent such diseases, including healthy eating, exercising, and taking enough rest. However, the issue of managing CNCDs was usually not extensively covered. I also became concerned that, even though there has been much discussion on preventing CNCDs through the measures I enumerated, the diseases are, however, still on the ascendancy in Ghana. I had witnessed, first-hand, people who died of some of these diseases, particularly hypertension and diabetes. I, therefore, wanted to understand how the diseases are managed in terms of the practices involved. This was because I felt that, if they were managed effectively, deaths that occurred would have been low or entirely averted. On the contrary, they kept increasing.

As a lecturer at the Department of Population and Behavioural Sciences, School of Public Health, University of Health and Allied Sciences, Ghana, I teach a course titled “Change Interventions for Chronic Diseases.” In this course, students are introduced to the etiology, causes/risk factors, prevention, and treatment/management of CNCDs. I always had difficulty identifying scholarly publications focusing on the management of the conditions particularly in Ghana with an emphasis on policy interventions, as I realized that there was no policy on the management of CNCDs in Ghana.

As a patient accessing health facilities for other health services and not those related to CNCDs, I sometimes overheard health professionals complain about the challenges they faced in caring for patients generally. This ranged from logistical to human resource challenges in terms of the high health worker-patient ratio. I was, therefore, interested in understanding the issue scientifically through my own research but with a focus on CNCDs. This was because I sometimes found it hard to believe some of the challenges intimated by the health professionals who made those comments.

Moreover, while I was at the hospital to receive care as a patient, there were other patients, particularly those with CNCDs who complained about the care they were receiving from the health professionals. Some, for instance, mentioned that, whenever they wanted to understand the extent of their conditions, the health professionals were not forthcoming with responsive answers but rather became offended. They also had difficulty in buying their medications which they felt were expensive. Overall, as an individual, I feel very empathetic towards persons living with CNCDs, as these are conditions which sometimes were acquired through no fault of the victims but which they have to live with for the rest of their lives and some even die prematurely from them.

Data Processing and Analysis

Data collected from patients and health professionals using audio recorders were transcribed, proofread, and prepared for analyses by combining all the transcripts into two Microsoft Word files, one for health professionals and the other for patients. Interviews not conducted in English were transcribed into English. To ensure easy navigation during the reading and analysis, each interview was formatted with unique headings. For instance, the first patient interviewed from KATH was labelled ‘KATH PATIENT 01’ while the first patient from KBTH was labelled ‘KBTH PATIENT 01’. For health professionals, the first interview from KATH was labelled ‘KATH HEALTH PROFESSIONAL 01’ and that of KBTH was labelled ‘KBTH HEALTH PROFESSIONAL 01’. To minimise errors, transcribed interviews were compared with notes taken during interviews and proofread while listening to the audio recordings.

The data were then analysed using reflexive thematic analysis. With this, the transcriptions were read twice to ensure familiarity with the data. After that, a codebook was created. With this, codes were identified from the responses of the participants using ATLAS.ti version 7.5.7. While some of the codes were a priori, others were emergent. The a priori themes were mainly based on the objectives of the study. The codes were collated and sorted based on their shared pattern to form sub-themes and, subsequently, main themes. Where needed, themes were combined, separated, or discarded to define a pattern of shared meaning projected by a central idea. To ensure inter-coder reliability, the candidate and another research who is an expert in qualitative research did the coding independently. The two coders, however, compared their codebooks to agree on final codes and themes.

The main theme on practices by caregivers was emergent. After this, the themes were refined and defined by providing names and clear working definitions capturing the essence of each theme. Table 3 presents the coding frame for the health professionals' interviews while Table 4 presents the frame from patients' interviews. Finally, descriptions of the themes were conducted together, with quotes from the participants presented verbatim to substantiate responses given to questions posed during the interviews. Frequency tables, were used to present the socio-demographic characteristics of the study participants as well as the CNCDs of the patients.

Table 3: Coding Frame from Health Professionals' Interviews

Main theme	Sub-theme	Code
	MANAGEMENT PRACTICES	
General management practices	Assessment of patients	Checking of vital signs Laboratory tests History taking
	Education on	State of the conditions How to take medications Proper storage of the medicines
Specific management practices	Based on CNCD presented	Treatment depends on the CNCD presented Different medications and foods
	Based on the stage of the condition	Early-stage patients get life-saving interventions Late-stage patients get treatment to ease pain and suffering
Self-management support	Role of the patient in the management	Self-management education
Management practices by caregivers	Social support	Staying with patients Helping patients with exercises Buying medications for patients Emotional support
	Financial support	Payment of medical bills
	CHALLENGES IN MANAGING CONDITIONS	
Main challenges	Personal challenges	Language barrier Stress emanating from a heavy workload Poor utility supply
	Institutional level challenges	Inadequate logistics Inadequate staff Inadequate motivation Inadequate infrastructure

Table 3 Continued

		Inadequate in-service training
	Patient-related challenges	Financial challenges Social challenges
Effects of challenges on the management of CNCDs	Poor quality of CNCD services	Inability to give off their best in terms of care Inability to perform some essential procedures
	Reduced contact periods for out-patient management services	Reduction in time spent with each patient Delays in the achievement of outcomes
	Disruption in management timelines	Disruptions in treatment schedules which leads to complications Disruptions which lead to deterioration of health status
Suggestions for addressing the challenges/improving the status quo	Increase motivation for staff	Regular provision of refreshment Recognition for roles played at work
	Reduce the cost of management procedures	Reduction in cost of laboratory procedures Reduction in cost of surgical procedures
	Organise regular in-service training for staff	Organisation of conferences on CNCDs Organisation of workshops on CNCDs
	Review of NHIS	To cover management procedures of CNCDs To cover CNCD medications
	Development of a chronic care management policy	The need to give more priority to the management of CNCDs through policy

Table 3 Continued

	Provision and expansion of facilities	The need to accommodate more patients The need to ease pressure on existing facilities
	Employment of more health staff and specialists	The need to reduce workload on existing professionals The need to improve CNCD service delivery with increased staff strength
	Mass sensitisation on CNCDs	The need to reduce misinformation on CNCDs The need to reduce over expectation of patients about their conditions

Source: Amu, 2019

Table 4: Coding Frame from Patients' Interviews

Main theme	Sub-theme	Code
	MANAGEMENT PRACTICES	
How involved patients are in the CNCD management practices of health professionals	Actively involved	Consulted prior to medication change Educated on and chose preferred available management options
	Passively involved	Not involved in decisions about medications Not involved in decision regarding exercises Health professionals became infuriated when management processes are probed Not informed on condition being treated
Self-management practices	Self-restrictions	Diet restrictions Take medication on time Staying away from risk factors
	Exercise	Walking
	Use of anthropometric equipment to monitor health status	Monitor sugar level with glucometer
Practices by Caregivers	Major caregivers	Family Friends Pastors and church members
	Social support	Ensure patients eat on time Accompany and stay with patient at hospital Ensure patients take medications on time Emotional support Encourage exercising
	Financial support	Payment of bills

Table 4 Continued

	COPING STRATEGIES	
Main strategy adopted	Prayer	Self Others (go to church, give money to be prayed for)
	Sharing of lived experiences	Discussions with patients having same condition
	Intrinsic	self-motivation
	Engaging in social activities	Watching/listening to entertainment programmes on tv/radio, Church meetings, community gatherings, playing games
Driving force of coping strategy	Self	I decided not to worry about it
	Family and friends	Husband, wife, mother Close friends
	Health professionals	Doctors motivate me Nurses motivate me
	Religious faith	God, bible, and church (pastor and church members)
Outcome of the strategy adopted	Successful	Psychologically motivated to be resilient
	Unsuccessful	The fact that condition is still present
	CHALLENGES	
Main challenges in the management of the condition by patients	Financial challenges	Inability to buy medicines/undergo surgeries/pay for laboratory tests transportation fare for review Inability to acquire equipment for monitoring health at home
	Social	Nature of job limits adherence

Source: Amu, 2019

Dissemination of Results

The key findings of the study will be presented at workshops and conferences (national and international) through oral and poster presentations. Policy briefs will be developed from key findings and engagements will be carried out with the media to discuss them. Peer-reviewed journal articles will be produced out of the thesis.

Ethical Considerations

Ethical clearance was obtained from the University of Cape Coast Institutional Review Board (IRB) (UCCIRB/CHLS/2018/07) and the Institutional Review Boards of KATH (KATH: RD/CR18/251 & KNUST: CHRPE/AP/023/19) and KBTH (KBTH-STC 000124/2018 and KBTH-IRB/000124/2018) Teaching Hospitals. Permission was also sought from department heads before data were collected. Informed consent was obtained from participants before including them in the study. This was achieved by giving them informed consent forms to sign to indicate their willingness to participate in the study. The purpose of the study was explained to them before interviewing them. They were made aware that they have the right to discontinue the interview process should they feel so, and not to react to questions or statements which would seek to infringe upon their rights including that of privacy.

Steps were taken to ensure that data collected from the participants are kept confidential. It was explained to them that the information made available to the researchers would not be identified with them to ensure anonymity. This was ensured by using pseudonyms where necessary, instead of the real names of the participants and other characteristics that personally identify them. To ensure that data obtained from the participants were protected from unauthorised access, voice recordings were locked with a password-protected computer programme called ‘my lockbox’. The participants were informed that notes taken would be typed and the soft copies equally locked in ‘my lockbox’. The hard copies were, however, hidden from sight by locking them in a box. All authors whose works were used in this study were also duly cited to avoid plagiarism.

Participants were protected from possible physical and psychological harm in the course of data collection. To deal with a possible psychological breakdown of a patient due to negative experiences they had with their conditions, a licensed clinical psychologist (since 2012) was on standby to ensure that such participants are taken care of while the data collection process is discontinued for them.

Trustworthiness

Ensuring the quality of qualitative research is hinged largely on the trustworthiness of the study (Korstjens & Moser, 2018). Trustworthiness, according to Korstjens and Moser (2018) entails credibility, transferability, dependability, and confirmability.

Credibility is concerned with the aspect of truth-value and it is measured with strategies including triangulation. In the current study, data triangulation was the main type of triangulation adopted. With this, findings from KBTH and KATH were realized as communicating similar issues. They were, thus, presented homogenously without comparisons between the two sites. Triangulations were also done between patients and health professionals’ results. Themes that were triangulated were self-management, practices by caregivers, and financial challenges of patients in the management of their conditions. The fact that two researchers independently generated the codes also ensured investigator triangulation where the coders had to compare their codebooks and agree on common codes and themes.

Transferability has to do with a thick description. This involves the description of not just the experiences and behaviours of study participants, but also a detailed account given on the context in which the study was conducted. This ensures that the experiences and behaviours become meaningful to an outsider (Korstjens & Moser, 2018). In the current research, transferability was ensured by describing the study setting, providing the sample size and sampling procedure used, and describing the socio-demographics of the study participants in addition to the CNCDs of patients interviewed. Transferability was also ensured in the present study by providing the coding frames and the fact that samples of the interview guides used in collecting data from the participants have been provided as appendices.

Dependability and confirmability focus on audit trail (Korstjens & Moser, 2018). The audit trail is about transparency in the description of the research processes from the beginning of a study to the development and reporting of the results. In the current study, the audit trail was ensured by documenting the entire research process from the background to the conclusion section. Regarding analyses, coding frames have been provided. The interpretations of the data were also derived from the data collected and not based on the researcher's own preferences and viewpoints, which was made clear by providing a sub-section on positionality.

Limitations

Data were collected qualitatively through in-depth interviews at the respective hospitals. There could have, therefore, been response bias on the part of the participants. Informed consent being sought (where some patients and health professionals actually turned down the request to be recruited into the study) and the interviews being conducted at places where other people could not hear what was being discussed were the strategies adopted to at least reduce the response bias.

Purposive and accidental sampling procedures were adopted in selecting participants for the study. These sampling procedures introduced the possibility of selection bias on the part of the data collection team. However, the use of the exit strategy where patients who were leaving the facility were recruited upon giving consent to participate reduced the level of selection bias.

The results of the study were based on verbal reports given by the participants about events which occurred in the past. There was, therefore, the possibility of recall bias introduced in the data. This bias was, however, largely reduced by ensuring that probes were made on virtually all responses given by the participants for in-depth explanations to be given.

Even though findings have been presented on practices by caregivers, this was obtained from the interviews with patients and health professionals and not from the caregivers themselves. While acknowledging the fact that interviewing caregivers would have made the results more robust, it is worth noting that the theme on caregivers was an emergent them which emanated from the interviews during data collection. Information on the CNCDs of patients were obtained from the patients and health professionals. The idea of disclosing the CNCD to the research team constituted a substantial risk which has to be acknowledged. Nonetheless, the participants were assured of anonymity and confidentiality before including them in the interviews. Another limitation of the study was the inability to assess the knowledge, attitude, and perception of patients.

The descriptions in the study have been presented generally for all the CNCDs. While this was done to present a holistic view of the CNCD management at the two hospitals, it is worth noting that presenting the results based on each of the CNCDs would have further deepened the issues discussed in the thesis.

Chapter Summary

The study employed interpretivism as the research philosophy. It, thus, adopted phenomenology as a study design in addressing the objectives. CNCD patients receiving care at the time of data collection for the study as well as health professionals providing services at the various units were recruited. The inclusion of 82 patients and 30 health professionals in the study from both hospitals was based on purposive and accidental sampling procedures while ensuring maximum variation in the interviews conducted based on the large range of conditions being studied. Two in-depth interview guides (one for the patients and the other for the health professionals) were used to collect data for the study.

Qualitative data collected from patients and health professionals based on the practices involved in the management of CNCDs, coping strategies, and challenges associated with management were analysed using reflexive thematic analysis. Frequencies and percentages were, however, used to present the socio-demographic characteristics of the patients and health professionals.

CHAPTER FIVE

PRACTICES INVOLVED IN THE MANAGEMENT OF CHRONIC NON-COMMUNICABLE DISEASES

Introduction

This chapter presents results on the management of CNCDs by health professionals and patients. The results are based on interviews conducted among patients and health professionals at KATH and KBTH. The socio-demographic characteristics of the health professionals and patients included in the qualitative aspect of the study are also presented in this chapter. The chapter also comes with a discussion of the results based on previous empirical literature, theories reviewed, and the conceptual framework.

Socio-demographic Characteristics of Health Professionals and Patients

Table 5 presents the socio-demographic characteristics of health professionals interviewed from KATH and KBTH. Fifty percent were in their 30s. All the health professionals had tertiary education, with 70 percent attaining a 1st degree. Comparatively, this was 60 percent at KATH and 79.9 percent at KBTH. More than 66 percent of health professionals were married. From the two hospitals, this comprised 53.3 percent from KATH and 73.3 percent from KBTH.

Christianity was the most dominant religion among professionals (93.3%). The majority (83.3%) of the health professionals were Akans. Health professionals interviewed from the two hospitals were nurses (66.7%), physiotherapists (20%), medical doctors (10%), and optometrists (3.3%).

More than 46 percent had also worked for 1-5 years while 40 percent did so for 6-10 years.

Table 5: Socio-demographic Characteristics of Health Professionals

Variable	KATH			KBTH			BOTH HOSPITALS		
	Male %	Female %	Total %(n=15)	Male %	Female %	Total %(n=15)	Male %	Female %	Total %(n=30)
Age									
20-29	13.3	20.0	33.3	-	26.7	26.7	6.7	23.3	30.0
30-39	20.0	33.3	53.3	6.7	40.0	46.7	13.3	36.7	50.0
40-49	6.7	6.7	13.4	6.7	6.7	13.3	6.7	6.7	13.3
50-59	-	-	-	-	13.3	13.3	-	6.7	6.7
Level of formal education									
Diploma	20.0	13.3	33.3	-	6.7	6.7	10.0	10.0	20.0
1st degree	13.3	46.7	60.0	-	79.9	79.9	6.7	63.3	70.0
2nd degree	6.7	-	6.7	6.7	-	6.7	6.7	-	6.7
3rd degree	-	-	-	6.7	-	6.7	3.3	-	3.3
Marital status									
Never married	26.7	13.3	40.0	-	20.0	20.0	13.3	16.7	30.0
Married	6.7	46.6	53.3	13.3	66.7	80.0	10.0	56.7	66.7
Divorced	-	-	-	-	-	-	-	-	-
Widowed	-	6.7	6.7	-	-	-	-	3.3	3.3
Religion									
Christianity	33.3	60.0	93.3	13.3	80.0	93.3	23.3	95.5	93.3
Islam	6.7	-	6.7	-	6.7	6.7	3.3	3.3	6.6

Table 5 Continued

Ethnicity									
Mole-Dagbani	6.7	-	6.7	-	-	-	3.3	-	3.3
Ewe	6.7	-	6.7	-	6.7	6.7	3.3	3.3	6.3
Akan	26.6	60.0	86.6	13.3	66.7	80	20.0	63.3	83.3
Ga/Dagbani	-	-	-	-	13.3	13.3	-	6.7	6.7
Occupation									
Medical doctor	-	6.7	6.7	13.3	-	13.3	6.7	3.3	10.0
Nurse	20.0	53.3	73.3	-	60.0	60.0	10.0	56.7	66.7
Optometrist	-	-	-	-	6.7.0	6.7	-	3.3	3.3
Physiotherapist	13.3	6.7	20.0	-	20.0	20.0	6.7	13.3	20.0
Duration of practice (In years)									
1-5	20.0	33.3	53.3	-	40.0	40.0	10.0	36.7	46.7
6-10	20.0	20.0	40.0	13.3	26.7	40.0	16.7	23.3	40.0
11+	-	6.7	6.7	-	20.0	20.0	-	13.3	13.3

Source: Amu, 2019

Table 6 presents the socio-demographic characteristics of patients interviewed from KATH and KBTH. It was realised that about 51 percent were 60 years and above. Patients in their 20s and 30s also constituted more than 24 percent. Females constituted more than 57 percent. About 45 percent of the patients had SHS/O'level/A'level of education. The majority (86.6%) were Christians and more than 64 percent were married. By occupation, the participants were generally traders (23.2%), farmers (18.4%), civil servants (15.8%), retired civil servants (13.5%), artisans (13.5%), and drivers (6.1%). More than 19 percent were, however, unemployed. By ethnicity, more than 53 percent were Akans. Comparatively, while the majority (90.3%) of patients at KATH were from the northern part of the country (Ashanti, Northern, Upper East, and Upper West Regions) most patients at KBTH (95.2%) were from the southern part (Greater Accra, Central, Volta, Western, and Eastern Regions).

Table 6: Socio-demographic Characteristics of Patients

Variable	KATH			KBTH			BOTH HOSPITALS		
	Male %	Female %	Total %(n=41)	Male %	Female %	Total %(n=41)	Male %	Female %	Total %(n=82)
Age									
20-29	4.9	9.8	14.7	4.9	4.9	9.8	4.9	7.3	12.2
30-39	4.9)	7.3	12.2	-	-	-	2.4	3.7	6.2
40-49	4.9	4.9	9.8	7.3	4.9	12.2	6.1	4.9	10.9
50-59	9.8	9.8	19.6	9.8	9.8	19.6	9.8	9.8	19.5
60+	14.5	29.2	43.7	26.7	31.7	58.4	20.7	30.5	51.2
Level of formal education									
No formal education	2.3	9.8	12.1	2.4	4.9	7.3	2.4	7.3	9.8
Primary	-	9.8	9.8	-	2.4	2.4	-	6.1	6.1
Middle school/JHS	17.1	14.6	31.7	-	4.9	4.9	8.5	9.8	18.3
SHS/O'level/A'level	14.6	17.1	31.7	21.9	36.7	58.6	18.3	26.8	45.1
Tertiary	4.9	9.8	14.7	21.9	4.9	26.8	13.4	7.3	20.7
Marital status									
Never married	2.4	12.2	14.6	4.9	7.3	12.2	3.7	9.8	13.4
Married	34.1	19.6	53.7	41.5	34.1	75.1	37.8	26.8	64.7
Divorced	2.4	12.2	14.6	-	2.4	2.4	1.2	7.3	8.5
Widowed	-	17.1	17.1	-	9.8	9.8	-	13.4	13.4
Religion									
Christianity	36.6	53.7	90.3	36.6	46.3	82.9	36.6	50.0	86.6
Islam	2.4	7.3	9.7	7.3	9.8	17.1	4.9	8.5	13.4

Table 6 Continued

Occupation									
Unemployed	2.4	14.6	17.0	4.9	17.1	22	3.7	15.9	19.5
Retired civil servant	2.4	7.3	9.7	14.7	2.4	17.1	8.5	4.9	13.4
Farmer	9.8	4.9	14.7	-	2.4	2.4	4.9	3.7	8.5
Trader	4.9	4.9	22.0	-	22.0	22	2.4	13.4	15.9
Driver	7.3	17.1	24.4	2.4	-	2.4	4.9	8.5	13.4
Civil servant	2.4	4.9	7.3	17.1	2.4	19.5	9.8	3.7	13.4
Artisan	4.9	12.2	17.1	7.3	7.3	14.6	6.1	9.8	15.9
Ethnicity									
Mole-Dagbani	4.9	14.6	19.5	4.9	4.9	9.8	4.9	8(9.8	14.6
Akan	24.4	39.0	63.4	24.4	19.5	43.9	24.4	29.3	53.8
Ewe	7.3	2.4	9.8	7.3	12.2	19.5	7.3	7.3	14.6
Ga/Dangme	-	4.9	4.9	9.8	14.6	24.4	4.9	9.8	14.6
Nigerian	-	2.4	2.4	-	2.4	2.4	-	2.4	2.4
Region of residence									
Greater Accra	2.4	-	2.4	36.7	43.9	80.6	19.4	21.9	41.5
Central	2.4	2.4	4.9	7.3	4.9	12.2	4.9	3.6	8.5
Volta	-	-	-	-	2.4	2.4	-	1.2	1.2
Eastern	-	2.4	2.4	-	-	-	-	1.2	1.2
Ashanti	29.3	36.6	65.9	2.4	2.4	4.8	15.9	19.5	35.4
Northern	2.4	17.2	19.6	-	-	-	1.2	8.6	9.8
Upper East	2.4	-	2.4	-	-	-	1.2	-	1.2
Upper West	-	2.4	2.4	-	-	-	-	1.2	1.2

Source: Amu, 2019

Chronic Non-Communicable Diseases of Patients

Table 7 presents the CNCDs of patients. It was realised that more than 25 percent of the patients were having comorbidities. Stroke and glaucoma respectively recorded 13.4 percent. Comparatively, 14.6 percent of the patients presented with stroke at KATH while at KBTH, the stroke patients interviewed constituted 12.2 percent. Glaucoma, on the other hand, had 9.8 percent of patients at KATH and 17.1 percent at KBTH. Hypertension was present in almost all the co-morbid cases recorded while as a stand-alone condition, it also recorded more than seven percent. No cervical cancer and leukaemia patients were interviewed from KATH. No breast cancer patients were also interviewed from KBTH. This was because patients did not report with those CNCDs during the time of the interviews.

Table 7: Chronic Non-Communicable Diseases of Patients

Variable	KATH			KBTH			BOTH HOSPITALS		
	Male %	Female %	Total %(n=41)	Male %	Female %	Total %(n=41)	Male %	Female %	Total %(n=82)
Eye cancer	-	2.4	2.4	2.4	-	2.4	2.5	1.2	3.7
Prostate cancer	4.9	-	4.9	4.9	-	4.9	4.9	-	4.9
Breast cancer	-	2.4	2.4	-	-	-	-	1.2	1.2
Cervical cancer	-	-	-	-	2.4	2.4	-	1.2	1.2
Leukaemia	-	-	-	2.4	-	2.4	1.2	-	1.2
Asthma	2.4	-	2.4	2.4	4.9	7.3	2.4	2.4	4.9
Diabetes	2.4	7.3	9.8	-	2.4	2.4	1.2	4.9	6.2
Sickle cell	-	4.9	4.9	2.4	2.4	4.9	1.2	3.7	4.9
Stroke	4.9	9.8	14.6	4.9	7.3	12.2	4.9	8.5	13.4
Glaucoma	7.3	2.4	9.8	9.8	7.3	17.1	8.5	4.9	13.4
Chronic kidney disease	7.3	2.4	9.8	4.9	4.9	9.8	6.1	3.7	9.8
Chronic lung disease	-	4.9	4.9	-	2.4	2.4	-	3.7	3.7
Hypertension	2.4	4.9	7.3	-	7.3	7.3	1.2	6.1	7.3
Hypertension & Diabetes	2.4	7.3	9.8	2.4	4.9	7.3	2.4	6.1	8.5
Hypertension, Diabetes & stroke	-	2.4	2.4	-	-	-	-	1.2	1.2
Hypertension, Diabetes & glaucoma	-	2.4	2.4	_	-	-	-	1.2	1.2
Hypertension & Glaucoma	-	4.9	4.9	-	-	-	-	2.4	2.4
Hypertension & Chronic kidney disease	-	-	-	-	4.9	4.9	-	2.4	2.4
Hypertension & Prostate cancer	-	-	-	2.4)	-	2.4	1.2	-	1.2
Hypertension, Asthma & prostate cancer	-	-	-	2.4	-	2.4	1.2	-	1.2
Hypertension & stroke	2.4	2.4	2.4	2.4	2.4	4.9	2.4	2.4	4.9
Diabetes & breast cancer	-	-	2.4	-	2.4	2.4	-	1.2	1.2

Source: Amu, 2019

Themes on practices involved in the management of CNCDs

Management practices regarding CNCDs were analysed from the health professionals' and patients' interviews and focused on roles that health professionals, patients, and caregivers of patients played in managing the conditions. Table 8 presents the themes derived from the interviews conducted among health professionals while Table 9 presents that of patients. For health professionals, four main themes emerged. These were general management practices, specific management practices, self-management support, and the practices by caregivers in the management of CNCDs. Three main themes also emerged from the patients' interviews. These were the patients' involvement in the CNCD management practices of health professionals, their self-management practices, and practices by caregivers in the management of the conditions.

Table 8: Themes on Practices Involved in the Management of CNCDs From Health Professionals' Interviews

Main theme	Sub-theme
General management practices	Assessment of patients • Checking of vital signs • Laboratory tests • History taking Education • On the state of the conditions • On how to take medications • On proper storage of the medicines
Specific management practices	Based on CNCD presented • Treatment depends on the CNCD presented • Different medications and foods Based on the stage of the condition • Patients with early-stage presentation get life-saving interventions • Patients with late-stage presentation only get treatment to ease pain and suffering
Self-management support	Role of the patient in the management • Self-management education
Management practices by caregivers	Social support • Staying with patients • Helping patients with exercises • Buying medications for patients • Emotional support Financial support • Payment of medical bills

Source: Amu, 2019

Table 9: Themes on Practices Involved in the Management of CNCDs From Patients' Interviews

Main theme	Sub-theme
Patients' involvement in the CNCD management practices of health professionals	Actively involved • Consulted before medications were changed • Educated on the options available in the management of their diseases and chose preferred ones Passive involvement. • Not involved in decision making regarding medications • Not involved in the decision regarding exercises to be conducted • Not informed about the condition being treated for • Become infuriated when patients probe their management processes
Self-management practices	Self-restrictions • Diet restrictions • Taking medications on time • Staying away from risk factors Exercise • Walking Personal first aid • Carry out warm water compression Use of anthropometric equipment to monitor the health status • Monitor sugar level with a glucometer
Practices by Caregivers (Family, friends, and church)	Social support • Ensure patients eat on time • Accompany and stay with the patient at the hospital • Ensure patients take medications on time • Emotional support • Encourage patients to exercise Financial support: • Payment of medical bills

Source: Amu, 2019

General Practices by Health Professionals in the Management of Chronic Non-Communicable Diseases

The general CNCD management practices of health professionals usually entail services that are provided by health professionals to the generality of patients irrespective of the conditions they present (Kachimanga et al., 2019). The general assessment of patients' conditions is also an important pre-requite to proper and effective diagnosis and management of CNCDs (Harries, Zachariah, Kapur, Jahn, & Enarson, 2009). Education is an essential component in the general practices involved in the management of CNCDs, as it ensures that patients adhere to management directives required for improvements in health status (Clarke, Bourn, Skoufalos, Beck, & Castillo, 2017; Win, Hassan, Oinas-Kukkonen, & Probst, 2016).

Informed by the conceptual framework and objectives of the study, the general management practices of health professionals in the present study comprised assessment of patients' conditions and general education on the conditions. Regarding general assessments, the health professionals mentioned that they mainly assessed patients through checking their vital signs, laboratory testing, and history taking about the CNCDs. With regard to checking of vital signs, the health professionals generally checked the blood pressure, visual process, temperature, pulse, and respiration (TPR) of the patients. The checking of the vital signs enabled the health professionals to effectively manage the CNCDs.

> *Well! we usually check some vitals such as blood pressure and that runs for every patient, whether you are hypertensive, or not. This is important and has to be done so that we have a*

> *baseline with which to work and manage your condition.* We also take the weight and height for them.
>
> – *KATH, Nurse, Female, 31 years*

Laboratory testing, according to the health professionals, also helped immensely to adequately understand the conditions presented by the patients. When the lab tests are conducted, they help to confirm the presence of the CNCDs in the patients and to understand how they had been treating the conditions in the past.

> *Oh okay! when you come err, the first thing we do for each patient is to know your vital signs. So, we check your blood pressure, check your weight, your height, and we also check your TPR (temperature, pulse and respiration)*
>
> – *KBTH, Nurse, Female, 32 years*

The health professionals also noted that history taking was a key general management practice based on CNCD management, as it gave them a clear understanding of disease onset and progression. According to the participants, history taking ensured effective management of the condition.

> *So, the doctor will take the history which is about how the thing started. You ask a bit about the family history. …we the family specialists take information on social life, the social setting… whether he is coming from a rich or poor family.*
>
> – *KBTH, Medical Doctor, Male, 35 years*

The health professionals, as part of the general management of patients' conditions, also educated the patients on the state of their conditions, how to take their medications, and how to properly store the medications. On education about the state of the conditions, the health professionals noted that they usually educated the patients to appreciate the stage of their conditions. They intimated that, sometimes, patients came to the health facilities as relapsed cases and, in such situations, education was done to orient them on the fact that the CNCD had become chronic. This information then enabled the patients to appreciate the stage the condition had reached so that they would give it more attention and seriousness.

> *So, for the management, education is very important especially if it is an old case (a relapse), and because it has now become chronic, we need to educate the patient to appreciate the stage of the condition.*
>
> *– KBTH, Physiotherapist, Female, 30 years*

Concerning the education of patients on taking medications, the health professionals educated the patients on the need to take their medications since that was the surest way of ensuring improved health. They also educated the patients on the storage of their medications irrespective of their conditions. This is essential because, if medications are not stored under the right temperature, they have the propensity of losing their efficacy.

> *We educate them on how to take the medications and also we inspect to make sure they follow the prescription. Those who do not follow the prescription are then educated again on the need to take them (medications) as expected*

– *KATH, Nurse, Female, 30 years*

The general CNCD management services provided by the health professionals generally reflect the services provided to patients in the general healthcare system of Ghana. They were, thus, not so different from services provided to non-CNCD patients. Irrespective of health conditions presented to hospitals in Ghana, the general practices like history taking and checking of vital signs make it possible for health professionals to identify the genesis of the problem and to identify appropriate interventions that could be preferred. In a social structure where 19 percent of women and nine percent of men have no formal education (GSS et al., 2015), it is sometimes a daunting task for health professionals in conducting the general assessments such as history taking, as some patients find it difficult appropriately describing their disease progress. It is, however, on these general assessments that specific practices are based and this makes their conduct very imperative.

Specific Practices by Health Professionals in Management of CNCDs

Specific practices carried out by health professionals in the management of CNCDs ensure that tailored interventions are proffered to improve the health status of patients (Nolte, 2017). The practices ensure that the health professionals are able to determine the form of intervention to put in place to improve the health of the patient (De Rosa, Samoni, Villa, & Ronco, 2017; Kim, Cho, & Yoon, 2015). Such management practices are usually carried out by health professionals based on CNCDs of the patients.

In the present study, specific CNCD practices carried out by health professionals were based on the CNCDs presented and the stage of the conditions upon presentation. While the general management practices were performed irrespective of the CNCDs of patients, the health professionals noted that actual diagnosis and treatment depended mainly on the type of CNCD a patient presents. They also said that medications given as well as foods to be eaten by patients mainly depended on the type of condition the patients presented. A nurse from KBTH, for instance, made the following comments concerning management based on the specific CNCD presented by the patient:

> *If you are diabetic, we need to check your glucose level on every visit …If you are asthmatic too, we want to know the amount of air in the lungs. So, we have a mouthpiece we give you when you come for each visit to know your peak flow rate.*
>
> *– KBTH, Nurse, Female, 32 years*

Specific CNCD management practices carried out by the health professionals varied when patients reported with either early-stage (normal) or late-stage (acute) conditions. The health professionals noted that patients who reported early were given timely interventions including surgery to halt the level of deterioration of their conditions. A nurse from KBTH, for instance, narrated what is done for glaucoma patients who present their conditions at an early stage.

> *So, after they've been diagnosed, those (glaucoma patients) who report early and, therefore, have their optic nerves to be healthy and their field vision hasn't gone that bad, can undergo surgery and then the eye will do better after the surgery.*
>
> *–KBTH, Nurse, Female, 34 years.*

Sometimes, however, the patients delayed at home before reporting their conditions. When that happens, their conditions deteriorate before they report. The health professionals, in such situations, only provided them with management options meant to ease pain and suffering but not necessarily to improve their conditions.

> *…those (glaucoma patients) whose field vision is gone mainly because they came (reported) late and are just left with a tunnel vision, their optic nerve not that strong and their cornea not too good, the surgery will not be of benefit to them. So, what we do is to just give them medication to ease pain and suffering. That's all.*
>
> *–KBTH, Nurse, Female, 34 years.*

In the management of CNCDs in Ghana, specific management practices usually follow the general management services provided by health professionals to patients. That is, usually, checking of history and vital signs are carried out to inform the specific management options that would be recommended by medical doctors. It is at this point that tailor-made services are provided to the patients based on the conditions they present. After being diagnosed by the clinician and treatment options (such as surgery and medications) recommended, patients are generally educated by nurses on the need to take their medications and adhere to the clinician's directives. The findings from the health professionals' interviews based on the general and specific management practices, thus, reflect the general practice in Ghana.

Self-Management Practices

Self-management is a key component of optimal chronic disease care and results in effective and prompt management of CNCDs when implemented appropriately (Glasgow, Jeon, Kraus, & Pearce-Brown, 2008). With self-management, patients are empowered to actively participate in their own management process (Grady & Gough, 2014). In the present study, self-management of CNCDs was realised in both the health professionals' and patients' interviews. In the health professionals' interviews, it was in the form of self-management support to the patients. In the patients' interviews, however, it was mainly on the activities that the patients themselves put in place to manage the conditions especially when they were at home.

Patient self-management support by health professionals is acknowledged as a vital element of chronic care (Rochfort et al., 2018). From the health professionals' interviews of the present study, it was mainly about the education that the professionals provided to the patients on managing their conditions at home. The education mainly centred on prescribed exercises that some of the patients were expected to do at home. This, according to the health professionals, was essential because the patients spent most of their time at home and thus needed to take charge of their own health before returning for reviews. A physiotherapist from KATH, for instance, noted:

> *For each patient, we educate and design a particular home exercise and insist on the patient doing more of those things because they spend more time at home than they do at the facility. So, we educate them on the need to do what has been prescribed for them at home*

– KATH, Physiotherapist, Female, 31 years

Self-management practices by patients themselves entail the management processes and procedures that patients themselves actually carry out, either initiated by themselves or admonished by health professionals for them to carry out especially at home (Grady & Gough, 2014). It has been shown that self-management-based interventions can result in better health outcomes of people living with CNCDs (Mackey, Doody, Werner, & Fullen, 2016). Self-management practices realised from the patients' interviews of the present study entailed exercises, self-restrictions, personal first aid, and the use of anthropometric equipment to monitor health status.

Exercise was an important self-management activity among patients, especially those living with hypertension, stroke, and diabetes. As a lot of the patients were 60 years and above and were quite weak due to the debilitating effects of the CNCDs on their health, the key exercise realised was walking. With this, many of the patients mentioned that they were able to walk for some distance to remain healthy.

> *What I do for myself is that whenever I wake up in the morning, I do some exercise, like walking for some time.*
>
> *– KBTH, Hypertension and Stroke, Female, 65 years.*

With self-restrictions, most of the patients indicated that they mainly restricted themselves from certain things so as not to aggravate their conditions. Such restrictions were largely informed by the self-management education given them by health professionals. They entailed diet restrictions and avoiding triggers of their conditions. With the avoidance of triggers, an asthmatic patient from KATH, for instance, noted that she usually experienced episodes of her asthma due to dust from dirty fans and louvre blades as well as unprescribed medications. As such, she tried to avoid such triggers as indicated in the following quote:

> *Well! for me, mostly my attack comes as a result of dust especially the ones on fan and louvres, so, I try to avoid them... I don't take in any medicine aside from the asthma medication that has been prescribed for me because they can cause an attack…*
>
> *–KATH, Asthma, Male, 53 years.*

Diet restrictions, according to the patients, were self-management practices they put in place to ensure their conditions improved. Such restrictions focused on the type of foods to avoid and time to avoid eating. Some, for instance, stopped eating late and no longer ate foods they ate prior to being diagnosed with their conditions.

> *I used to take in any food at all, not minding the amount of pepper I take… I liked waakye a lot, and kenkey too... But since I fell sick, my breakfast usually comprises oats, or wheat, or tom brown (a Ghanaian porridge made from roasted corn, brown rice, peanuts, and soya beans). In the afternoon and evening too, I am mindful to eat on time. By 6 pm, I would have taken supper already.*
>
> *–KBTH, Patient, Female, 50 years*

The patients also used anthropometric equipment to monitor their health status at home. A patient from KBTH, for instance, noted that she bought a glucometer to check her glucose level at home and always reported at the hospital whenever she realised a higher blood glucose level. Some of the patients also resorted to the use of first aid to ensure that their conditions do not degenerate before they report at the health facility. One of the patients noted, for instance, that she had resorted to the use of warm water compression whenever she feels she is about to have a complication. She noted:

> *I do take my own first aid before it gets serious. Whenever I start feeling pains, I use warm water compression to treat myself, take in my drugs and then rest a bit to see what happens, if it still isn't working, I have to rush to the hospital, and see a doctor.*
>
> *–KATH, Patient, Female, 43 years*

In Ghana, much of the efforts at managing CNCDs are left in the hands of the patients. This is because the health system is usually overwhelmed with patients who are much more than health professionals available to manage their conditions and facilities to take care of all of them. Self-management, thus, becomes very critical since the patients would have to do a lot of the management on their own. The self-management practices found in this study, to a large extent, reflect the popular avenues that patients use in the management of their conditions while at home. While patients use various forms of exercise, the main one realised in this study was walking and this may be largely because the comparative majority of the study's sample was above 50 years and cannot engage in the more vigorous exercises like jogging and running.

Patients' Involvement in the Management Practices of Health Professionals

The involvement of patients in the CNCD management practices of health professionals is seen as their involvement in care and treatment decision-making process (Sahlsten, Larsson, Sjostrom, & Plos, 2008). Patients' involvement in the management of their conditions by health professionals is associated with improved management outcomes (Vahdat, Hamzehgardeshi, Hessam, & Hamzehgardeshi, 2014). In this study, patient involvement focused on being consulted in decision-making regarding CNCD management as well as being provided with adequate information on the management of their CNCDs by the health professionals. Patients were, thus, considered actively involved in the management of their care by health professionals when they were consulted in decision-making regarding their care such that they had the choice to choose from management options where necessary as well as provided with adequate information on their conditions by health professionals.

From the patients' interviews in the present study, most patients indicated not being actively involved in the management practices carried out by health professionals. For such patients, their involvement in the management of their conditions was passive rather than active. Even though the guidelines of the healthcare profession require practitioners to actively involve patients in all aspects of their care, the patients argued that they were usually not consulted/involved in decision-making concerning the management of their diseases by the professionals. They were usually only presented with a list of medicines to buy but were not involved in deciding the type of medicine or brand that they would have preferred. Several of the patients also indicated that they were not consulted before their medicines were changed by the health professionals. The health professionals only conducted their assessments and whenever they felt the need to change the medicines, the did so.

> *No! they just let me go and see the doctor ... When I go to see the doctor, then he will write some medicines for me. After that then they only tell me I can go and come back when the medicine gets finished. They don't ask me to select any medicine or the type I want.*
>
> *–KATH, Patient, Female, 60 years*

There were instances where patients were not even made aware of the conditions for which they were being treated. A male patient from KATH indicated that, as an in-patient, he was not told by the health professionals what was wrong with him. The following quote summarises his comments in this regard.

> *Okay! for me, I have not asked the doctor what is wrong with me and he has also not told me anything about my condition. Everything is on my file. Whatever they tell me, I do it and when the nurses look inside (his patient file), then they give me medications to take.*
>
> *–KATH, Patient, Male, 48 years*

Some of the health professionals even become infuriated and rude towards patients when they asked to know more about their conditions. As such, they were usually afraid to ask them what their conditions were. A male patient from KBTH posited:

> *I don't think they (health professionals) involve me in any way...This is because anytime you try to ask questions, some of them will perceive it to be that you are going beyond your boundaries and then they would start getting angry and behaving someway.*
>
> *–KBTH, Patient, Male, 45 years*

For the few patients who were actively in the CMCD management practices by health professionals, it was realised that their consent/opinions were sought in decision-making concerning the management of their conditions. They were consulted by the health professionals before their medications were changed. They were also educated on the options available in the management of their diseases and chose the options they preferred.

> *When they give you the drugs and you take them and you feel like you don't like it, you tell the doctor when you meet him. When you tell him he would know what to do and he would change the drug for you. So, yes! I am normally involved in the management*
>
> *–KATH, Patient, Female, 22 years*

While the claim by most of the patients that they were not actively involved in the management processes concerning their care by the health professionals may be genuine and worth policy considerations, it is also important to note that some of such decisions by the health professionals could have important reasons behind them. For instance, considering that a lot of these patients do not understand the chemical efficacy and implications due to the relatively high illiteracy levels, the health professionals might have taken such decisions not to involve them in the selection of medications, for instance, because they are not in the right positions to make informed decisions when given the opportunity to do so. Nonetheless, it behoves the health professionals to fully explain the management options to the patients so they are properly informed to make the right decisions. The findings also reflect the general Ghanaian practice where health professionals consider patients as passive stakeholders who need decisions to be taken for.

Practices by Caregivers in the Management of CNCDs

The role of caregivers is considered paramount in the management of chronic diseases as it leads to better adherence to medication and lifestyle recommendations (Trivedi, 2017). From both health professionals' and patients' interviews of this study, caregivers were identified as intrinsic in the management of CNCDs at the two hospitals.

From both patients' and health professionals' interviews, the major caregivers were family members. The key family members mentioned as the caregivers were nuclear family members such as parents, spouses, and children of the patients. Extended family relations such as uncles also served as caregivers to many patients. Aside from families, however, friends and church members, notably pastors, also played caregiving roles in the management of CNCDs at both hospitals. A patient from KATH, for instance, said "*My family is well to do so, they have been taking care of me*" (KATH**,** Hypertension, Female, 50 years). A 26-year-old female patient from KATH also noted that family and friends were her caregivers: "*…my family and friends are very supportive. They really take good care of me.*"

The social support role of caregivers is a prerequisite in ensuring the success of CNCD management (Lyons et al., 2014). Usually, CNCDs incapacitate patients and make it difficult for them to be financially capable of taking care of their own needs (Jeon, Essue, Jan, Wells, & Whitworth, 2009; Kristensen, Hølge-Hazelton, Waldorff, & Guassora, 2017). Caregivers, therefore, usually assume the financial responsibilities of the patients, which include the cost of managing their conditions (Sullivan & Miller, 2015).

From both the health professionals' and patients' interviews, caregivers played social and financial roles in the management of CNCDs. From the patients' interviews, social support from caregivers entailed ensuring that patients eat on time, ensuring that they take medications on time, supporting patients to exercise, accompanying and staying with patients at the hospital, as well as providing emotional support. From the health professionals' interviews, social support in the management of CNCDs by caregivers entailed caregivers' staying with patients, helping them with exercises, buying medications for them, as well as providing emotional support. With regard to the caregivers staying with patients, the health professionals acknowledged that the caregivers were the ones who normally come to the hospital with the patients and continue to stay with them. The following quotes summarise their responses:

> *My parents are doing well. In terms of my diet, they always make sure I eat on time... So, they have done a lot. Without them, I don't know what I would have done*
>
> *–KBTH, Patient, Male, 27 years*

> *…they (caregivers) do assist them (patients). They come with them. At times, the patients are weak and need their supporters to come. Sometimes, the patient has to go to lab and other places. So, relatives have to accompany them. They really play a good role.*
>
> *–KBTH, Nurse, Female, 58 years*

The caregivers also provided emotional support which helped to improve their healing tremendously. Recognising the importance of having caregivers staying with the patients, the health professionals indicated that they usually allowed them to spend some time with the patients who were in the wards to converse with them. There were usually visiting hours within which the caregivers were allowed to spend time with the patients. This is essential because emotional healing is essential in the CNCD management process.

> *They (family and friends) converse with me often and also advise me not to think about it (the condition). I used to worry about it. As a person who used to go about her own things and now I have to be using a walking-stick…but they (have been advising me to be strong and I think it helps.*
>
> *–KATH, Patient, Female, 70 years*

> *Sometimes, we give them the chance to also come around, talk to them (referring to in-patients) ... so that they can have that family bond which is important for healing.*
>
> *–KATH, Nurse, Male, 28 years*

Financial support was also a key role played by caregivers. Both the patients and health professionals indicated in the current study that caregivers provided patients with financial support towards payment of bills. The bills paid generally covered medications and surgeries as well as transportation cost. Caregivers were essential because, as a result of the CNCDs, most of the patients become too weak to work and earn an income themselves. They also exhaust all their savings and had to depend on the caregivers.

> *My money has been exhausted because of the sickness. So, my loved ones (family) who care for me are those who provide me with money, say one million (GH₵ 100 [GH₵: The Ghana Cedi, is Ghana's official currency]) and I am managing…My driver friends… they contributed and presented me with five million (GH₵ 500) for the treatment.*
>
> *–KATH, Patient, Male, 48 years*

The health professionals corroborated the accounts given by the patients concerning the financial support that caregivers provide towards the management of their conditions. They argued that some of the patients were very old and could not work. The caregivers, therefore, took care of their financial needs. Medical bills on computed tomography (CT) scans, medications, and surgeries were paid for by the caregivers. The following quotes summarise the financial roles played by the caregivers:

> *Some patients become wheelchair-bound…some of them are very old and cannot do any work themselves. So, we involve the caregivers as well in the management in terms of what to do for them in the house and how they are supposed to support them in everything including money and other financial matters.*
>
> *– KBTH, Physiotherapist, Female, 27 years*

In Ghana, social structure plays a key role in the lives of individuals. Social support is seen as pivotal in the individual's development and overall wellbeing. People, for instance, depend on their social networks for various forms of support, some of which are social. It was, therefore, not surprising from the quotes that caregivers especially family and friends played key social roles including accompanying and staying with the patients at the health facilities and providing them emotional support.

The Ghanaian society has been socially structured such that whenever people have financial difficulties, they easily turn to their social networks who are mainly their family and friends for support. It is commonplace for a Ghanaian who has a financial need to seek support from family and friends in the form of interest-free loans rather than seek support from the commercial banks. In the current study, the financial support provided by caregivers to patients including paying for their medications and surgeries, therefore, reflect practices in the social milieu.

Discussion

This chapter of the research explored practices involved in the management of CNCDs by patients and health professionals. The key findings entailed practices of health professionals which included general education, checking of disease history and vital signs, as well as medications/surgeries based on the CNCD presented by the patients and the stage of the disease upon presentation. Self-management practices were also realised to include self-management support provided to patients by the health professionals as well as exercise, use of personal first aid, self-restrictions, and the use of anthropometric equipment to monitor health status at home. Caregivers who were mainly family and friends also played social and financial roles including accompanying patients to the hospital and paying for their medical bills. These findings generally reflect the general practice regarding CNCDs in Ghana as a developing country. The results are, thus, properly posited in the Ghanaian context in terms of the practices regarding CNCD management.

The conceptual framework of the study posits that clinical care by health professionals, patients' roles through self-management, and support from caregivers are the major means through which CNCDs are managed (Wagner, 1998). The findings of the current study where management of CNCDs involved practices of health professionals, patients, and their caregivers, are, therefore, congruent to the conceptual framework's postulations. The fact that the management of CNCDs in the current study also involved patients and health professionals is, therefore, in line with the conceptual framework's postulations. Rea et al. (2007) also argued that management of CNCDs focuses on high-quality care, patient empowerment for self-management, and mobilisation of community resources which, in the case of the present study, was the practices of health professionals.

This study revealed that the management of CNCDs involved collaboration between health professionals of different qualifications. This finding reflects the general practice in Ghana even for health conditions that are not CNCD related. Thus, in the country, the management of all health conditions presented to health facilities are managed by various cadre of health professionals. While some take care of general assessments such as checking vital signs, others perform more specific roles such as diagnosing the patients and prescribing their medications. The findings are also consistent with the conceptual framework's recognition that management of CNCDs involves collaborative care by health professions such as nurses, medical doctors, dieticians, physiotherapists, and radio/chemotherapists (Bodenheimer et al., 2002).

Self-management education was provided by the health professionals to CNCD patients in this study. In Ghana, this is essential, as it ensures that patients are better positioned to take care of their own health while at home. It also supplements conventional patient education by supporting patients with CNCDs to live the best possible quality of life. The finding regarding self-management education also corroborates the conceptual framework's position that effective chronic care should entail patient self-management empowerment through self-management education (Bodenheimer et al., 2002; Wagner, 1998). Swendeman, Ingram, and Rotheram-Borus (2009) also argued that the identification and explanation of common patient-centric strategies by health professionals to deal with CNCDs constitute the focus of CNCD management. The essence of self-management education is warranted by the fact that individual responsibility needs to be instilled in patients while offering them tools to use for their care (Institute of Medicine, 2012). The conceptual framework, in this regard, indicates that, when patients are empowered and prepared enough about their conditions, they are able to contribute meaningfully to the management of their condition through active efforts such as monitoring of conditions. Such empowerment serves as cues to action for them, as posited by the health belief model, to take action in self-managing their conditions.

In this study, self-management was a key practice carried out by patients in the management of their conditions. The study revealed that CNCD patients performed self-management activities such as exercise, self-restrictions, and the use of anthropometric equipment to monitor health status. Patients spend most of their time at home before returning to health facilities for reviews. The need to self-manage their conditions is, thus, the key to ensuring that they do not relapse or experience adverse health outcomes. The reality, however, is that some patients, despite the self-management education given them by health professionals, do not carry out the needed efforts in self-managing their conditions. This, therefore, usually results in them worsening their health status.

The conceptual framework of the present study recognises self-management as a core component in the management of CNCDs. It proposes that patients need to control CNCDs and their effects (Clark, 2003) using strategies coherent (or not coherent) with clinicians' recommendation (Grady & Gough, 2014). The essence of self-management, as found in the present study, also reflects the health belief model's postulation of self-efficacy and how it enables individuals to take charge of their health. With self-efficacy, self-management practices of the patients are bound to be effective devoid of relapse.

The use of anthropometric devices to monitor health by some patients at home supports the arguments by Chiauzzi et al. (2015) and Patel, Park, Bonato, Chan, and Rodgers (2012) that the use of health monitoring devices helps patients to manage their conditions at their respective homes while reducing hospital stays and readmission rates. This is because patients can prevent the development of complications and emergencies with such devices. The findings of the study confirm the conceptual framework's postulation that effective CNCD management which achieves improved outcomes through quality care is dependent on how empowered and prepared patients are to take charge of their healthcare (Bodenheimer et al., 2002).

The involvement of patients in the CNCD management practices of health professionals is at the core of safe patient-centred services including the management of CNCDs. In the Ghanaian context, when patients are actively involved in the management of their health conditions by consenting to management decisions and selecting preferred options among management types, it empowers them to take their health into their own hands and ensure sustained progress in the improvement of their health status. In the conceptual chronic care model, Wagner et al. (2001) likened it to the flying of a small plane and noted that "If it is flown well, one gets where one wants to go with the exhilaration of mastering a complicated set of challenges. If it is flown badly, one either crashes or lands shakily in the wrong airport, reluctant to ever leave the ground again. The patient must be the pilot, because the other possible pilot, the healthcare professional, is only in the plane a few hours every year, and this plane rarely touches ground" (p. 66).

Benefits of patients being actively involved in their care include improved control of conditions, better physical functioning, enhanced patients' compliance with secondary prevention activities, and improved health in patients with chronic conditions (Arnetz, Almin, Berström, Franzen, & Nilsson, 2004; Arnetz, Winblad, Arnetz, & Hoglund, 2008; Loh, Leonhart, Wills, Simon, & Harter, 2007). This requires easy access to multifaceted information and tools to assist patients in decision-making. It has been posited that, when patients are empowered to actively participate in their own management process, they follow their management plan and attain a better management service (Department of Health, UK, 2004). In the theory of planned behaviour, this relates to the behavioural intention where active involvement of the patient would result in making up their mind to adhere to management guidelines, influenced largely by the perceived behavioural control.

Possible factors hindering patients from being willing and able to participate actively in the management of the CNCDs by health professionals in the present study could be related the patients' resilience, the specific health conditions, the healthcare professionals, tasks, and the healthcare setting-related factors (Davis, Jacklin, Sevdalis, & Vincent, 2007). The findings come at the backdrop of the WHO's (2016c) recommendation that patients should be encouraged to ask questions or speak about their concerns as well as engage in the design and development of tools and strategies concerning their care to increase their understanding and use of relevant tools, strategies, and information.

The current study revealed that, in most cases, health professionals did not consult patients concerning the management of their conditions. When that was done, patients also did not have any issue with it, as they were generally passively involved in the management of their conditions. A key factor that might have contributed to this observation could be patients' perception of their roles and status as subordinates to healthcare professionals (WHO, 2016c). For fear of being labelled as difficult patients, most patients may shy away from asking questions or make suggestions about the management of their condition. While patients may have also played a passive role to protect their personal safety (Doherty & Stavropoulou, 2012), others may not want an active role in their management (National Clinical Guideline Centre, 2012).

The conceptual framework recognises the active involvement of the patient in the delivery system such that management activities should meet the cultural background and understanding of the patient (Wagner, 1998). By so doing, the patients are involved to contribute their opinion towards decision-making concerning their conditions' management plans. It was, however, found in the present study that patients generally played passive rather than active roles in the management of their conditions. This could be due to inherent health delivery system issues such as heavy workload limiting management sessions and durations, limited room to engage patients, and existing paternalism among healthcare professionals, as has been posited in a previous study (WHO, 2016c).

In Ghana and other sub-Saharan African settings, people have always depended on their families to provide emotional support, assist ageing parents and grandparents, as well as support other family members when they are no longer able to function independently (Wolff, Feder, & Schulz, 2016). The finding of the present study where family members constituted the major caregivers of people living with CNCDs is, thus, not surprising but points to the essential role of families in supporting one another. The findings are congruent with Pinquart and Sörensen's (2007) argument that there is always a common expectation among families that those living in the same household should be able to help one another more than those living outside the household. Caregivers are, thus, mostly family members and most patients rely completely on them as well as friends for support (Årestedt et al., 2015; Pinquart & Sörensen, 2007).

Resonating the essential role of caregivers in the management of CNCDs as found in the present study, Trivedi (2017) posited that caregivers are essential in the management of CNCDs, as they ensure that patients comply with directives regarding medication and lifestyle. Trivedi indicated that CNCDs often result in weaknesses on the part of the patients, leading to difficulty in taking medication, movement, transportation, and general personal hygiene including eating, bathing, and taking care of wounds. There is, thus, the need for family and friends to stick around and help with these activities when necessary. According to Trivedi, caregivers provide a variety of assistance including emotional support, instrumental support (such as picking up medications), and complex medical tasks (such as wound care).

The roles performed by caregivers to support the management of CNCDs, as realised in the present study, also confirm those that have been reported in studies elsewhere. Braig et al. (2015), for instance, noted that family members who mostly serve as caregivers are often asked to share in the responsibilities of disease management by providing many forms of support such as driving patients to appointments, helping inject insulin (in the case of diabetes patients), as well as support in coping with the diseases. Also emphasising the specific roles played by caregivers as found in the present study, the National Academies of Sciences, Engineering, and Medicine (2016) noted that caregiving ranges from assistance with navigating the complex healthcare system, assistance with household tasks and mobility, provision of social and emotional support, advocacy and care coordination, health and medical care, as well as surrogacy.

The conceptual framework of the study advocates that community resources should be mobilised to meet the needs of patients living with CNCDs (Wagner, 1998). This, according to Wagner (1998), will ensure that there are social, financial, and emotional supports from various aspects of the community such as the home, neighbourhood school, non-profit and faith-based organisations, and government to keep the patient feeling active, supported, and involved. With a focus on the home and neighbourhood, the framework highlights that family and friends are important in ensuring that patients living with CNCDs obtain the needed care. Family and friends of patients living with CNCDs performing various important roles in supporting them, as realised in the present study, are, therefore, justified.

CHAPTER SIX

COPING STRATEGIES OF PATIENTS LIVING WITH CHRONIC NON-COMMUNICABLE DISEASES

Introduction

This chapter presents results on the coping strategies adopted by patients in managing their respective CNCDs. The results are based on interviews conducted among patients at KATH and KBTH. The chapter also discusses the key findings in the context of previous empirical literature, the conceptual framework of the study, and theories reviewed.

Themes

Table 10 presents the main themes and sub-themes which emerged from the interviews conducted among the patients. Three main themes emerged. They were the main coping strategies adopted by the patients in managing their conditions, sources of the coping strategies, and outcome of the strategies adopted.

Table 10: Coping Strategies Adopted by Patients in Managing Their CNCDs

Main Theme	Sub-theme
Main strategy adopted	Prayer • Self • Others (pastors)
	Engaging in social activities • Church meetings • Social visits • Playing games • Listening to radio/watching television
	Sharing of lived experiences • Discussions with other patients having the same condition
	Intrinsic motivation • Psyche self not to be thinking about the condition
Sources of coping strategy	Self • A personal decision not to worry over it
	Family and friends • Spouse, parents, children • Close friends
	Health professionals • Doctors; and • Nurses motivate me
	Religious faith • God • Bible • Pastor
Outcome of the strategies adopted	Successful Unsuccessful

Source: Amu, 2019

Main Coping Strategies Adopted

Living with a CNCD presents numerous variations in the individual's daily life (Brown, 2018), coupled with stigmatisation, which sometimes even results in suicidal ideations (Quarshie, Asante, Andoh-Arthur, Asare-Doku, & Navelle, 2018). Coping strategies are very important in successfully dealing with the vicissitudes of living with CNCDs. In this study, four sub-themes were realised regarding the coping strategies adopted by patients. These were prayer, sharing of lived experiences, intrinsic motivation, and engagement in social activities.

From the patients' interviews, prayer was the main strategy adopted by most of the patients in managing their conditions in this study. Prayer is a major form of alternative and complementary strategy towards better health outcomes for patients (Jors, Büssing, Hvidt, & Baumann, 2015; Yates et al., 2005) and has been shown to have positive effects on the physical and mental health improvement of patients living with CNCDs (Jors et al., 2015; Maltby, Lewis, & Day, 2008).

In the present study, the patients indicated that prayer strengthened their religious faith and enabled them to go through the vicissitudes of living with the CNCDs. They generally believed that prayers could heal their diseases. As such, they prayed unceasingly for God to hear their prayers and heal them of their afflictions. A male hypertensive patient from KATH, for instance, had this to say:

> *As for me, I pray in the morning. God is the healer, so I pray for him to heal me.*
>
> *–KATH, Patient, Male, 46 years*

In Ghana, the last population and housing census conducted in 2010 indicates that 94.8 percent of the population is religious (GSS, 2013). Christianity constitutes 71.2 percent of this proportion, Islam makes up 17.6 percent, African Traditional Religion takes up 5.2 percent, and other religions constitute 0.8 percent. In the current study, it was also realised that all the participants belonged to a religious grouping. The use of religious coping is, therefore, key in dealing with tribulations among the population. This was, therefore, what reflected in the current study, where most of the patients used religious coping in the form of prayer in dealing with their conditions.

Intrinsic-motivation, also known as self-motivation, has been shown as an effective strategy in coping with chronic illnesses (Apóstolo, Viveiros, Nunes, & Domingues, 2007; White, Issac, Kamoun, Leygues, & Cohn, 2018). In the present study, some of the patients relied on self-motivation as a coping strategy in managing their CNCDs. To such patients, dwelling on/brooding over the fact that they are living with the CNCDs only aggravates their health status. As such, they try to psyche themselves not to be thinking of their circumstances. A female patient from KBTH, for instance, said this:

> *Hmmm…yes. If you think about it, it rather makes the situation worse… so, I laugh over it [laughs] and I take it like a joke. If you think so much about it, it will worry you and for me it will even make my BP (blood pressure) go high in addition and I don't want that (to happen). So, I laugh over it and even take it out from my mind that I don't have that condition (Chronic Kidney Disease)*
>
> *– KBTH, Patient, Female, 25years*

Aside from prayer, some of the patients also coped with their CNCDs by engaging in social activities. Such activities include attending church programmes, community gatherings, social visits, playing games with others, and watching/listening to entertainment programmes on radio/television. These strategies helped the patients to forget the fact that they are living with their respective diseases. The advent of the media introduced new ways in which patients with CNCDs manage their conditions (Seeman, 2008), as they mainly resort to the various media sources in coping with the conditions (Merolli, Gray, & Martin-Sanchez, 2013). Many of the patients in the present study indicated that they were able to cope with their diseases by watching/listening to entertainment programmes on television/radio. This strategy served as a diversionary approach which made them forget about their diseases momentarily. It, thus, made them not to be thinking about the fact that they were living with a CNCD. Typical entertainment programmes which the patients watched were football commentary, soap opera, and music shows. The comments are summarised in the following quotes:

> *For me, I watch TV a lot. I also listen to football commentary on radio as well. I just sit by the radio and listen to the commentary whenever they are playing a football match. I also listen to music to take my mind off it (the disease).*
>
> *–KBTH, Patient, Male, 73 years*

> *Oh! ... I watch TV and listen to the radio. At night too, ‘Kunkumbagya’ (an Indian soap opera/tv series which airs on a local Ghanaian television station) (Laughs). I watch some when it is time and then I go to sleep. This helps me to forget about it.*

> *–KATH, Patient, Male, 54 years*

The mainstream media has always been an important medium for health promotion in Ghana. Ghanaians typically listen to radio or watch local television programmes of various forms in their free time. A lot of such programmes are entertainment programmes which range from live music shows to soap operas and movies. In the present study, the fact that many of the CNCD patients resorted to such programmes as a form of coping strategy, therefore, points to their relevance in improving the mental and overall health of the populace.

Concerning church programmes, the patients usually attended church meetings and other groupings, and this helped them to forget about the fact that they were living with the CNCDs.

> *What helps me to forget about it is that I like fellowship like church programmes. For instance, I attend AGLOW (a Christian fellowship centre) at Kaneshie (community in the Accra Metropolis), and there's another branch in Kasoa. I go there too and other church programmes.*
>
> *–KBTH, Patient, Female, 63 years*

Regarding social visits, the patients noted that, when they visit their friends, they engage in chats which helps them take their minds off their conditions. A female patient from KBTH, for instance, had this to say:

> *Normally, I don't stay in the room. After doing everything I go outside so that I don't think so much about it (the disease). I*

> *mostly go out and visit people I know and come back home around 6 (pm) and then watch television. Then I sleep off*
>
> *–KBTH, Patient, Female, 54 years*

A glaucoma patient from KATH confirmed social visit as a key social activity in coping with CNCDs when she noted that her friends sometimes visit her and they engage in chats. The following quote summarises her remarks:

> *Oh! sometimes my friends, some of my friends come to me and we chat. We talk about so many things, like good and happy things. So, it helps me to forget about it most of the time. It is only when they go that I think about it again*
>
> *–KATH, Patient, Male, 62 years*

A few of the patients also mentioned that playing video games with friends helps them to forget about their predicament. A male chronic kidney disease patient, for instance, said this:

> *Oh! Sometimes, I just sit behind my computer with a friend and we'd be playing (video) game...My brother, that's all, and it makes me feel okay.*
>
> *–KBTH, Patient, Male, 28 years*

Ghanaians are generally people who prefer to congregate and discuss social and personal issues. It is commonplace to visit a typical Ghanaian community and realise that both men and women are gathered under trees and sheds just conversing about social issues. The men would usually be playing local games such as ‘Ludo’, ‘Oware’, and ‘draft’ while conversing. The use of social activities in coping with CNCDs as found in the present study, therefore, lends itself to the role of the social structure in informing what people adopt in coping with their challenging situations.

A few of the patients also indicated that a coping strategy they adopted in managing their diseases involved sharing their experiences living with the diseases among themselves (those living with the condition). This, according to them, usually happened whenever they went for review at the respective hospitals. A diabetes patient from KATH, for instance, had this to say:

> *At times, when we come to the clinic like that is when we discuss issues related to diabetes with someone … Yes! it's amongst ourselves, then we engage in a conversation about the condition, and when we do it like that it helps to lift our spirit and make you feel okay small*
>
> *–KATH, Patient, Male, 54 years*

Sources of Coping Strategies Adopted

The ability to effectively cope with a CNCD requires that the individual is able to obtain driving force which propels him/her to keep being strong despite the vicissitudes involved in living with the chronic disease (Hoppe, 2013; Martínez-Montilla, Amador-Marín, & Guerra-Martín, 2017). The sub-themes which emerged based on sources of coping strategies adopted by the patients in the present study were self, family and friends, health professionals, and religious faith. These, thus, served as the driving forces behind the adopted coping strategies.

Many of the patients noted that the various coping strategies they adopted in managing their respective CNCDs emanated from themselves. Thus, they initiated the strategies themselves and were not conscientised or educated by anyone to adopt such strategies. For a chronic kidney disease patient from KATH, the fact that he was even alive when his friends were deceased was enough for him to psyche himself up, even in the face of living with a chronic non-communicable disease. He made the following remarks:

> *I always think about my old friends who are now late (deceased), then I encourage myself that since I am not dead but alive, I will not let my condition (the disease) stop me from living my life the way I have to.*
>
> *–KATH, Patient, Male, 58 years*

Family and friends are usually the ones who constitute the major driving forces of coping with CNCDs for some patients, as they are the ones who spend much time with them and attend to their needs (Machado, Dahdah, & Kebbe, 2018). In this study, the patients intimated that it was their friends and family members who motivated them to be strong and live positively with their respective conditions. It was through their encouragement that the patients were able to effectively cope with their conditions. Some family members with the same conditions even teach them their own coping strategies which they adopt.

> *My friends keep advising me that this illness won't be compatible with worry... So, I shouldn't be worrying... My wife and children are also there, so I play and watch the TV with them.*
>
> *– KATH, Patient, Male, 39 years*

> *My sister-in-law has some of this disease (diabetes), so the process she goes through to cope with it, she teaches me and that is why I also do them…like listening to radio and watching tv to take my mind off it (the CNCDs).*
>
> *–KBTH, Patient, Male, 73 years*

As a society which places much premium on the social structure in terms of the relationships that exist among individuals and their social environments, Ghanaians can hardly do anything without their social contacts which include family and friends. It was even realised in the previous chapter of this thesis that these family and friends are the major caregivers for the patients living with CNCDs. It was, therefore, not surprising to realise that many of the patients also relied on these caregivers in coping with their CNCDs.

In the present study, some patients indicated that the strategies they adopted in coping with their diseases were derived from the health professionals such as the doctors and nurses who managed their conditions at KATH and KBTH respectively. The patients indicated that their strategies were mainly obtained through the advice given to them by the health professionals about their conditions and how they were to be managed. With regard to the driving force of coping being from the advice that the health professionals give them about their conditions, a male diabetes patient from KATH said this:

> *I get them (coping strategies [prayers and watching TV]) from the doctor. It is the doctor who advises me to do this and that and*

> *when you go by it, it will help you. So, he is the one who has been motivating me.*
>
> *–KATH, Patient, Male, 54 years*

In Ghana, religious faith serves as an important source/driving force of coping for many people in times of illnesses (Okyerefo, 2011). In the present study, the majority of patients who indicated that prayer was their main coping strategy also noted that they adopted that strategy by virtue of their religious faith which centred on God, the Bible, and pastors. To many of the patients, God is the driving force behind their ability to cope with their respective conditions. At KATH, a male hypertension patient mentioned that God was the main driving force behind his coping strategy, which is prayer. The following quotes summarise what he said in this regard:

> *Every man must know where he is from and that God created him and if you need wisdom you go to God. It is God who directs our ways when we pray, so He gives me the source of encouragement to keep being strong.*
>
> *–KATH, Patient, Male, 46 years*

As people who are very religious and, thus, resort to religious coping in the form of prayer, the concept of ‘God’ being the driving force in life is a major issue of monotheism in Ghana. It is very common for a Ghanaian to attribute the whole of their existence and success in life to God. To the individuals, even the air that they breath is made possible by God, who is the very reason why they were still alive. The current study’s findings where a lot of the patients living with CNCDs attributed their coping strategies to God, thus, reflects the practice in the general population.

The Outcome of Coping Strategies Adopted

While coping strategies are effective in managing CNCDs, their success in enabling the patients to effectively deal with their conditions is not always guaranteed (White et al., 2018). In this study, while the majority of patients indicated that the coping strategies they adopted were successful, a few of them indicated otherwise. Success, in this case, implies that the patients were able to take their minds off the conditions and live positively. The patients indicated that the coping strategies adopted ensured that, even though they were living with the diseases, they were not affected psychologically. A male eye cancer patient indicated how prayer was successful in enabling him to deal with his condition. His comments are contained in the following quote:

> *Yes! (prayer has been successful), if not, it could have affected me and I might have drunk a poisonous substance to end my life (commit suicide), but the word of God motivates me and I encourage myself. So, it has been very useful.*
>
> *–KBTH, Patient, Male, 53 years*

Another patient, a 46-year-old patient from KATH, indicated how advice from a medical doctor has been successful in helping his blood pressure to decline. He had this to say:

> *Yes! it has helped. When I reported, my BP (blood pressure) was around 240, but it has now dropped to 170. Meaning it has come down and the medications and the worries I have decided to avoid have also helped. The doctor has said that after I take*

> *a scan, I will be discharged soon. He has advised that I should stop worrying so I can recover and go back to my job*
>
> *–KATH, Patient, Male, 46 years*

For a few of the patients, even though they tried adopting some coping strategies to help deal with their diseases, the adopted strategies had not been successful. One of the patients, for instance, indicated that, even though he resorted to prayers as a coping strategy, the fact that the disease was still present meant that the strategy had not been successful. The following quote illustrates what he said:

> *I have done all that but it's still the same… I have gone to be prayed for [chuckles] Hmmm… Yes I have some (TV) in my room but because of my ailment, when I even watch, all that they are saying, nothing goes through my ears*
>
> *–KATH, Patient, Male, 67 years*

Discussion

This chapter presented the coping strategies of patients in dealing with their CNCDs. The key strategies adopted were prayer and engagement in social activities. Other strategies adopted were sharing of lived experiences with others with the CNCDs and intrinsic motivation. The main sources which served as the driving forces of the coping strategies adopted were religious faith, health professionals, and the self. Most of the patients also showed that the strategies adopted were largely successful in effectively coping with the CNCDs.

The use of religious coping in the present study reflects the practice in the general Ghanaian society where most members of the populace find solace in God and prayer in dealing with the challenges they encounter in life. Religious beliefs and practices help the people to cope with difficult situations such as physical illnesses, stress, and depression from various afflictions in life (Aflakseir & Mahdiyar, 2016). The findings of the present study where patients adopted prayer as a major coping strategy for their conditions point to the high level of religious coping which is prevalent among Ghanaians (Okyerefo & Fiaveh, 2017).

Murray and Agyare (2018) posited that, in demonstrating religiosity, patients generally spend much time (months, weeks, and days) at places of worship and engage in other religious meetings/activities with the sense of enjoying fellowship with other believers. By these activities, their faith influences the way they think and perceive their health status with the hope of getting better. Individuals who use religious coping appear to handle their conditions more effectively than those who do not (Paloutzian, 2014). The findings that patients resorted to their religious faith as a coping strategy for their condition also support the view by Büssing et al. (2010) and Kohlsdorf (2015) that patients trust and believe that praying to God (divine help) can take their conditions away from them. It also supports authors who have suggested that Ghana is probably the most religious country in the world (Boakye, 2018; Murray & Agyare, 2018).

The conceptual framework of the study recognises coping as a way of responding to illness and as a potential intervention for chronic conditions (Boehmer, Dabrh, Gionfriddo, Erwin, & Montori, 2018; Martz, Livneh, &

Wright, 2007; Wagner et al., 2001). The adoption of religious coping by patients in the present study relates to the role of subjective norms in the adoption of a particular behaviour, according to the theory of planned behaviour. The theory posits that subjective norms present in the form of normative beliefs (which in the present study becomes religious beliefs) and influence people's behavioural intention towards a particular health behaviour.

Coping with a chronic non-communicable disease encapsulates both practical and emotional aspects of living one's life concerning one's health condition(s) (Potter, Kelly, Hunter, Fitzpatrick, & Peters, 2018). The findings of this study showed that patients engaged in social activities such as visiting families and friends as well as attending social gatherings as coping mechanisms. The findings, thus, point to the role of families and friends in supporting patients with CNCDs to cope with their conditions. This reflects the social milieu of the Ghanaian society where family and friends are key in dealing with the vicissitudes of life. This is congruent with the findings of a previous study where patients suffering from chronic diseases sought social support by talking to families and friends as a way of coping with their conditions (Kohlsdorf, 2015). Social support in coping, as realised in the present study, relates to the enabling factors of the health service utilisation model (Anderson & Davidson, 2001). Thus, families in the present study served as enabling factors which motivated the patients to adequately cope with their CNCDs.

Patients resorted to entertainment programmes such as football, music, and movies on radio and/or television in coping with their respective CNCDs in the present study. This finding confirms Reinecke's (2009) argument that the use of entertaining media seems to play a crucial role in many people's lives and that the media is actively used to recuperate from emotional and cognitive exhaustion. People who are coping with a health problem may experience psychological depletion, frustrating physical pain or immobility, or relative social isolation, but the media helps to relieve such psychological distress (Reinecke, 2009). The present study's findings also confirm Henneh and Amu's (2019) postulation about the important role of the creative arts in promoting health. In their study, the authors found that the majority of their participants used the creative arts such as movie, music, drama, and dance as a form of health promotion and also resorted to them for psychological healing. The current study's finding regarding the role of the media in CNCD coping is related to the cues to action tenet of the health belief model which are essential in serving as reminders to people in adopting strategies needed to improve their health status.

The use of media by many patients as found in the present is also thought to promote enjoyment in coping because it breeds pleasurable relief (Vorderer & Hartmann, 2008). A study conducted by Perks (2018) among individuals who used media marathoning as a coping process while dealing with health struggles showed that media marathoning offered beneficial cognitive, emotional, and physical regulatory opportunities for those dealing with health struggles. Besides, the use of media marathoning when dealing with a health concern was a strategic and active coping strategy that had potential health benefits (Perks, 2018).

Caregiving for a loved one with a chronic condition can be profoundly fulfilling, as individuals often move closer together when challenges arise.

However, caregiving can also be daunting, emotionally and physically challenging, and isolating (Sullivan & Miller, 2015). Additionally, families influence a patient's psychological adjustment and management of the illness, adoption of behaviours that influence recovery, functioning and adherence to treatments (Martire, Lustig, Schulz, Miller, & Helgeson, 2004).

The findings of the study showed that the main sources of coping for the patients were family (spouse, parents, and children) and friends. This reiterates the important roles that these people play in an individual's life. In Ghana, people mainly depend on their family and friends in times of tribulations. The findings, thus, encapsulate the practice in the Ghanaian context. This is consistent with a previous study by Abuosi et al. (2015) in which the authors indicated that family and friends influence patients coping with CNCDs since daily eating, physical activity, and even stress management happen in the setting of social activities and relationships. Asante (2018) also indicated that family members often provide emotional support that helps patients to handle the stresses of illness. In Ghana, friends may play these same roles and also influence eating in social groups. Friends may also join the patient in physical activities, help patients maintain their social roles, help patients avoid stigma related to their illness, and become their source of strength.

Most patients in the present study indicated that the coping strategies they adopted were successful. Success, to the patients, meant they were able to forget the predicaments and emotional challenges associated with their conditions. This, to a large extent, reflects the personal resilience that is common to the Ghanaian in dealing with challenges in life. The findings are also in line with previous studies which found coping strategies adopted by patients living with CNCDs as very successful (Martz et al., 2007; Sirois, Molnar, & Hirsch, 2015).

CHAPTER SEVEN

CHALLENGES ASSOCIATED WITH THE MANAGEMENT OF CHRONIC NON-COMMUNICABLE DISEASES

Introduction

This chapter presents results on challenges associated with the management of CNCDs. The results are based on interviews conducted among patients and health professionals at KATH and KBTH. Based on the key findings made, discussions are then conducted in comparison with existing literature, reviewed theories, and the conceptual framework of the study.

Themes

Patients generally indicated the challenges that confronted them in the management of their respective conditions. Health professionals, on the other hand, indicated the challenges associated with managing patients with CNCDs, the effects of these challenges on the management of the conditions, and then suggested strategies in addressing them. Table 11 presents the themes derived from the health professionals’ interviews while Table 12 presents that of patients.

Three sub-themes were realised in the health professionals’ interviews regarding the main challenges associated with the management of the CNCDs. These were personal, institutional, and patient-related challenges. Two sub-themes were also realised from the patients’ interviews. They were financial and social challenges. It was then realised that the challenges enumerated by the patients were congruent with the patient-related challenges reported by the health professionals. The challenges indicated by the patients were, therefore, triangulated with the patient-related challenges indicated by the health professionals under the sub-heading ‘patient-related challenges.’ Other main themes realised from the health professionals’ interviews comprised effects of challenges on the management of CNCDs and suggestions for addressing the challenges.

Table 11: Challenges, Effects and Suggestions for Improving the Management of CNCDs From Health Professionals' Interviews

Theme	Sub-theme
Main challenges in the management of CNCDs	Personal challenges • Language barrier • Self-reported stress emanating from a heavy workload Institutional challenges • Poor utility supply • Inadequate logistics • Inadequate staff • Inadequate motivation • Inadequate infrastructure • Inadequate in-service training Patient-related challenges • Financial challenges • Social challenges
Effects of challenges on the management of CNCDs	Poor quality of service Reduced contact periods for out-patient management services Disruption in management timelines
Suggestions for addressing the challenges/improving the status quo	Increase motivation for staff Reduce the cost of management procedures Organise regular in-service training for staff Provide and ensure the maintenance of equipment Review of NHIS to cover management of CNCDs Development of a chronic care management policy Provision and expansion of facilities Employment of more health staff and specialists Mass sensitisation on CNCDs

Source: Amu, 2019

Table 12: Challenges Associated With the Management of CNCDs From Patients' Interviews

Main theme	Sub-theme
Challenges in the management of the condition by patients	Financial challenges • Inability to afford the cost of managing the conditions • Difficulty in getting transportation fare to go for reviews • Inability to acquire equipment for monitoring health at home Social challenges • Nature of job limits adherence to treatment

Source: Amu, 2019

Main Challenges in Management of Chronic Non-Communicable Diseases

Chronic disease management has been noted as one of the daunting challenges of healthcare systems across the globe and it drains patients, health professionals, and the overall health systems socially and economically (Brunner-La Rocca et al., 2016; Nolte et al., 2008). This section presents the personal and institutional challenges enumerated by health professionals. It also presents a triangulation of the patient-related challenges as noted in both health professionals' and patients' interviews.

Personal challenges of health professionals

In the management of CNCDs, health professionals are normally faced with personal challenges which make it difficult for them to effectively carry out their responsibilities (Zwar et al., 2017). Two sub-themes were realised in the health professionals' interviews based on personal challenges. They were language barrier and self-reported stress emanating from a heavy workload.

Due to variations in the ethnic backgrounds of the CNCDs patients, the health professionals sometimes faced language barriers, as they were not able to speak/understand some of the patients' languages. Nevertheless, some health professionals noted that, in such cases, they called on colleagues who understood and could speak the patient's language to explain procedures, instructions, and their conditions to them, even though others used signs to communicate, especially when no other colleague was less busy. A nurse from KATH indicated how language barrier served as a personal challenge to her in the management of patients with CNCDs in the following quote:

> *sometimes, there are some things you need to tell the patient or to know her exact need…But you will be talking to the patient and the patient can't understand what you are saying. She will be talking to you and you can't also understand what he or she is saying… So, language barrier is a huge hindrance.*
>
> *– KATH, Nurse, Female, 26 years*

A physiotherapist from KBTH also narrated how language barrier served as a personal challenge in managing patients who came to the hospital with CNCDs. She made the following comments:

> *Sometimes, it is the language barrier... because they come and they can only speak Ga or Ewe but, it does not mean that if you don't speak that language, you should not treat the patient. So, sometimes we get a colleague therapist who can speak the language and then translate to us.*
>
> *– KBTH, Physiotherapist, Female, 27 years*

Another personal challenge almost all health professionals faced was work-related stress resulting from a heavy workload. The health professionals indicated that, due to heavy workload emanating from the inadequate staff vis-a-vis the number of patients reporting for care, they were always stressed. One of them for instance said this:

> *Yes! there is (work-related) stress because the patients become many and at times, the treatment takes a long time and when you are treating patients at times, the treatment will not work well because maybe the cancer changed its course so we have to change the type of chemo drugs they are given.*
>
> *– KBTH, Nurse, Female, 58 years*

Ghana is a multilingual country where there are over 80 local languages spoken (Paul, Simons, & Fennig, 2014). Even though the official language is English, people usually prefer speaking in their local languages. The country also has a quite high illiteracy level, which makes it difficult for a significant proportion of the population to speak the English language. There are, therefore, challenges with language when it comes to inter-ethnic exchanges/interactions. The findings regarding language barrier, therefore, posit with the Ghanaian context appropriately.

Institutional challenges of health professionals

Daily, health professionals are confronted with numerous institutional challenges which inhibit their efforts at effectively managing cases presented to them (Zwar et al., 2017). In the present study, health professionals faced some institutional challenges which militated against their management of CNCDs in the two facilities. Seven sub-themes were realised from the health professionals' interviews concerning institutional challenges. They were poor utility supply, inadequate logistics, inadequate staff, inadequate motivation, inadequate infrastructure, and inadequate in-service training. Poor utility supply was faced by health professionals from both hospitals. The professionals noted that they regularly experienced water shortages and intermittent electricity outages which interfered with management activities.

> *The water is not flowing. It can take like 5 to 6 days and it won't flow. Right now, just go to the washroom and see. You'll cry… And this place too is a female ward…There are always infections hovering around…basic handwashing technique is even poor because, how to get water kruaa is even a problem.*
>
> *– KATH, Nurse, Male, 28 years*

With regard to inadequate logistics, health professionals from both KBTH and KATH indicated that CNCD management was constrained by inadequate equipment, beds, and stockout of medications and other consumables. The challenges were enumerated more from KATH, compared to KBTH. Equipment essential for assessment, monitoring, and performing of management procedures were either inadequate or lacking in some departments. For inadequacy of essential drugs, the health professionals indicated how pharmacies lacked some medications which they felt should have been available:

> *Yea! there are some drugs that the pharmacy doesn't have so you have to go outside and buy them. So in this case, if the money is not available that means we can't provide that management for the patient…So, the medicines unavailability especially when they are needed is a major challenge over here.*
>
> *– KATH, Nurse, Female, 26 years*

Inadequacy of equipment was also intimated by the health professionals from both KATH and KBTH as a major institutional challenge, even though more health professionals indicated this challenge from KBTH, compared to KATH. A female nurse from KBTH, for instance, had this to say:

> *But for the institution, sometimes the machine breaks down. The visual field test machines, they break down. And then, we used to rely on 37 (referring to the 37 Military Hospital) when they break down but lately 37's machine* is also not working.
>
> *– KBTH, Nurse, Female, 34 years*

Blood pressure (bp) monitors, prescription cards, tissue paper, and continuation sheet at their outfit were also usually not available for use when needed.

> *... because it's (bp monitor) only one machine and it's taking a number of people every day, by the time you realise it has broken down. And when it breaks down too, it takes months... Sometimes too, common prescription cards, tissues…hey wahala (trouble), there is no tissue. A time came kruaa, continuation sheet for writing erh, clacking a patient, no, there was none...*
>
> *– KBTH, Nurse, Female, 32 years*

From both facilities, there was an inadequacy of health professionals juxtaposed to the number of clients they receive, leading to a heavy workload. It was explained that, although numerous cases were reported at the various units either on referral or review basis, there were inadequate health professionals to attend to such cases. This, therefore, made the workload heavy and stressful for them. The inadequacy of health professionals was higher at KBTH than KATH. A nurse from KBTH, for instance, explained how the inadequacy of medical doctors served as an institutional challenge in the management of CNCDs at the hospital. His views are expressed in the ensuing quote:

> *Sometimes, we don't have doctors. The doctor goes forward rounds and attends to emergencies. Sometimes, they don't come early and some of them too are on leave and there is a shortage. So, as they (patients) don't get doctors attending to them quickly, then they get angry.*
>
> *– KBTH, Nurse, Female, 32 years*

A physiotherapist from KATH also bemoaned the fact that there was a staff shortage at the hospital and how lack of financial clearance for employment of new staff hindered their work in managing the CNCDs.

> *Staff shortage…we are under-staffed. We are not getting new staff because there is no financial clearance for them to be employed so it is a problem…currently, people are getting to know more about physiotherapy...so you have more patients trooping in and wanting to be seen…so it's a problem.*
>
> *– KATH, Physiotherapist, Female, 31 years*

Another institutional challenge faced by the health professionals in the management of CNCDs was inadequate infrastructure. This was a common theme from both hospitals, where participants explained that there was not enough space for service delivery and staff accommodation. This challenge was, however, more pronounced at KATH than KBTH. A female health professional from KATH, for instance, noted that the space in which her outfit operated was too small:

> *Hmm, yes! Our clinic is very small. Sometimes, when you call the patients they don't get anywhere to sit. The patients too are many so as if they can expand the place a little, it would help. When the patients are crowded on you like that it makes working difficult and uneasy.*
>
> *– KATH, Nurse, Female, 30 years*

Inadequacy of motivation for staff was also reported by most of the health professionals. Some participants, for instance, noted that there was no motivation at all for health professionals. A nurse from KBTH, for instance, said this:

> *As for motivation, I don't want to talk about it, so you see that I never talk about staff motivation? It will not be forthcoming so even if you say it, you just talk in vain.*
>
> *– KBTH, Nurse, Female, 35 years*

In-service training was also not regularly organised for the staff. Some of the health professionals from both hospitals noted that workshops and conferences were not regularly organised for them to provide specialised care at the facility. A nurse from KATH, for instance, had this to say:

> *We don't get that kind of regular in-service training or regular updates. So, that becomes a huge challenge. We still use the very out-moded procedures and all that…if you get specialists to organise programmes for us, it will help, but that doesn't happen often.*
>
> *– KATH, Nurse, Male, 31 years*

As a developing country, Ghana has a health system mainly inundated by a myriad of challenges which militate against effective delivery of health services. While health facilities strive to provide top-up training in the form of workshops and conferences, these are usually not enough due to challenges with funding for such programmes. This challenge of inadequate in-service training is systemic sometimes, even beyond the specific hospitals.

As a result of the growing population of Ghana, the generally higher life expectancy rates, as well as the availability of refined foods, coupled with poor eating habits, the number of people requiring CNCD services keeps increasing. This, however, comes at the backdrop that the country faces grave human resource and infrastructural deficits needed to meet the growing demand for CNCD services. The challenges of limited space and inadequacy of health professionals, as mentioned by health professionals in the present study, therefore, reflect the systemic challenges inherent in the country's health system.

Patient-related challenges

The onset of a CNCD, as well as its management, usually has grave socio-economic consequences for patients and their families (Crews et al., 2015). In the present study, two themes were realised in both the health professionals' and patients' interviews concerning the patient-related challenges. They were financial and social challenges.

Financial challenges were intimated by both health professionals and patients. It emerged that many patients with CNCDs were constrained financially. They were, thus, unable to afford the cost of management and transportation for reviews. The following quotes summarise their responses:

> *Sometimes, it's financial constraints. Even the inability to cater for their transportation. So sometimes, they fail to come for review. So, I can say it's about financial constraints.*
> *– KBTH, Physiotherapist, Female, 27 years.*

> *Well! my problem is getting transportation because my fare to this place is GH¢ 6. Meaning, my transportation to and fro will total to GH¢ 12, and paying that amount anytime I am coming*

> *for review is a major problem for me because I don't have money to be doing it.*
>
> *–KATH, Patient, Male, 53 years*

> *Medications that have been written in the past three months are still in the folder because glaucoma drugs are very expensive. I know the least will be around GH¢ 60.00, some of them are GH¢ 300 or more. So,d patients find it difficult to buy them*
>
> *– KBTH, Nurse, Female, 34 years.*

> *The medications are expensive. Sometimes, I inject insulin and when it gets finished, I can go and buy one medication like GH¢ 500. At times I am not able to buy and inject. So right now, my financial state is really down.*
>
> *–KATH, Patient, Male, 54 years*

Even though the medications were expensive, some were not covered by the National Health Insurance Scheme (NHIS) which would have made them more affordable to the patients. Their comments are presented in the following quote:

> *All the drugs are expensive but, are not on health insurance except some cases of breast cancer that we have insurance support for…not part of the health insurance medicines list...we have one medicine here and it is about GH¢ 6,000 (US$ 1,106) but, it is not covered by the NHIS.*
>
> *– KATH, Nurse, Female, 34 years*

Some of the patients were also not able to purchase anthropometric equipment for monitoring health at home due to financial challenges. A stroke patient from KATH, for instance, had this to say:

> *Yes! I have challenges with the machine that help me to walk. When I went to Atonsu Agogo, they (the health facility) had some device that is used in doing walking exercise. I would have preferred to have some to use at home but I don't have enough money to buy it. It really disturbs me.*
>
> *–KATH, Patient, Female, 50 years*

In Ghana, a lot of the working population earn below the minimum wage (Smith, Anker, & Anker, 2017), which points to the high rates of poverty within the adult population. When an individual becomes incapacitated in terms of being unable to work and earn an income due to a CNCD, it exerts a lot of financial constraint on the individual. Considering that medications and surgical procedures carried out in the management of CNCDs are quite expensive, it becomes difficult for them to afford. This, therefore, explains why the patients generally could not afford the cost of managing their CNCDs.

The main social challenge identified among patients was the nature of job limiting adherence to treatment. It was realised that due to their respective occupations, some of the patients were not able to go for their reviews on time. Some were also not able to take their medications on time. A 26-year-old eye cancer patient, for instance, narrates how his job makes it difficult for her to go for her review on time:

> *I'm a teacher and I have to be in school at some particular times while am supposed to be here (at the hospital) too…The timing is one major problem I'm facing and it makes it difficult for me to come for review sometimes as indicated by the health workers.*
>
> *–KATH, Patient, Female, 26 years*

Due to the nature of his job, a 46-year-old hypertensive patient from KATH also indicates his inability to adhere to his treatment schedule by taking his medications on time. He mentions this in the ensuing quote:

> *The nature of our jobs makes it difficult to keep track of the medications to take when you wake up. It would have helped if there was someone checking up on me that "Daa your medicine is here, have you taken it or I have placed it in the car. But there is nobody like that…ahh! So, I forget to take them (medicines) sometimes.*
>
> *– KATH, Patient, Male, 46 years*

Effects of Challenges on the Management of Chronic Non-Communicable Diseases

The myriad of challenges encountered by health professionals and patients affect the management of CNCDs in several ways (Lim, Chan, Alsagoff, & Ha, 2014). In this study, three sub-themes emerged with regard to the effects of the challenges on the management of CNCDs. These were poor quality of service delivery, reduced contact periods for out-patient management services, and disruption in the management timelines.

A major effect of the personal, institutional, and patient-related challenges intimated by the study participants was the poor quality of service delivery. The health professionals specifically indicated that the inadequacy of equipment and in-service training, a heavy workload, and unavailability of medicines resulted in reduced quality of services provided.

> *Over here, the work burden is very huge so when you come in, we are supposed to clear the patients…it is more like getting rid of them…many of us are of the view that medicines provided by the national health insurance scheme are not as efficacious as the original drugs. With those drugs, some patients would still not attain the set therapeutic targets.*
>
> *– KBTH, Medical doctor, Male, 40 years*

Another effect of challenges such as workload and financial constraints of patients on management of CNCDs was reduced contact period for out-patient management services. The health professionals posited that, due to the number of patients who must be attended to, the time needed to be spent with each patient is reduced to allow for all patients to be cared for. A physiotherapist from KATH, for instance, had this to say:

> *…honestly speaking, the number of times that a patient is supposed to come here for therapy, they do not get it because of the workload here...so instead of the patient coming three times*

> *in a week, we rather resort to two times in a week or once in a week just to reduce the amount of workload.*
>
> *– KATH, Physiotherapist, Male, 25 years*

Some health professionals also noted that challenges such as non-adherence to management directives by patients resulted in disruptions in the management timelines. They noted that challenges such as patients replacing or adding alternative treatment to the ones prescribed by the hospital lead to deteriorations in patients' health and this, according to them, affects the management timelines negatively.

> *Yes! we schedule the patient to come for review because it is a regimen. If the patient has to come every three weeks, he has to come every three weeks… when you are asked to come and you don't, you disrupt the treatment schedule…if he defaults, the condition becomes complicated.*
>
> *– KBTH, Nurse, Female, 34 years*

Suggestions for Addressing Challenges in Management of CNCDs

The health professionals proffered ways of addressing the myriad of challenges faced in the management of CNCDs. These were increased motivation for hospital staff, reduced cost of management procedures, organisation of regular in-service training for staff, and maintenance of equipment. Others were the review of the NHIS to cover management of all CNCDs, developing of a chronic care management policy, provision and expansion of facilities, employment of more health staff and specialists, and mass sensitisation on CNCDs. With regard to mass sensitisation on CNCDs, for instance, the health professionals noted that the public had been provided with medically false information. The right information was, therefore, needed to be communicated to the masses to avoid the consumption of unwholesome health products. It is also meant to reduce the over-expectation of patients about their conditions.

On ensuring the maintenance of equipment, the health professionals indicated that machines which were outdated needed to be replaced, with broken-down ones repaired, to make them functional. Concerning the review of the NHIS, some health professionals noted that, in order to offset the financial burden of chronic disease management on patients, CNCD management should be extensively covered in the NHIS more than it currently does. On employing more staff, the health professionals noted that the recruitment of more staff will help reduce the amount of stress on existing workers and make service delivery even better. The following quotes summarise the suggestions:

> *We urge them to give us more in-service training in the form of conferences…there should be more workshops for us concerning the new era of treatment concerning diabetes for instance, and the other (chronic non-communicable) diseases.*
>
> *– KATH, Nurse, Female, 40 years*

> *They should come out with a chronic disease management policy. Apart from the standard treatment guidelines, we don't have treatment guidelines for these conditions. The country has to work out to develop some…We should have a policy to train health workers to administer healthcare, especially chronic*

> *care. We have to get a policy that ensures that these drugs are available.*
>
> *– KBTH, Medical doctor, Male, 40 years*

The suggestions proffered by the health professionals are laudable and reflect the challenges they experience in managing CNCDs daily. However, some of them do not seem feasible, considering the systemic constraints inherent in the Ghanaian health system. For instance, while the suggestion of expanding facilities and employing more staff are very laudable, the Ghanaian government has usually complained of the fiscal challenges which do not make their provision possible. Health professionals are trained and graduated annually in the country by health training institutions. It, however, takes the state several years to absorb those professionals. The challenge has always been about getting funding to execute financial clearance for the new staff.

Discussion

This chapter presented results on the main challenges faced by patients and health professionals in the management of CNCDs. Personal and institutional challenges of health professionals, as well as patient-related challenges, were realised. They included language barrier, self-reported stress emanating from a heavy workload, poor utility supply, as well as inadequate staffing, motivation, infrastructure, and in-service training. Effects of the challenges on the management of CNCDs comprised poor quality of services, disruption in management timeline, and reduced contact periods for out-patient management services.

The institutional challenges of poor utility supply and inadequate logistics, staffing, motivation, infrastructure, and in-service training realised in the present study point to the deficiencies that impede the ability of the health system to effectively handle CNCD cases in Ghana. As a developing country, the country is faced with fiscal challenges which impede the ability to efficiently resource the health sector. While several efforts have been made by successive governments in resourcing the health sector, the ever-increasing population, with its attendance health-seeking needs, makes it difficult to achieve a balance between demand for health services and the availability of the human and capital resources to meet those needs.

The institutional-level challenges realised in the present study could be attributed to the WHO's (2010) postulation of inadequate political commitment by states to accelerate the priority given to non-communicable diseases in the national health and development agendas. The inadequate political commitment, according to the WHO (2019b), is demonstrated by the low levels of priority given to CNCDs in health development strategies and the minimal funding allocated to the control and prevention of such diseases. Thus, national plans and policies for the control and prevention of CNCDs are always under-funded.

Concerning the institutional challenges realised in the present study, the conceptual framework posits that effective chronic disease management calls for a healthcare delivery system design that encourages and enables productive interactions (Wagner, 2000). This is because the chronic care model recognises that the effective control of most chronic diseases requires appropriate medical therapy. The multiple tasks involved are more likely to be accomplished with the delegation of care from the medical doctor to others including nurses on the team. Wagner et al. (2001), for instance, demonstrated the added benefits of ready access to nurses and other health professionals who have the time and skills required for optimal management of CNCDs.

In resonance with the findings of the present study on the institutional challenges is a 2010 report by the WHO which posited that the management of CNCDs exerts great indirect and direct costs on health system budgets (WHO, 2010). To assemble nationwide responses, most countries establish governmental units in their respective Ministries of Health to address the spiralling burden of CNCDs. However, most health systems do not have operational nation-wide plans in place. Capacity for the control and prevention of CNCDs is inadequate in most of the health systems, as infrastructural deficits as well as essential logistics are prevalent (WHO, 2010). The WHO further noted that poor health systems are noted to be the main impediments to improving health outcomes in countries with chronic disease crises. There, are, for instance, enduring challenges of access and utilisation of health facilities for people living with CNCDs.

The institutional-level challenges realised in the present study also relate to the epidemiological transition model’s stage of degenerative and man-made diseases, where structural impediments preclude the ability of the health system to effectively manage the ever-increasing proportion of CNCDs that are presented as a result of increased life expectancy (Caldwell, 1998). The personal challenges intimated by health professionals in the present study point to the role of predisposing factors of the health service utilisation model (Anderson & Davidson, 1991) in the management of CNCDs. Predisposing factors, according to the model, constitute individuals’ socio-demographic characteristics (which, in this case, was place of residence and language spoken) which either facilitate or militate against effective management of CNCDs.

The findings of the present study concerning the health professionals' personal challenges of self-reported stress emanating from job-related heavy workload point to the fact that the health professionals may not be in the position to give off their best in accelerating patient recovery rates, considering their schedules and the fact that there is always limited time for them to attend to each patient, as even mentioned by some of the health professionals in the present study. The study's results confirm previous researches that have established heavy workloads as challenges confronting health professionals in the management of CNCDs (Moth, Vestergaard, & Vedsted, 2012; Oni et al., 2014).

The patient-related findings of the present study where patients had financial challenges in affording the cost of management, in getting transportation fare for review, and the inability to acquire equipment for monitoring health at home confirm findings from previous studies which indicated that CNCDs have serious socio-economic consequences for patients and their families, through increased individual and household impoverishment (Crews et al., 2015; Kankeu, Saksena, Xu, & Evans, 2013; Mendenhall, Kohrt, Norris, Ndetei, & Prabhakaran, 2017; Prabhakaran, Jeemon, & Reddy, 2013).

Some of the patients in the present study actually attributed their inability to afford the cost of managing their conditions (buy medicines, undergo surgeries, and/or pay for laboratory tests) to the fact that not only are they very expensive, but they are also not covered by the NHIS. The NHIS is

Ghana's social health insurance policy which was established in 2003 to ease the financial burden emanating from accessing healthcare, particularly on the poor (Kumi-Kyereme, Amu, & Darteh, 2017).

The NHIS covers about 95 percent of the disease burden of the country and most out-patient and in-patient services, including the majority of surgeries, emergency care, accommodation at the wards of health facilities, and drugs listed on the medicines list of the scheme (Amu, Dickson, Kumi-Kyereme, & Darteh, 2018; Amu, Kumi-Kyereme, & Darteh, 2017). The fact that the drugs needed by the patients in the present study were not covered by the NHIS, thus, implies that they are not on the medicines list. This, however, comes at the backdrop of the conceptual framework's postulation that a major role of a health system is to advocate and implement policies and programmes that improve patient care (Kesteloot, 1999). The fact that patients had financial challenges in the management of their CNCDs also points to the role of modifying variables in either facilitating or militating against patients' ability to effectively manage their conditions, as posited by the health belief model (Chen et al., 2007). In this study, the wealth status of many of the patients, thus, militated against their ability to afford the cost of managing their CNCDs.

The plethora of challenges faced in the management of CNCDs at the two hospitals resulted in the poor quality of services rendered to patients, reduced contact periods for out-patient management services, and disruption in management timelines as recounted by the health professionals. These effects again point to the systemic lapses inherent in the health system of Ghana and which militate against the possible achievement of the SDG 3 aimed at ensuring healthy lives and promoting wellbeing for all at all ages by the year 2030 (CID, 2015; WHO, 2019c).

CHAPTER EIGHT

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter presents a summary of the study, focusing on the study objectives, the conceptual framework adopted, methods used, and key findings made. Conclusions are drawn, with recommendations made for policy and practice, in addition to suggestions for further research based on the key findings.

Summary

This study assessed the management of CNCDs at KATH and KBTH in Ghana. The research specifically explored the practices involved in the management of CNCDs, coping strategies adopted by patients in managing their conditions, and challenges associated with the management of CNCDs. The diseases which constituted the focus of the study were diabetes, cancer (breast, prostate, cervical, leukaemia, eye, lung), chronic kidney disease, COPD, asthma, hypertension, sickle cell, glaucoma, and stroke. The chronic care model and health belief were adapted to underpin the study as its conceptual framework.

The research was guided by the interpretivist research philosophy. It adopted a qualitative approach in addressing the objectives. Phenomenology was adopted as the study design. Patients receiving CNCD care at the time of data collection for the study as well as health professionals managing their conditions were recruited. Based on purposive and accidental sampling procedures, 82 patients and 30 health professionals were recruited from the two hospitals. Data were collected from the participants with two in-depth interview guides, one for the patients and the other for the health professionals. The data were then analysed using reflexive thematic analysis. Frequency tables were, however, used to present the socio-demographic characteristics of the study participants as well as the CNCDs of the patients.

On the management of CNCDs by health professionals and patients, four themes were realised. These were general management, specific management, self-management, and role of caregivers in the management of CNCDs. General management involved assessment and education. Specific management was dependent on the CNCD presented and the stage at which the first reporting of the condition was done. Self-management comprised education on self-management at home by health professionals as well as self-restrictions, exercises, personal first aid, and use of anthropometric equipment to monitor health status by patients.

The major caregivers of the patients were family and friends. Roles performed to support the management of CNCDs included social support such as encouraging and helping patients with exercises, buying medications and ensuring patients take such medications on time, ensuring patients eat on time, accompanying and staying with patients at the hospital, and providing emotional support. They also provided financial support which was mainly the payment of medical bills of patients. It was realised that most of the patients were passively involved in the management of their conditions. They were generally not consulted/involved in decision-making about their conditions.

The main coping strategies adopted by the patients in managing their CNCDS were prayer, engaging in social activities (such as watching/listening to entertainment programmes on television/radio, church meetings, social visits, and playing of games), sharing of their lived experiences with the conditions, and psyching themselves intrinsically so as not to brood over the conditions. For the majority of the patients, the main sources of their coping strategies were family (spouse, parents, children, etc.) and friends.

Among the health professionals, the three main challenges which militated against the successful management of CNCDs were personal, institutional, and patient-related. The personal challenges comprised language barriers and stress emanating from job-related heavy workload. The institutional challenges comprised poor utility supply as well as inadequate logistics, staffing, motivation, infrastructure, and in-service training. The patient-related challenges included financial challenges comprising inability to afford the cost of management (to undergo surgeries, medications, and pay for laboratory tests) and transportation for reviews, as well as inability to acquire equipment for monitoring health at home. They also included social challenges of non-adherence to management directives, the use of alternative medicine among patients, and late first-time case reporting of patients.

The plethora of challenges faced had negative effects on the management of the CNCDs. This comprised poor quality of services rendered to patients, reduced contact periods for out-patient management services, and disruption in management timelines. To forestall these challenges, the health professionals made suggestions. They included institutional suggestions such as increasing motivation for staff, reducing the cost of management procedures, organising regular in-service training for staff, as well as the provision and maintenance of equipment. Others were a review of the NHIS to cover management of all CNCDs, developing of a chronic disease management policy, provision and expansion of health facilities, employment of more health staff, and mass sensitisation on CNCDs.

Conclusions

Concerning the CNCDs management practices, it has been realised that the social role of caregivers cannot be overemphasised, as they contribute immensely to the management of CNCDs. This is further emphasised by the role that caregivers played in patients' coping. Caregivers are, however, not formally factored into the management of CNCDs. The implication this may have for the success and progress of managing CNCDs is that many management programmes and protocol may fail to achieve their optimum efficiency and effectiveness due to the disintegration of caregivers and weakened self-management.

In the management practices carried out by health professionals on people with CNCDs, it has been realised that patients play passive roles instead of being actively involved in the management of their conditions. Decisions regarding procedures to be conducted are sometimes not taken together with the patients. Even though such practices of not effectively involving patients might be due to medical and expert reasons, the consequence of patients being passively involved in the management of their conditions is that the health system may fail to provide services that are socially and culturally acceptable to the patients, as inherent in SDG Three. Besides, efforts to overcome the paternalistic healthcare service provision by clinicians may not be realised, as patients continue to assume a recessive role and health professionals maintain the old-aged dominance in the provision of care.

A myriad of challenges inhibits the effective management of CNCDs. Management programmes, services, and strategies may, therefore, not result in improved health outcomes for CNCD patients due to the variety of challenges hindering them. This has implications for the quality and type of services provided. Overall, the existing health system and institutional-related challenges may imply an overburdened health system and structure as well as weak health system financing and leadership. This may have the potential of failing to support people needing CNCD management services. In general, the findings of this study underscore the likelihood of the health system not being able to support chronic disease management or providing quality and adequate care at an acceptable cost to the individual and the system. Morbidities, especially needing in-patient services, and mortalities as a result of reduced survival rate, attributable to CNCDs may, therefore, continue to increase. The findings of the study adequately reflect the postulations of the conceptual framework and follow the phenomenological research philosophy adopted for this thesis. Most importantly, the findings made in this study immensely contribute to the literature on CNCD management based on the practices, coping strategies, and challenges involved in the management processes.

Recommendations

Recommendations for policy and practice

1. In carrying out their CNCD management practices, the health professionals should ensure that patients are always consulted and their approval sought in all aspects of the processes. This includes decisions

concerning medications and surgeries conducted. In cases where patients are not in the position to give consent, their caregivers should be made to do so.

2. Concerning coping strategies, efforts should be made by health professionals to educate CNCD patients on the need to resort to formalised coping strategies such as counselling, which have been proven as effective in coping with the conditions. Thus, patients should be encouraged to seek professional counselling from clinical psychologists as a form of coping with their conditions.
3. To address the inadequacy of in-service training, the management of KBTH and KATH in collaboration with professional bodies such as the Nursing and Midwifery Council, Medical and Dental Council, and the Allied Health Professions Council, Ghana, should periodically organise workshops and conferences for the health professionals. Continuing Professional Development (CPD) points should also be awarded for such workshops and conferences.
4. To address the challenge of patients not being able to afford the cost of managing their CNCDs, the MoH, the Ghana Health Service, and the National Health Insurance Authority, together with other stakeholders, should review the National Health Insurance Policy to extensively cover management of CNCDs.
5. Overall, to give more priority to the management of CNCDs in the country, the MoH, through the Ghana Health Service, should develop and implement a CNCD management policy.

Suggestions for Further Research

1. Further studies could be carried out to evaluate efforts and interventions put in place to prevent and control CNCDs to generate evidence for improving the status quo.
2. Studies could also be done to extensively explore the role of caregivers and the management outcomes of CNCDs. This is because the current study did not interview caregivers directly.

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APPENDICES

Appendix A: Informed Consent Form

Title: MANAGEMENT OF CHRONIC NON-COMMUNICABLE DISEASES AT KOMFO ANOKYE AND KORLE BU TEACHING HOSPITALS IN GHANA

Principal Investigator: HUBERT AMU

Address: [University of Cape Coast, Department of Population and Health, Cape Coast]

General Information about Research

The study generally seeks to explore the management of chronic non-communicable diseases at Komfo Anokye and Korle Bu Teaching hospitals in Ghana. Specifically, the study seeks toexplore the management of chronic non-communicable diseases, explore the coping strategies adopted by patients in managing their conditions, and explore challenges associated with management of chronic non-communicable diseases by patients and health professionals.

This study involves patients receiving chronic non-communicable disease management services at Korle Bu and Komfo Anokye Teaching Hospitals and health professionals who provide these services.

Procedures

To find answers to some of these questions, we invite you to take part in this study. If you accept, you will be required to participate in an interview with [name of interviewer] or myself. You are being selected to take part in this discussion because we feel that your experience as a person suffering from a chronic non-communicable disease can contribute much to this discussion. You will be asked about the management of your conditions and challenges in management of the condition.

If you do not wish to answer any of the questions posed during the interview, you may say so and the interviewer will move on to the next question. The interview will take place in this facility and no one else but the interviewer will be present. The information recorded is considered confidential, and no one else except the researchers (Hubert Amu [Principal Investigator], Akwasi Kumi-Kyereme [Principal supervisor], Eugene Kofuor Maafo Darteh [Co-Supervisor], Farrukh Ishaque Saah [Field assistant], Phyllis Parbey [Field Assistant], Amos Soregnmen Ziema [Field assistant]) will have access to the information documented during your interview.

The interview is expected to take about 35-45 minutes.

Possible Risks and Discomforts

Having to talk about one’s health conditions, especially considering the toll of the condition on you, may induce psychological discomforts for you. Hence, a psychologist will be available to provide support and encouragement in such situations which may arise. Providing information to the research team regarding your condition is also a risk. However, you are assured that information provided would be solely used for academic purposes.

Possible Benefits

There are no direct benefits associated with your taking part in this study. However, the findings of this study will be helpful in decision making and improvements in the management practices for chronic non-communicable diseases in the country.

Confidentiality

We will protect information about you to the best of our ability. You will not be named in any reports that may be produced from this study. Stored data will be protected from unauthorised access, voice recordings will be locked with a password-protected computer programme called ‘my lockbox’. Notes taken will be typed and the soft copies equally locked in ‘my lockbox’. The hard copies will, however, be hidden from sight. data will only be accessible to the researchers and shall not be shared with any third party.

Compensation

There is no compensation for participating in this study.

Voluntary Participation and Right to Leave the Research

You are free to decide to participate or otherwise in this study. Your refusal to participate or decision to withdraw will not affect your access to care and other services. You may refuse to answer any of the questions and you may withdraw from the project at any time without any consequences.

Contacts for Additional Information

Principal Investigator: Hubert Amu

Address: Department Of Population and Health**,** University of Cape Coast,
Cape Coast

Telephone: 0249015463/0509648582

Email: hubertamu@gmail.com

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of University of Cape Coast (UCCIRB), the Institutional Review Boards of Korle Bu (KBTH-IRB), Komfo Anokye Teaching Hospital (KATH-IRB), and Kwame Nkrumah University of Science and Technology (KNUST-IRB). If you have any questions about your rights as a research participant you can contact the Administrator at the IRB Offices of the respective institutions through:

UCC-IRB: 0558093143/0508878309/0244207814 or email address: irb@ucc.edu.gh.

KBTH-IRB: ***0302666766 or email addresses: rdo@kbth.gov.gh***

KATH-IRB: +233 3220 00 617 or email:KATHrdu@gmail.com/rdureg@kathhsp.org

KNUST-IRB: +233205453785 or email: chrpe.knust.kath@gmail.com

VOLUNTEER AGREEMENT

The above document describing the benefits, risks and procedures for the research title **Management of Chronic non-communicable diseases at Komfo Anokye and Korle Bu Teaching Hospitals in Ghana** has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

Date Name and signature or mark of volunteer

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

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

Date Name and signature of witness

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

Date Name and Signature of Person Who Obtained Consent

Appendix B: Data Collection Instruments

Appendix B1: In-depth interview guide for patients

Interview number: ____________________

Date of interview (DD/MM/YY): _____/____/_______

Time of interview: Start ____End_____

Interviewer: ____________________

SECTION A: Socio-demographic Characteristics of participants

1. Sex of participant __________________
2. How old are you? __________________
3. What is your marital status? __________________
4. What religion do you practice? __________________
5. What is your ethnicity? __________________
6. What is your educational level? __________________
7. Where do you reside? __________________
8. What is your occupation? __________________
9. What chronic non-communicable disease(s) have you been diagnosed with?
10. How long have you been living with this condition(s)? (Probe for number of years/months participant has been living with the disease/year in which the participant was diagnosed with the chronic non-communicable disease).
11. How long have you been attending this facility for the management of your condition(s)? (Probe for number of months/years of attending the specific facility

SECTION B: Management of chronic non-communicable diseases

12. How central are you in the management of your condition by health professionals in this facility? (Probe for the frequency, and instances where participant was involved or consulted in planning and implementing management strategies).
13. How do you personally manage your condition? (Probe for self-care or self-regulatory activities such as taking one's medicine on time, use of physical indicator devices such as scale, sphygmomanometer, and diet monitor, going for reviews as scheduled, adherence to diet, exercise, and other management strategies)

SECTION C: Challenges associated with the management of chronic non-communicable diseases by patients

14. What are the major challenges you encounter in management of your condition? (Probe for financial and social constraints [lack of social support and negative perceptions of family and friends towards condition which negatively influence their level of support for the patient in managing the condition]).
15. Are there other challenges you face in the management of your condition which we have not spoken about?

SECTION D: Coping strategies adopted by patients in managing their conditions

16. How do you cope with the challenges associated with your condition? (Probe for counselling, visiting spiritual leaders or pastors for prayers and spiritual support, support from friends and family, social

organisations, immersing one's self in work to 'kill time', self-regulating activities such as reading, listening to music, etc.)

17. What source did you learn these strategies from? (Probe for counselling session, religious service, health professionals, etc)
18. How successful have these coping strategies been for you? (Probe for improvement in condition, or condition remaining same/retrogressing)

Thank you.

Appendix B2: In-depth interview guide for health professionals

Interview number: ________________

Date of interview (DD/MM/YY): ____/____/_____

Time of interview: Start ___End____

Interviewer: ________________

SECTION A: Socio-demographic Characteristics of participants

1. Sex of participant ________________
2. How old are you? ________________
3. What is your marital status? ________________
4. What religion do you practice? ________________
5. What is your ethnicity? ________________
6. What is your educational level? ________________
7. Where do you stay? ________________
8. What is your job title? ________________
9. For how long have you been practising? ________________
10. How long have you been practising in this facility? ________________

SECTION B: Management of chronic non-communicable diseases

11. Which conditions do you generally manage in this facility?
12. How do you normally manage patients with the chronic non-communicable diseases in this facility? (Probe for processes and procedures used to cater for patients; also probe for the main medication/suggestions on self-management options that are provided to patients)

SECTION C: Challenges associated with the management of chronic non-communicable diseases by the health professionals

13. What personal challenges do you face in the management of patients with chronic non-communicable diseases? (Probe for language barrier, lack of training on management of the diseases, work-related stress, time and workloads, poor interpersonal relationship with clients and other staff, etc.)
14. What institutional challenges do you encounter in the management of patients with chronic non-communicable diseases? (Probe for lack of logistics such as testing devices and drugs, institutional support, and motivation)
15. What patient-related challenges do you face in the management of patients with chronic non-communicable diseases? (Probe for non-adherence of patients to management directives such as exercise, diet, medicines, reporting for review etc.; poor financial strength of patients, seeking alternative treatment from diverse sources, poor attitude of patients towards their own management and health professionals etc.)
16. What other challenges do you encounter during the management of clients with chronic non-communicable diseases?
17. How do these challenges affect management of chronic non-communicable disease services rendered in this facility?
18. In what ways can these challenges be addressed? (By facility, by government, by patients, and by other stakeholders in health)

Thank You.